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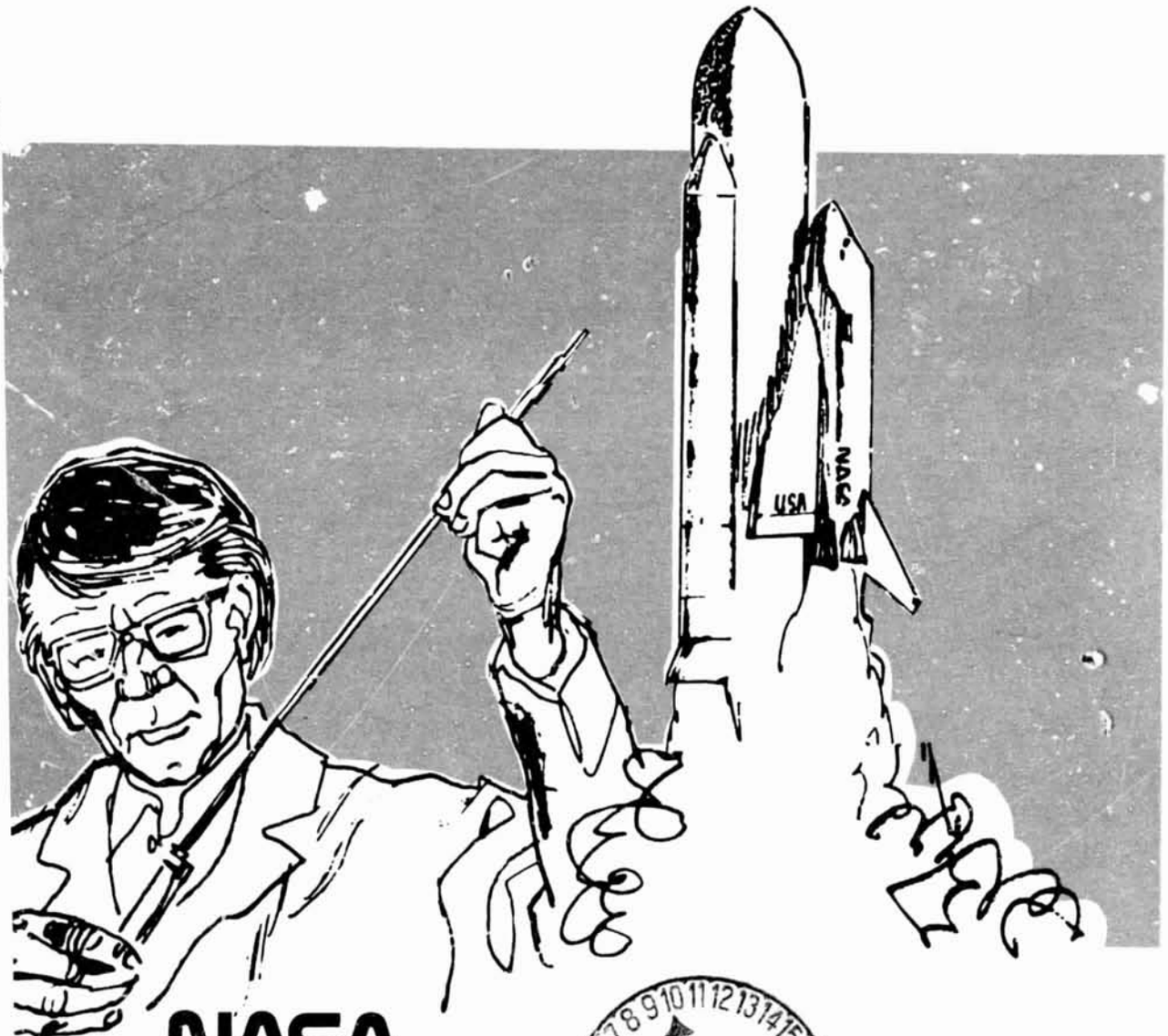
NASA TM-81777

NASA'S UNIVERSITY PROGRAM

ACTIVE PROJECTS



(NASA-TM-81777) NASA'S UNIVERSITY PROGRAM: ACTIVE PROJECTS, FISCAL YEAR 1979 (National Aeronautics and Space Administration) 562 p HC A24/MF A01 CSCL 05A

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G3/80 13075 Unclas

NASA
National Aeronautics and Space Administration

University Affairs Office
Washington, D.C. 20546

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FISCAL YEAR 1979

IMPORTANT NOTICE

This report is compiled primarily from information obtained from two internal NASA sources:

1. "CASE Report on Support of Colleges and Universities" (NASA Form 1356).
2. "Individual Procurement Action Report" (NASA Form 507).

Therefore, other sources should be used for completing Forms 507 or 1356.

NASA'S UNIVERSITY PROGRAM

ACTIVE PROJECTS

FISCAL YEAR 1979

National Aeronautics and Space Administration
University Affairs Office
Washington, D.C. 20546

Acknowledgements

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Additional Copies

This publication is available from the National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, Virginia 22161

FOREWORD

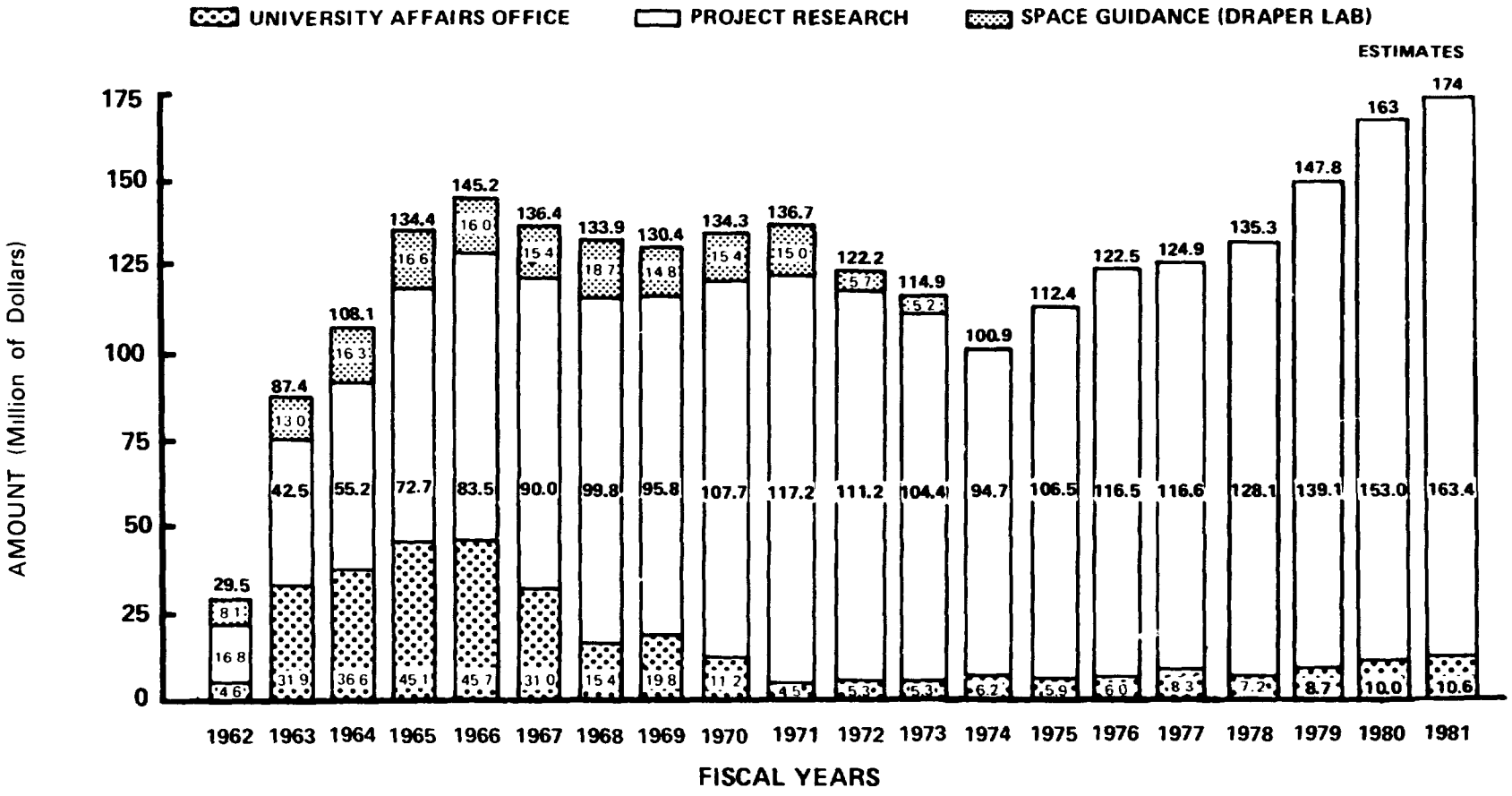
As basic policy NASA believes that colleges and universities should be encouraged to participate in the nation's space and aeronautics program to the maximum extent practicable. Indeed, universities are considered as partners with government and industry in the nation's aerospace program. NASA's objective is to have them bring their scientific, engineering, and social research competence to bear on aerospace problems and on the broader social, economic, and international implications of NASA's technical and scientific programs. It is expected that, in so doing, universities will strengthen both their research and their educational capabilities to contribute more effectively to the national well-being.

NASA Field Centers and certain Headquarters Program Offices provide funds for those R&D activities in universities which contribute to the mission needs of that particular NASA element. Although NASA has no predetermined amount of money to devote to university activities, the effort funded each year is substantial. (See the bar chart on the next page). This annual report is one means of documenting the NASA-university relationship, frequently denoted, collectively, as NASA's University Program.

The University Affairs Office (UAO) serves as a focal point for NASA's relationships with colleges and universities. One of its roles is to provide information on the NASA University Program. The present document is designed to serve several purposes and a wide range of audiences from private individuals to NASA employees. The emphasis is on the technical content of the program, rather than on fiscal data, which is available separately from UAO. As some terminology will not be familiar to all readers, a "User's Guide" is included to facilitate the fullest use of the material related to the interests of any particular reader.

Information on obtaining reports resulting from these projects may be obtained from: NASA, Scientific and Technical Information Branch, Code NST, Washington, DC 20546.

NASA OBLIGATIONS TO UNIVERSITIES



NOTES:
1. Excludes obligations to or through Federally Funded Research and Development Centers (e.g. JPL)
2. Change in status from "university" to "non-profit" for three organizations accounts for $10.1M of the difference between FY 73 and FY 74. (Draper Lab, ERIM, Dudley Observatory).
3. University Affairs Office includes 1962-1971 Sustaining University Program.
4. Omitted Obligations: Transition Period (July-Sept 1976). $27.7M; FY 59, $3.6M; FY60; $5.0M; FY 61, $14.5M.

Source: NASA University Affairs Office

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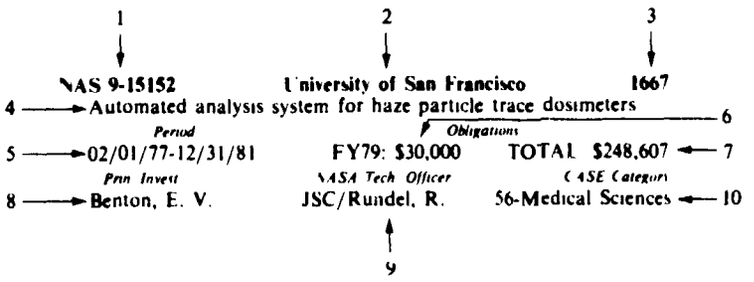
USER'S GUIDE

The University Program Report provides current information and related statistics for each grant/contract/cooperative agreement active during the report period. The following guidance is provided as an aid to the reader in readily locating material of interest and in optimizing the use of this document.

I. Typical Citation



1. Agreement Number.
2. Institution Name.
3. Accession Number.
4. Brief work description.
5. Approximate period of performance.
6. Amount (if any) actually provided during the indicated fiscal year.
7. Total amount actually provided during the indicated period of performance.
8 Principal Investigator(s) at the educational institution.
9. NASA Technical Officer(s) and organizational location.
10. CASE Field of Science and Engineering code and name.

II. NASA Installations

NASA installations are included in the citation as abbreviations (item 9). The following listing of installations will be useful to those desiring further information on specific projects.

Abbrev.	Installation Name and Address	Telephone Number for Information
ARC	Ames Research Center NASA Moffett Field, CA 94035	415/965-5000
DFRC	Dryden Flight Research Center NASA P.O. Box 273 Edwards, CA 93523	805/258-3311
GSFC	Goddard Space Flight Center NASA Greenbelt, MD 20771	301/344-5042
JPL	Jet Propulsion Laboratory 4800 Oak Grove Drive Pasadena, CA 91103	213/354-4321
JSC	Johnson Space Center NASA Houston, TX 77058	713/483-3111
KSC	Kennedy Space Center NASA Kennedy Space Center, FL 32899	305/867-7113
LARC	Langley Research Center NASA Langley Station Hampton, VA 23665	804/827-1110
LERC	Lewis Research Center NASA 21000 Brookpark Road Cleveland, OH 44135	216/433-4000
MSFC	Marshall Space Flight Center NASA Marshall Space Flight Center, AL 35812	205/453-2121
NSTL	National Space Technology Laboratories NASA NSTL Station, MS 39529	601/688-2211

WFC	Wallops Flight Center NASA Wallops Island, VA 23337	804/824-3411
HQ	NASA Headquarters Washington, DC 20546	202/755-2320

The abbreviation for NASA Headquarters, HQ, usually carries a suffix, for example HQ-LU, which denotes a particular office and general area of responsibility. (LU is the University Affairs Office.) A full listing of the suffix letters and information on NASA's organizational structure may be found in the NASA Headquarters Telephone Directory. (The Directory is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

III. CASE Fields of Science and Engineering

The National Science Foundation (NSF) operates a government-wide system (CASE) for collecting and analyzing data on support to colleges and universities. Participating agencies report annually to NSF which in turn issues *Support to Universities, Colleges and Selected Nonprofit Institutions.* The CASE Fields, used in the extensive tabulations contained in that document, form the only consistent classification system for government sponsored research. The fields are listed in full in Appendix B.

IV. Cross-Indexes

The cross-indexed Appendices are related to the citations (descriptions) by the accession number (item 3). The accession number has meaning only in this report; it is in no way permanently associated with nor does it uniquely identify a specific grant/contract/cooperative agreement anywhere except in the present report. Accession numbers are assigned sequentially to the citations, beginning with 1000. Thus, when an entry of interest is identified in any one of the Appendices, the associated accession number allows ready location of the full description in the body of the report.

Appendix A – Given only the grant/contract/cooperative agreement number this index enables the reader to locate the citation. The first page tells how to distinguish among agreement types.

Appendix B – This index provides rapid access to all projects in a particular area of endeavor, as defined by the CASE Fields. This listing is also easily used to determine the institutions and principal investigators conducting NASA projects in a field.

Appendix C – The types of effort sponsored by each NASA installation may be determined from this index.

ALABAMA

NAS 8 32945 **Alabama A&M University** **1000**
Solution growth of crystals in zero gravity experiment for materials processing in space

Period	Obligations	
03/05/78-03/05/83	FY79: $30,000	TOTAL: $165,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Lal, R. B.	MSFC/Williams, J. R.	47-Materials Engr
Kroes, R. L.	MSFC/Ruff, R. C.	

NAS 9-14770 **Alabama A&M University** **1001**
Communication system performance evaluation based upon pseudonoise testing

Period	Obligations	
10/20/75-10/31/79	FY79:	TOTAL: $59,425
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ingels, F. M.	JSC/Teasdale, W. E.	45-Elec Engr

NGR 01-001-023 **Alabama A&M University** **1002**
Development of remote sensing applications for natural resource study and management

Period	Obligations	
06/13/73-02/28/78	FY79:	TOTAL: $116,124
Prin Invest	*NASA Tech Officer*	*CASE Category*
Montgomery, O. L.	MSFC/Downs, S. W., Jr.	
	MSFC/Cagle, F. A.	55-Agriculture Sci

NSG 8033 **Alabama A&M University** **1003**
The study of crystals for space processing and the effects of 0-gravity

Period	Obligations	
01/15/76-12/31/78	FY79:	TOTAL: $52,046
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lal, R. B.	MSFC/Schafer, C. F.	13-Physics
	MSFC/Thomas, P. E.	

NSG 8037 **Alabama A&M University** **1004**
Atmospheric effects on coherent laser systems

Period	Obligations	
06/01/76-05/31/80	FY79: $23,501	TOTAL: $95,491
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huth, G. C.	MSFC/Bilbro, J. W.	45-Elec Engr
	MSFC/Kent, M. I.	

NSG 8041 **Alabama A&M University** **1005**
Parametric study of rock pile thermal storage for solar heating

Period	Obligations	
06/01/76-03/31/80	FY79:	TOTAL: $62,677
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Saha, H.	MSFC/Humphries, W. R.	46-Mech Engr
	MSFC/ZurBurg, F. R.	

NSG 8042 **Alabama A&M University** **1006**
Preparation of guinea pig macrophages for electrophoretic experiments in space

Period	Obligations	
06/01/76-05/31/78	FY79:	TOTAL: $[illegible]235
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, J.	MSFC/Allen, R. E.	59-Life Sci, NEC
Grayson, G.	MSFC/Kent, M. I.	

NSG 8051 **Alabama A&M University** **1007**
Space processing of biological materials

Period	Obligations	
06/01/77-08/31/78	FY79:	TOTAL: $25,693
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Gibson, W. L.	MSFC/Snyder, R. S.	59-Life Sci, NEC
	MSFC/Kent, M. I.	

NSG 8057 **Alabama A&M University** **1008**
Evaluation of digital system design languages

Period	Obligations	
10/01/77-10/15/78	FY79:	TOTAL: $21,990
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shiva, S. G.	MSFC/Gould, J. M.	45-Elec Engr
	MSFC/Kent, M. I.	

NSG 8062 **Alabama A&M University** **1009**
The application of remote sensing technology to soil mapping and land use problems of Alabama and southeastern United States

Period	Obligations	
05/15/78-05/14/79	FY79:	TOTAL: $43,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Montgomery, O. L.	MSFC/Downs, S. W., Jr.	
	MSFC/Kent, M. I.	39-Env Sci, NEC

NSG 8064 **Alabama A&M University** **1010**
Guinea pig macrophages for electrophoretic experiment

Period	Obligations	
09/29/78-04/28/79	FY79:	TOTAL: $3,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, J.	MSFC/Snyder, R. S.	59-Life Sci, NEC

NSG 8065 **Alabama A&M University** **1011**
Statistical classification techniques for engineering and climatic data samples

Period	Obligations	
11/01/78-12/31/79	FY79: $27,274	TOTAL: $27,274
Prin Invest	*NASA Tech Officer*	*CASE Category*
Temple, E. C.	MSFC/Smith, O. E.	21-Mathematics
Shipman, J. R.	MSFC/Kent, M. I.	

NSG 8066 **Alabama A&M University** **1012**
Research in computer processing of remotely sensed data

Period	Obligations	
11/15/78-11/14/79	FY79: $70,000	TOTAL: $70,000

Prin Invest	NASA Tech Officer	CASE Category
Montgomery, O. L.	MSFC/Smith, A. D. MSFC/Atwell, B. H.	39-Env Sci, NEC

NSG 8067 **Alabama A&M University** **1013**
Characterization of space environment using plant cells and tissues

Period	Obligations	
02/01/79-01/31/80	FY79: $25,896	TOTAL: $25,896

Prin Invest	NASA Tech Officer	CASE Category
Sharma, G. C.	MSFC/Nerren, B. H. MSFC/Kent, M. I.	51-Biological Sci

NSG 8068 **Alabama A&M University** **1014**
The motion of particles in interstellar space released from a nuclear waste payload container

Period	Obligations	
07/01/79-06/30/80	FY79: $22,000	TOTAL: $22,000

Prin Invest	NASA Tech Officer	CASE Category
Williams, A. C.	MSFC/Burns, R. E. MSFC/Kent, M. I.	13-Physics

NAS 8-32220 **Athens State College** **1015**
Speckle holography

Period	Obligations	
01/24/77-01/23/78	FY79:	TOTAL: $5,999

Prin Invest	NASA Tech Officer	CASE Category
Martin, A. M.	MSFC/Finnell, S. E. MSFC/Moore, W. W., Jr.	13-Physics

NAS 8-32834 **Athens State College** **1016**
Study of microprocessors in ultrasonic control functions

Period	Obligations	
02/14/78-01/13/79	FY79:	TOTAL: $9,900

Prin Invest	NASA Tech Officer	CASE Category
Workman, G. L.	MSFC/Woodis, K. W. MSFC/Knadler, J. M.	45-Elec Engr

NAS 8-32928 **Athens State College** **1017**
Vapor transport mechanisms

Period	Obligations	
02/01/78-02/29/80	FY79:	TOTAL: $77,975

Prin Invest	NASA Tech Officer	CASE Category
Workman, G. L.	MSFC/Zwiener, J. M. MSFC/Thomas, P. E.	19-Phys Sci, NEC

NAS 8-31572 **Auburn University** **1018**
Design, processing and test of large scale integrated circuit arrays

Period	Obligations	
12/01/75-08/14/79	FY79:	TOTAL: $70,790

Prin Invest	NASA Tech Officer	CASE Category
Tung, C.	MSFC/Matheney, J. L. MSFC/Cagle, F. A.	45-Elec Engr

NAS 8-32215 **Auburn University** **1019**
Development of Alabama resources information management system

Period	Obligations	
12/20/76-07/09/79	FY79:	TOTAL: $20,000

Prin Invest	NASA Tech Officer	CASE Category
Vachon, R. I. Herring, B. E.	MSFC/Huffman, J. D. MSFC/Paludan, C. T.	39-Env Sci, NEC

NAS 8-32633 **Auburn University** **1020**
The large scale integrated circuits cost optimizing

Period	Obligations	
09/06/77-04/30/79	FY79:	TOTAL: $29,400

Prin Invest	NASA Tech Officer	CASE Category
Cook, K. B. Kerns, D. V.	MSFC/Routh, D. E. MSFC/Hollis, B. R., Jr.	49-Engr, NEC

NAS 8-32634 **Auburn University** **1021**
The large scale integrated circuits process technology

Period	Obligations	
09/06/77-12/05/78	FY79:	TOTAL: $29,400

Prin Invest	NASA Tech Officer	CASE Category
Kerns, D. V. Cook, K. B.	MSFC/Routh, D. E. MSFC/Feltner, W. R.	49-Engr, NEC

NAS 8-33092 **Auburn University** **1022**
Developing and characterizing improved radiation hard technology for space applications (CMOS)

Period	Obligations	
11/06/78-11/05/79	FY79:	TOTAL: $30,000

Prin Invest	NASA Tech Officer	CASE Category
Kerns, D. V. Cook, K. B.	MSFC/Routh, D. E. MSFC/Gould, J. M.	45-Elec Engr

NCA 8-130 **Auburn University** **1023**
Solid propellant rocket motor internal ballistic performance variation analysis

Period	Obligations	
12/14/77-01/13/79	FY79:	TOTAL: $24,709

Prin Invest	NASA Tech Officer	CASE Category
Sforzini, R. H. Foster, W. A., Jr.	MSFC/Shackelford, B. W., Jr. MSFC/Miller, J. Q.	41-Aero Engr

NCA 8-132 **Auburn University** **1024**
Solid propellant rocket motor internal ballistic performance variation analysis

Period	Obligations	
01/12/79-01/11/80	FY79: $36,000	TOTAL: $36,000

Prin Invest	NASA Tech Officer	CASE Category
Sforzini, R. H.	MSFC/Shackleford, B. W., Jr. MSFC/Miller, J. Q.	46-Mech Engr

NCA 8-133 **Auburn University** **1025**
Evaluating the feasibility of detecting and measuring lightning discharges from a space station

Period	Obligations	
01/26/79-11/25/79	FY79: $4,000	TOTAL: $4,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Irwin, J. D.	MSFC/Wagnon, F. W. MSFC/Harper, W.	45-Elec Engr

NSG 3233 **Auburn University** **1026**
Development of basic theories and techniques for determining stresses in rotating turbine or compressor blades

Period	Obligations	
12/01/78-04/01/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Swinson, W. F. Turner, J. L. Ranson, W. F.	LERC/Decker, A. J.	49-Engr, NEC

NSG 8047 **Auburn University** **1027**
Grain quality inspection system. Phase I Feasibility evaluation

Period	Obligations	
01/24/77-09/30/79	FY79	TOTAL: $74,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Flood, C. A., Jr.	MSFC/Daniel, C. C. MSFC/Kent, M. I.	49-Engr, NEC

NSG 2217 **Talladega College** **1028**
Experimental research on the thermodynamic properties of sulfuric acid

Period	Obligations	
05/01/77-04/30/80	FY79: $40,600	TOTAL: $100,573
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morrison, R. A.	ARC/Whitten, R. C. ARC/Farlow, N. A.	13-Physics

NAS 9-13844 **Tuskegee Institute** **1029**
Analytical investigation of the heat-pipe radiator as a spacecraft heat rejection system

Period	Obligations	
01/01/74-12/31/79	FY79:	TOTAL: $85,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sellers, J. P., Jr.	JSC/French, B. O.	46-Mech Engr

NCC 2-12 **Tuskegee Institute** **1030**
Morphometrics of cellular damage in mice receiving whole body irradiation

Period	Obligations	
08/01/79-07/31/80	FY79: $45,000	TOTAL: $45,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sapp, W. J.	ARC/Philpott, D. E.	54-Env Biology

NGT 01-005-750 **Tuskegee Institute** **1031**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/75-05/31/80	FY79: $14,000	TOTAL: $56,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dybczak, Z. W	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	49-Engr, NEC

NGT 01-005-780 **Tuskegee Institute** **1032**
Pre-cooperative engineering education program

Period	Obligations	
10/01/78-07/31/80	FY79: $2,750	TOTAL: $8,950
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dybczak, Z. W	HQ-LU/Pohly, J. G. LERC/Allen, R. P.	49-Engr, NEC

NSG 3154 **Tuskegee Institute** **1033**
Evaporation behavior of superalloys

Period	Obligations	
08/01/77-08/07/80	FY79: $37,556	TOTAL: $102,556
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ramirez, R. P.	LERC/Titran, R. H. LERC/Klopp, W. D.	47-Materials Engr

NSG 3295 **Tuskegee Institute** **1034**
An improved computer model for prediction of axial gas turbine performance losses

Period	Obligations	
08/01/79-07/31/80	FY79: $33,728	TOTAL: $33,728
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jenkins, R. M.	LERC/Glassman, A. J.	41-Aero Engr

NSG 8038 **Tuskegee Institute** **1035**
Investigation of electrical breakdown characteristics and stability of insulating materials used on solar cells (photovoltaic converters)

Period	Obligations	
05/01/76-12/31/79	FY79:	TOTAL: $49,042
Prin Invest	*NASA Tech Officer*	*CASE Category*
Doreswamy, C. V.	MSFC/Young, L. E. MSFC/Kent, M. I.	45-Elec Engr

NSG 8054 **Tuskegee Institute** **1036**
An investigation of absorber and radiators for solar power systems

Period	Obligations	
09/01/77-06/30/80	FY79: $27,489	TOTAL: $52,489
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sellers, J. P., Jr.	MSFC/Brantley, L. W. MSFC/Kent, M. I.	46-Mech Engr

NAS 8-32923 **University of Alabama - Birmingham** **1037**
Conducting experiments to determine the operating limitations of the Hannig continuous flow electrophoretic separator

Period	Obligations	
06/07/78-12/06/78	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sachs, G.	MSFC/Rhodes, P. H.	39-Life Sci, NEC
Jackson, R. D.	MSFC/Snyder, R. S.	
Stewart, H. B.		

NAS 8-33014 **University of Alabama - Birmingham** **1038**
Materials processing in space experiment: Whole cell electrophoresis aboard Spacelab

Period	Obligations	
05/17/78-12/31/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chiovetti, R., Jr.	MSFC/Bannister, T.	59-Life Sci, NEC
	MSFC/Snyder, R. S.	

NGR 01-010-001 **University of Alabama - Birmingham** **1039**
Model for origin and coevolution of genetic code and the process of protein synthesis

Period	Obligations	
05/09/73-05/31/80	FY79: $58,720	TOTAL: $269,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lacey, J. C., Jr.	HQ-SB/Young, R. S.	12-Chemistry

NAS 8-28097 **University of Alabama - Huntsville** **1040**
Triggering mechanisms for solar flares

Period	Obligations	
12/06/71-08/31/80	FY79: $78,000	TOTAL: $577,198
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, S. T.	MSFC/Tandberghanssen, E.	13-Physics
	MSFC/Thomas, P. E.	

NAS 8-29316 **University of Alabama - Huntsville** **1041**
Working model of the London moment readout system

Period	Obligations	
10/06/72-04/04/80	FY79: $106,497	TOTAL: $623,196
Prin. Invest	*NASA Tech. Officer*	*CASE Category*
Hendricks, J. B.	MSFC/Decher, R.	46-Mech Engr
	MSFC/Urban, E. W.	

NAS 8-30563 **University of Alabama - Huntsville** **1042**
Study of magnetospheric and laboratory plasma physics experiments

Period	Obligations	
09/01/74-04/30/80	FY79: $110,000	TOTAL: $344,669
Prin Invest	*NASA Tech Officer*	*CASE Category*
Comfort, R. H.	MSFC/Chappell, C. R.	13-Physics
Horwitz, J. L.	MSFC/Fields, S. A.	

NAS 8-31170 **University of Alabama - Huntsville** **1043**
Study of efficient low power diffractometer designs

Period	Obligations	
01/15/75-05/31/80	FY79: $35,000	TOTAL: $138,391
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gregory, J. C.	MSFC/Parnell, T. A.	13-Physics
	MSFC/Eby, P. B.	

NAS 8-31171 **University of Alabama - Huntsville** **1044**
Study of internal wave motions on the neutral atmosphere

Period	Obligations	
02/14/75-01/31/80	FY79: $48,000	TOTAL: $136,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hung, R. J.	MSFC/West, G. S., Jr.	39-Env Sci, NEC
	MSFC/Thomas, P. E.	

NAS 8-31293 **University of Alabama - Huntsville** **1045**
Solar heating and cooling technical data and systems analysis

Period	Obligations	
11/07/74-08/31/80	FY79: $493,483	TOTAL: $1,025,004
Prin Invest	*NASA Tech Officer*	*CASE Category*
Christiensen, D.	MSFC/Price, J. M.	13-Physics
	MSFC/Hoover, W. L.	

NAS 8-31729 **University of Alabama - Huntsville** **1046**
Numerical simulation of warm fogs

Period	Obligations	
11/05/75-03/31/80	FY79: $25,000	TOTAL: $74,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hung, R. J.	MSFC/Vaughan, O. H.	13-Physics
	MSFC/Thomas, P. E.	

NAS 8-31895 **University of Alabama - Huntsville** **1047**
Investigations in cosmic ray and gamma ray astronomy and nuclear instruments

Period	Obligations	
03/19/76-03/31/80	FY79: $75,500	TOTAL: $208,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gregory, J. C.	MSFC/Parnell, T. A.	13-Physics
	MSFC/Thomas, P. E.	

NAS 8-32818 **University of Alabama - Huntsville** **1048**
Infrared telescope cryogenic system design and development

Period	Obligations	
03/31/78-02/06/80	FY79: $89,997	TOTAL: $154,819
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karr, G. R.	MSFC/Urban, E. W.	13-Physics

NAS 8-33096 **University of Alabama - Huntsville** **1049**
Design automation of digital systems

Period	Obligations	
08/09/78-06/30/80	FY79: $33,618	TOTAL: $59,905
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shiva, S. G.	MSFC/Jones, R. E.	22-Computer Science
	MSFC/Cagle, F. A.	

ALABAMA (Continued)

NAS 8-33132 **University of Alabama - Huntsville** **1050**
Orbiting space science platform

Period	Obligations	
06/01/78-12/01/79	FY79: $32,725	TOTAL: $52,725
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, S. T.	MSFC/Morgan, S. H.	19-Phys Sci, NEC
	MSFC/Snoddy, W. C.	

NAS 8-33216 **University of Alabama - Huntsville** **1051**
Dynamic simulation of coronal mass ejections

Period	Obligations	
10/27/78-12/31/79	FY79: $35,800	TOTAL: $35,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Steinolfson, R. S.	MSFC/DeLoach, A. C.	13-Physics
Wu, S. T.	MSFC/Snoddy, W. C.	

NAS 8-33377 **University of Alabama - Huntsville** **1052**
Analysis and modeling of materials space environmental effects data

Period	Obligations	
06/22/79-06/21/80	FY79: $27,000	TOTAL: $27,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Castle, J. G.	MSFC/Gause, R. L	47-Materials Engr
	MSFC/Whitaker, A. F.	

NAS 8-33384 **University of Alabama - Huntsville** **1053**
Test facility for helium-3 refrigerator research

Period	Obligations	
05/31/79-05/30/80	FY79: $17,329	TOTAL: $17,329
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hendricks, J. B.	MSFC/Urban, E. W.	12-Chemistry
	MSFC/Thomas, P. E.	

NAS 8-33443 **University of Alabama - Huntsville** **1054**
Solar-terrestrial relationships

Period	Obligations	
04/18/79-11/03/79	FY79: $45,000	TOTAL: $45,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, S. T.	MSFC/Morgan, S. H.	19-Phys Sci, NEC

NAS 8-33542 **University of Alabama - Huntsville** **1055**
Advanced furnace development and scientific coordination activity

Period	Obligations	
06/29/79-06/28/80	FY79: $48,955	TOTAL: $48,955
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Hendricks, J. B.	MSFC/Aldrich, B. R.	47-Materials Engr
	MSFC/Naumann, R. J.	

NAS 8-33548 **University of Alabama - Huntsville** **1056**
An X-ray diffraction analysis of Ne3Ge

Period	Obligations	
07/11/79-07/10/80	FY79: $10,104	TOTAL: $10,104
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Davis, J. H.	MSFC/Lacy, L. L.	47-Materials Engr
	MSFC/Rathz, T. J.	

NGT 01-008-021 **University of Alabama - Huntsville** **1057**
Summer faculty fellowship program

Period	Obligations	
01/01/76-03/31/80	FY79: $168,371	TOTAL: $370,961
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karr, G. R.	HQ-LU/Carter, C. H.	49-Engr, NEC

NAS 8-32386 **University of Alabama - University** **1058**
Composite mobile holographic non-destructive test system analysis

Period	Obligations	
01/10/77-08/09/78	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, H. K.	MSFC/Owen, R. B.	13-Physics
	MSFC/Moore, W. W., Jr.	

NAS 8-33430 **University of Alabama - University** **1059**
Solid state switch design for large space structure technology

Period	Obligations	
04/05/79-12/31/79	FY79: $26,122	TOTAL: $26,122
Prin Invest	*NASA Tech Officer*	*CASE Category*
Raburn, W. D.	MSFC/Williams, D. E.	45-Elec Engr
	MSFC/Loggins, R. W.	

NAS 8-33507 **University of Alabama - University** **1060**
Space shuttle Induced Environment Contamination Monitor (IECM) air sampler experiment

Period	Obligations	
05/21/79-05/20/80	FY79: $24,000	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bertsch, W.	MSFC/Peters, P. N.	31-Atmos Sci
Zatko, D. A.	MSFC/Thomas, P. E.	

NGT 01-002-099 **University of Alabama - University** **1061**
Summer faculty fellowship program in research

Period	Obligations	
01/01/78-04/30/80	FY79:	TOTAL: $148,574
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barfield, B. F.	HQ-LU/Carter, C. H.	49-Engr, NEC

ALASKA

NCA 2-20901 **University of Alaska - Fairbanks** **1062**
Joint development of Alaska demonstration project

Period	Obligations	
11/27/78-10/31/79	FY79: $15,285	TOTAL: $15,285
Prin Invest	*NASA Tech Officer*	*CASE Category*
Krebs, P. V.	ARC/Lumb, D. R.	39-Env Sci, NEC

ALASKA (Continued)

NGL 02-001-092 **University of Alaska - Fairbanks** **1063**
Application of remote sensing data to surveys of the Alaskan environment

Period	Obligations	
07/26/72-03/31/82	FY79: $150,000	TOTAL: $975,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, J. M.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 5219 **University of Alaska - Fairbanks** **1064**
Auroral spectroscopy using atmosphere Explorer observations

Period	Obligations	
10/01/77-07/31/80	FY79: $24,000	TOTAL: $47,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rees, M. H.	GSFC/Spencer, N. W.	13-Physics

NSG 6014 **University of Alaska - Fairbanks** **1065**
Active experiments using rocket-borne shaped charge barium releases

Period	Obligations	
01/01/76-12/31/79	FY79: $110,000	TOTAL: $509,361
Prin Invest	*NASA Tech Officer*	*CASE Category*
Davis, T. N.	WFC/Gray, J. W.	19-Phys Sci, NEC
Wescott, E. M.	WFC/Pless, R. H.	

NSG 6024 **University of Alaska - Fairbanks** **1066**
Observations of barium jets from Porcupine III and IV rocket launches

Period	Obligations	
09/01/78-08/31/79	FY79: $25,601	TOTAL: $25,601
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hallinan, T. J.	WFC/Gray, J. W.	19-Phys Sci, NEC
	WFC/Pless, R. H.	

NSG 6028 **University of Alaska - Fairbanks** **1067**
Observations of 'firewheel' chemical releases

Period	Obligations	
05/01/79-04/30/80	FY79: $23,000	TOTAL: $23,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Hallinan, T. J.	WFC/Gray, J. W.	19-Phys Sci, NEC

NSG 7447 **University of Alaska - Fairbanks** **1068**
Relationship between the ring current and magnetospheric substorms

Period	Obligations	
06/01/78-05/31/79	FY79:	TOTAL: $30,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Akasofu, S.	HQ-ST/King, J. H.	31-Atmos Sci

NSG 7625 **University of Alaska - Fairbanks** **1069**
Numerical simulation of the turbulent cascade and voltage amplification mechanism in the magnetosphere

Period	Obligations	
07/01/79-06/30/80	FY79: $13,000	TOTAL: $13,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Swift, O. W.	HQ-ST/Hedin, A. E.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

ARIZONA

DEN 3 50 **Arizona State University** **1070**
Social and economic impact study of photovoltaic power

Period	Obligations	
07/10/78-11/09/79	FY79:	TOTAL: $16,190
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bahr, D. M.	LERC/Bifano, W. J.	72-Economics
Merbs, C. F.		

NAS 1-15168 **Arizona State University** **1071**
Viking guest investigator program

Period	Obligations	
12/13/77-09/30/79	FY79:	TOTAL: $25,722
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	LARC/Spence, D. C.	31-Atmos Sci

NAS 8-32230 **Arizona State University** **1072**
Marshall mated element system translator

Period	Obligations	
12/15/76-11/13/78	FY79: $4,340	TOTAL: $122,557
Prin Invest	*NASA Tech Officer*	*CASE Category*
Woodfin, M. A.	MSFC/Lee, G.	21-Mathematics
	MSFC/Smith, J. G	

NAS 8-32357 **Arizona State University** **1073**
Building and obstacles wakes

Period	Obligations	
02/11/77-03/25/80	FY79: $19,958	TOTAL: $74,830
Prin Invest	*NASA Tech Officer*	*CASE Category*
Logan, E., Jr.	MSFC/Alexander, M. B.	31-Atmos Sci

NAS 8-32937 **Arizona State University** **1074**
The effect of a dispersed second phase on the ionic conductivity of solid state electrolytes

Period	Obligations	
12/13/77-12/13/82	FY79: $65,000	TOTAL: $201,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wagner, J. B.	MSFC/Reeves, F. A.	47-Materials Engr
	MSFC/Rathz, T. J.	

NCA 2-35802 **Arizona State University** **1075**
Joint development of a planetary geology curriculum guide

Period	Obligations	
08/01/78-01/31/80	FY79:	TOTAL: $18,459
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	ARC/Black, D. C.	32-Geological Sci

NCA 2-35901 **Arizona State University** **1076**
Ultra-microstructure of particles abraded under simulated Martian aeolian conditions

Period	Obligations	
10/01/78-11/30/79	FY79: $19,580	TOTAL: $19,580
Prin Invest	*NASA Tech Officer*	*CASE Category*
Krinsley, D.	ARC/Pollack, J. B.	32-Geological Sci
Greeley, R.		

NCA 2-35902 **Arizona State University** **1077**
Simulated Martian aeolian erosion and aggregate formation

Period	Obligations	
07/01/79-06/30/80	FY79: $21,362	TOTAL: $21,362
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Krinsley, D. Greeley, R.	ARC/Pollack, J. B.	32-Geological Sci

NGL 03-001-001 **Arizona State University** **1078**
Development of improved procedures for sampling, characterizing & classifying meteorite specimens

Period	Obligations	
04/16/63-02/29/80	FY79: $29,900	TOTAL: $360,323
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moore, C. B.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 2284 **Arizona State University** **1079**
Aeolian geology studies

Period	Obligations	
12/01/77-12/31/79	FY79: $30,626	TOTAL: $63,876
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	ARC/Black, D. C.	19-Phys Sci, NEC

NSG 3075 **Arizona State University** **1080**
Study of multiple jet array impingement heat transfer characteristics

Period	Obligations	
09/01/75-05/31/80	FY79: $78,000	TOTAL: $301,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Metzger, D. E. Florschuetz, L. W.	LERC/Hippensteele, S. A.	41-Aero Engr

NSG 7040 **Arizona State University** **1081**
The origin and early evolution of the solar system

Period	Obligations	
04/01/74-02/29/80	FY79: $39,000	TOTAL: $228,967
Prin Invest	*NASA Tech Officer*	*CASE Category*
Larimer, J. W.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7255 **Arizona State University** **1082**
The nature and origin of organic compounds in carbonaceous meteorites

Period	Obligations	
06/14/76-01/31/80	FY79: $45,000	TOTAL: $147,375
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Cronin, J. R. Yuen, G. U.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7415 **Arizona State University** **1083**
Geological studies in planetology

Period	Obligations	
12/01/77-02/29/80	FY79: $247,477	TOTAL: $320,312
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7429 **Arizona State University** **1084**
Analysis of lunar mare emplacement and impact cratering experiments

Period	Obligations	
02/01/78-02/29/80	FY79: $35,022	TOTAL: $68,354
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	HQ-SL/Quaide, W. L. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7548 **Arizona State University** **1085**
Studies in Martian geology

Period	Obligations	
03/01/79-09/30/79	FY79: $79,210	TOTAL: $79,210
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greeley, R.	HQ-SL/Dwornik, S. E.	31-Atmos Sci

NSG 7630 **Arizona State University** **1086**
The effects of topography, albedo and thermal inertia variations on the generation of mesoscale Martian wind patterns

Period	Obligations	
07/01/79-09/30/79	FY79: $21,690	TOTAL: $21,690
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rankin, R. L.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7642 **Arizona State University** **1087**
Development of Martian terraced-ejecta deposits

Period	Obligations	
10/01/79-09/30/80	FY79: $29,556	TOTAL: $29,556
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sheridan, M.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 9068 **Arizona State University** **1088**
High resolution transmission electron microscopy of lunar pyroxenes

Period	Obligations	
04/01/78-10/31/79	FY79: $15,000	TOTAL: $40,719
Prin Invest	*NASA Tech Officer*	*CASE Category*
Buseck, P. R.	JSC/Harris, J. W.	32-Geological Sci

NSG 737 **Navajo Community College** **1089**
To provide engineering services to implement software, on Navajo Community College PDP11-70 computer

Period	Obligations	
08/21/79-10/20/79	FY79: $9,970	TOTAL: $9,970
Prin Invest	*NASA Tech Officer*	*CASE Category*
Isher, S. F.	NSTL/Whitley, S. L.	49-Engr, NEC

NAS 1-14332 **University of Arizona** **1090**
Stratospheric aerosol measurement experiment

Period	Obligations	
03/19/76-09/30/79	FY79: $58,000	TOTAL: $120,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herman, B. M.	LARC/McCormick, M. P. LARC/McMaster, L. R.	31-Atmos Sci

NASA'S UNIVERSITY PROGRAM
ARIZONA (Continued)

NAS 1-14928 **University of Arizona** **1091**
Stratospheric aerosol and gas experiment

Period	Obligations	
07/21/77-09/30/79	FY79: $25,000	TOTAL: $60,000

Prin Invest	NASA Tech Officer	CASE Category
Herman, B. M.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NAS 2-6765 **University of Arizona** **1092**
Imaging photopolarimeter experiment data analysis Pioneer 10 and 11

Period	Obligations	
11/01/70-01/31/80	FY79: $388,000	TOTAL: $1,983,069

Prin Invest	NASA Tech Officer	CASE Category
Gehrels, A. M.	ARC/Hall, C. F.	11-Astronomy
Tomasko, M. G.	ARC/Porter, D. L.	
Doose, L. R.		

NAS 2-9486 **University of Arizona** **1093**
Pioneer/Venus data analysis of the solar flux radiometer experiment

Period	Obligations	
05/27/77-12/31/79	FY79: $159,490	TOTAL: $301,549

Prin Invest	NASA Tech Officer	CASE Category
Tomasko, M. G.	ARC/Hall, C. F.	11-Astronomy
Doose, L. R.	ARC/Porter, D. L.	
Hunten, D. M.		

NAS 2-9487 **University of Arizona** **1094**
Pioneer/Venus data analysis

Period	Obligations	
01/06/78-09/30/80	FY79: $79,570	TOTAL: $111,365

Prin Invest	NASA Tech Officer	CASE Category
Barnes, C. H., Jr.	ARC/Hall, C. F.	31-Atmos Sci
	ARC/Porter, D. L.	

NAS 2-10089 **University of Arizona** **1095**
Update Pioneer Image Conversion System (PICS)

Period	Obligations	
11/13/78-11/30/79	FY79: $46,552	TOTAL: $46,552

Prin Invest	NASA Tech Officer	CASE Category
Baker, L. R.	ARC/Hall, C. F.	22-Computer Science
	ARC/Hogan, R. P.	

NAS 2-10227 **University of Arizona** **1096**
5 micron detector assemblies study for shuttle infrafed telescope facility

Period	Obligations	
04/01/79-09/30/79	FY79: $15,000	TOTAL: $15,000

Prin Invest	NASA Tech Officer	CASE Category
Rieke, G. H.	ARC/McCreight, C. R.	11-Astronomy

NAS 5-24308 **University of Arizona** **1097**
Study of suitability of Starlab for solar system studies

Period	Obligations	
09/27/77-06/30/80	FY79: $1,408	TOTAL: $17,585

Prin Invest	NASA Tech Officer	CASE Category
Smith, B. A.	GSFC/Wainscott, F. H.	11-Astronomy

NAS 5-25484 **University of Arizona** **1098**
Support to the space telescope wide field planetary camera development team

Period	Obligations	
02/01/79-10/31/79	FY79: $32,964	TOTAL: $32,964

Prin Invest	NASA Tech Officer	CASE Category
Smith, B. A.	GSFC/Sours, W. T.	31-Atmos Sci

NAS 5-25733 **University of Arizona** **1099**
Space telescope/High Resolution Spectrograph (HRS) extragalactic studies

Period	Obligations	
06/18/79-03/31/81	FY79: $3,000	TOTAL: $3,000

Prin Invest	NASA Tech Officer	CASE Category
Weymann, R. J.	GSFC/Liberatore, F. J.	11-Astronomy

NAS 8-31192 **University of Arizona** **1100**
Maintenance and operation of the 60' NASA telescope at Mt Lemmon

Period	Obligations	
10/01/74-12/31/79	FY79: $95,655	TOTAL: $374,207

Prin Invest	NASA Tech Officer	CASE Category
Benton, E. V.	MSFC/Parnell, T. A.	11-Astronomy
	MSFC/Bass, B. G.	

NAS 8-31948 **University of Arizona** **1101**
Automated analytical electrophoresis apparatus

Period	Obligations	
05/17/76-01/10/80	FY79: $64,685	TOTAL: $299,305

Prin Invest	NASA Tech Officer	CASE Category
Bartels, P. H.	MSFC/Snyder, R. S.	59-Life Sci, NEC

NAS 8-32950 **University of Arizona** **1102**
Hormone purification by isoelectric focusing in space

Period	Obligations	
03/29/78-03/29/80	FY79: $62,800	TOTAL: $137,800

Prin Invest	NASA Tech Officer	CASE Category
Bier, M.	MSFC/Williams, J. R.	59-Life Sci, NEC
Barstow, L. E.	MSFC/Snyder, R. S.	
Jewett, W. R.		

NAS 8-33351 **University of Arizona** **1103**
Low spectral resolution optical survey of the HEAO-B high resolution imager fields

Period	Obligations	
05/23/79-05/22/80	FY79: $21,260	TOTAL: $21,260

Prin Invest	NASA Tech Officer	CASE Category
Strittmatter, P. A.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 9-14692 **University of Arizona** **1104**
Automated computerized pattern recognition in cytology

Period	Obligations	
06/01/75-12/31/77	FY79:	TOTAL: $50,439

Prin Invest	NASA Tech Officer	CASE Category
Bartels, P. H.	JSC/Kimzey, S. L.	59-Life Sci, NEC

ARIZONA (Continued)

NASW 3262 **University of Arizona** **1105**
Colloquium and book on asteroids and planets

Period	Obligations	
04/23/79-03/30/80	FY79: $14,700	TOTAL: $14,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-SL/Brunk, W. E.	11-Astronomy

NAS10-8518 **University of Arizona** **1106**
Thunderstorm electrical field changes and associated meteorological conditions at KSC

Period	Obligations	
02/12/74-02/29/80	FY79: $20,000	TOTAL: $161,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Krider, E. P.	KSC/Jafferis, W.	31-Atmos Sci

NCA 5-76 **University of Arizona** **1107**
Observation of comets and atmospheric extinction

Period	Obligations	
04/12/77-03/01/78	FY79:	TOTAL: $6,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martineck, S.	GSFC/Dunkelman, L.	31-Atmos Sci

NCA 5-93 **University of Arizona** **1108**
Spectroscopic observations of comets

Period	Obligations	
09/06/78-07/01/79	FY79:	TOTAL: $3,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martineck, S.	GSFC/Donn, B.	31-Atmos Sci

NCA 5-94 **University of Arizona** **1109**
Infrared absorption studies of clothrates and hydrate ices

Period	Obligations	
01/23/79-03/31/80	FY79: $14,800	TOTAL: $14,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fink, U. W.	GSFC/Pearl, J. C.	13-Physics

NGL 03-002-002 **University of Arizona** **1110**
Planetary, spectroscopic, selenodetic & physical studies of lunar surface

Period	Obligations	
08/12/61-05/31/81	FY79: $47,978	TOTAL: $2,789,250
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, B. A.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGL 03-002-019 **University of Arizona** **1111**
High resolution electron microscopic techniques to study biological material

Period	Obligations	
06/07/63-08/31/79	FY79:	TOTAL: $471,055
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoenig, S. A.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 03-002-081 **University of Arizona** **1112**
Photometry and polarimetry of minor planets

Period	Obligations	
03/14/66-09/30/79	FY79: $39,989	TOTAL: $469,225
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gehrels, A.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGL 03-002-122 **University of Arizona** **1113**
Astrometric and astrophysical investigation of comets, minor planets, and satellites

Period	Obligations	
02/22/67-04/30/79	FY79:	TOTAL: $214,295
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cox, E. L.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Fellows, R. F.	

NGL 03-002-191 **University of Arizona** **1114**
Lunar surface and planetology study

Period	Obligations	
05/16/69-09/30/79	FY79:	TOTAL: $568,770
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strom, R. G.	HQ-SL/Bohlin, J. M.	32-Geological Sci
	HQ-SL/Flinn, E. A.	

NGL 03-002-313 **University of Arizona** **1115**
Remote sensing applications for state & local government

Period	Obligations	
03/07/72-02/28/82	FY79: $150,000	TOTAL: $850,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, J. D.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 03-002-107 **University of Arizona** **1116**
Basic research in astrophysics and space science

Period	Obligations	
09/01/67-08/31/79	FY79:	TOTAL: $638,063
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hsieh, K. C.	HQ-ST/Kaiser, M. L.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGR 03-002-171 **University of Arizona** **1117**
Analysis of carbonaceous meteorites

Period	Obligations	
10/26/68-09/30/80	FY79: $45,000	TOTAL: $572,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagy, B.	HQ-SB/Young, R. S.	32-Geological Sci
Urey, H. C.		
Nagy, L. A.		

NGR 03-002-219 **University of Arizona** **1118**
Photopolarimetry of Mercury, Mars and satellites

Period	Obligations	
02/13/70-10/31/79	FY79: $34,993	TOTAL: $349,415
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Gehrels, A. M.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 03-002-269 **University of Arizona** **1119**
Operation of a 30 cm flying infrared telescope

Period	Obligations	
05/04/71-05/31/80	FY79: $70,660	TOTAL: $568,336
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Low, F. J.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 03-002-332 **University of Arizona** **1120**
Infrared spectroscopy of the planets from 1-5.6 micron with the medium-resolution LPL Fourier interferometer

Period	Obligations	
03/05/73-10/31/79	FY79: $105,918	TOTAL: $520,357
Prin Invest	*NASA Tech Officer*	*CASE Category*
Larson, H. P.	ARC/Haughney, L. C.	11-Astronomy

NGR 03-002-370 **University of Arizona** **1121**
An investigation of electromagnetic processes in the early solar system with bearing on thermal evolution and fossil magnetism

Period	Obligations	
10/01/73-12/31/79	FY79: $40,829	TOTAL: $233,959
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sonett, C. P.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/French, B. M.	

NGR 03-002-371 **University of Arizona** **1122**
Far infrared observations of galactic and extra-galactic sources of radiation

Period	Obligations	
09/01/73-11/30/79	FY79: $90,000	TOTAL: $360,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffman, W. F.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 03-002-388 **University of Arizona** **1123**
Lunar sample analysis

Period	Obligations	
02/01/74-09/30/79	FY79: $21,000	TOTAL: $281,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Drake, M. J.	JSC/Harris, J. W.	12-Chemistry

NGR 03-002-390 **University of Arizona** **1124**
Mapping structure of galactic center

Period	Obligations	
10/01/73-10/31/79	FY79: $70,000	TOTAL: $276,733
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Harvey, P. M.	ARC/Haughney, L. C.	11-Astronomy
Hoffman, W. F.		

NSG 2112 **University of Arizona** **1125**
Inviscid transonic flow computations

Period	Obligations	
11/01/75-10/31/80	FY79: $61,206	TOTAL: $221,991
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seebass, A. R.	ARC/Ballhaus, W. F.	41-Aero Engr
Fung, K. Y.		
Sobieczky, H.		

NSG 2205 **University of Arizona** **1126**
Construction of a radial velocity meter for determining percentage of binaries among solar-type stars

Period	Obligations	
01/01/77-01/31/80	FY79: $30,000	TOTAL: $45,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Serkowski, K. M.	ARC/Black, D. C.	11-Astronomy

NSG 2349 **University of Arizona** **1127**
Laboratory studies relevant to the Titan atmosphere

Period	Obligations	
11/01/78-08/31/80	FY79: $24,990	TOTAL: $24,990
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fink, U. W.	ARC/Murphy, J. P.	31-Atmos Sci
Hunten, D. M.		

NSG 2381 **University of Arizona** **1128**
Cytofluorometric analysis of viral infection

Period	Obligations	
05/01/79-04/30/80	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meinke, W. J.	ARC/Mandel, A. D.	56-Medical Sciences

NSG 5023 **University of Arizona** **1129**
Lightning detection study

Period	Obligations	
09/01/74-03/31/80	FY79:	TOTAL: $51,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Krider, E. P.	GSFC/LeVine, D. M.	31-Atmos Sci

NSG 5235 **University of Arizona** **1130**
Research of the ultraviolet spectra of T Tauri and related stars

Period	Obligations	
02/19/78-04/08/80	FY79: $4,066	TOTAL: $6,298
Prin Invest	*NASA Tech Officer*	*CASE Category*
Imhoff, C. L.	GSFC/Boggess, A.	11-Astronomy

NSG 5249 **University of Arizona** **1131**
Spectrophotometry of planets, satellites and asteroids

Period	Obligations	
03/01/78-12/31/79	FY79: $7,000	TOTAL: $22,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tomasko, M. G.	GSFC/Boggess, A.	11-Astronomy
Zellner, B. H.	GSFC/West, D. K.	
Gehrels, A M.		

NSG 5279 **University of Arizona** **1132**
Measurement and forecasting of soil moisture by remote means

Period	Obligations	
07/01/78-01/31/79	FY79:	TOTAL: $6,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Evans, D. D.	GSFC/Schmugge, T. J.	31-Atmos Sci

ARIZONA (Continued)

NSG 5302 **University of Arizona** **1133**
Laser application of incoherent radiation

Period	Obligations	
09/15/78-09/14/79	FY79:	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lamb, W. E., Jr.	GSFC/McAvoy, N.	13-Physics

NSG 7011 **University of Arizona** **1134**
Radiation history of meteorites

Period	Obligations	
03/01/74-02/28/80	FY79: $40,000	TOTAL: $213,816
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilkening, L. L.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NSG 7020 **University of Arizona** **1135**
Investigation of lunar induced and permanent magnetism in the lunar data analysis and synthesis program

Period	Obligations	
03/01/74-01/31/80	FY79: $100,000	TOTAL: $603,316
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sonett, C. P.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. F.	

NSG 7024 **University of Arizona** **1136**
Study of the earth's magnetosphere and solar wind

Period	Obligations	
02/01/74-04/30/80	FY79: $108,100	TOTAL: $338,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sonett, C. P.	HQ-ST/Hedin, A. E.	13-Physics
	HQ-ST/Schmerling, E. R.	

NSG 7045 **University of Arizona** **1137**
Interiors of the giant planets

Period	Obligations	
05/22/74-03/31/80	FY79: $33,000	TOTAL: $198,894
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hubbard, W. B.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7070 **University of Arizona** **1138**
Planetary spectroscopy

Period	Obligations	
06/01/74-05/31/81	FY79: $57,799	TOTAL: $553,748
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fink, U. W.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7101 **University of Arizona** **1139**
Study structure of astrophysical plasma and turbulent fluctuations

Period	Obligations	
11/18/74-08/31/79	FY79: $55,326	TOTAL: $223,192
Prin. Invest	*NASA Tech Officer*	*CASE Category*
'okipii, J. R.	HQ-SC/Opp, A. G.	11-Astronomy
	HQ-SC/Fishman, G. K.	

NSG 7114 **University of Arizona** **1140**
Infrared observations of the planets

Period	Obligations	
02/20/75-05/31/80	FY79: $24,934	TOTAL: $95,676
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rieke, G. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7146 **University of Arizona** **1141**
Geologic investigation of Mercury from Mariner 10 television data

Period	Obligations	
07/01/75-01/31/81	FY79: $94,751	TOTAL: $260,088
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strom, R. G.	HQ-SL/Boyce, J. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NSG 7168 **University of Arizona** **1142**
Studies in the production of astrophysical magnetic field

Period	Obligations	
09/01/75-01/01/79	FY79: $192	TOTAL: $45,192
Prin Invest	*NASA Tech Officer*	*CASE Category*
Levy, E. H.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7246 **University of Arizona** **1143**
Carbonaceous fragments

Period	Obligations	
07/01/76-06/30/78	FY79:	TOTAL: $36,720
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gehrels, A. M.	HQ-SL/French, B. M.	32-Geological Sci
Degewij, J.	HQ-SL/Quaide, W. L.	

NSG 7249 **University of Arizona** **1144**
High precision polarimetry of meteorites

Period	Obligations	
07/01/76-02/29/80	FY79: $29,309	TOTAL: $117,268
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zellner, B. H.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NSG 7333 **University of Arizona** **1145**
Study of isoelectric focusing for proteins and peptide hormones in a microgravity environment

Period	Obligations	
04/01/79-03/31/82	FY79: $200,000	TOTAL: $725,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bier, M.	HQ-ET/Vitale, J. A.	59-Life Sci, NEC

NSG 7358 **University of Arizona** **1146**
International meeting and book on 'Protostars and planets'

Period	Obligations	
11/01/77-10/31/78	FY79:	TOTAL: $8,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gehrels, A. M.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SS/Rasool, I. S.	

NSG 7368 **University of Arizona** **1147**
A deep near infrared photographic sky survey as a support tool for the infrared astronomical satellite

Period	*Obligations*	
06/15/77-06/14/80	FY79: $33,661	TOTAL: $67,742
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Craine, E. R.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7374 **University of Arizona** **1148**
Evaluation of a field-ionization neutral mass spectrometer for possible comet fly-by missions in 1980's

Period	*Obligations*	
08/01/77-12/01/79	FY79:	TOTAL: $35,006
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hsieh, K. C.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	11-Astronomy

NSG 7419 **University of Arizona** **1149**
Generation and behavior of solar system magnetic fields

Period	*Obligations*	
03/01/79-02/29/80	FY79: $34,673	TOTAL: $66,138
Prin Invest	*NASA Tech Officer*	*CASE Category*
Levy, E. H.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7436 **University of Arizona** **1150**
Rare earths in inclusions from different classes of carbonaceous chondrites

Period	*Obligations*	
03/01/78-02/28/79	FY79:	TOTAL: $38,333
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boynton, W. V.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7485 **University of Arizona** **1151**
Stratospheric aeronomy

Period	*Obligations*	
09/01/78-08/31/80	FY79: $112,272	TOTAL: $112,272
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hunten, D. M.	HQ-ST/Newton, G. P. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7502 **University of Arizona** **1152**
Asteroid population statistics

Period	*Obligations*	
09/01/78-08/31/80	FY79: $24,870	TOTAL: $24,870
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zellner, B. H.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NSG 7544 **University of Arizona** **1153**
Martian landforms response to geologic setting

Period	*Obligations*	
04/01/79-11/30/79	FY79: $19,999	TOTAL: $19,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Woronow, A.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7558 **University of Arizona** **1154**
Planetary aeronomy and related studies

Period	*Obligations*	
04/01/79-03/30/80	FY79: $24,275	TOTAL: $24,275
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hunten, D. M.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7573 **University of Arizona** **1155**
Scattering of light by amonia crystals

Period	*Obligations*	
09/01/78-04/30/80	FY79: $48,649	TOTAL: $48,649
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tomasko, M. G.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7574 **University of Arizona** **1156**
Optical photometry and polarimetry and confirmed counterparts for X-ray binary pulsars

Period	*Obligations*	
05/01/79-04/30/80	FY79: $19,432	TOTAL: $19,432
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tapia, S. F.	HQ-SC/Weiler, E. J. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7576 **University of Arizona** **1157**
Geochemical evolution of the moon and igneous meteorites

Period	*Obligations*	
05/01/79-01/30/80	FY79: $62,967	TOTAL: $62,967
Prin Invest	*NASA Tech Officer*	*CASE Category*
Drake, M. J.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M	32-Geological Sci

NSG 7577 **University of Arizona** **1158**
Terrestrial analog studies of relationships

Period	*Obligations*	
03/01/79-09/30/79	FY79: $30,055	TOTAL: $30,055
Prin Invest	*NASA Tech Officer*	*CASE Category*
Drake, M. J.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7607 **University of Arizona** **1159**
Laboratory infrared reflectance studies

Period	*Obligations*	
05/01/79-04/30/80	FY79: $19,363	TOTAL: $19,363
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lebofsky, L.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7634 **University of Arizona** **1160**
Studies of planetary extended atmospheres

Period	*Obligations*	
10/01/79-09/30/80	FY79: $63,330	TOTAL: $63,330
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brown, R. A.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

ARKANSAS

NSG 3249 **Arkansas State University** **1161**
Vaporization thermodynamics of potassium sulfide and potassium sulfite

Period 03/15/79-12/30/79 *Obligations* FY79: $34,140 TOTAL: $34,140
Prin Invest Bennett, J. E.
NASA Tech Officer LERC/Burkhart, J. A.; LERC/Seikel, G. R.
CASE Category 12-Chemistry

NAS 8-31550 **University of Arkansas - Fayetteville** **1162**
Statistical analyses of multivariate atmospheric variables

Period 10/31/75-03/31/79 *Obligations* FY79: TOTAL: $32,485
Prin Invest Tubbs, J. D.
NASA Tech Officer MSFC/Falls, L. W.; MSFC/Smith, O. E.
CASE Category 31-Atmos Sci

NAS 8-33224 **University of Arkansas - Fayetteville** **1163**
Space shuttle environmental analysis: Statistical models

Period 05/07/79-05/06/80 *Obligations* FY79: $17,878 TOTAL: $17,878
Prin Invest Tubbs, J. D.; Brewer, D. W.
NASA Tech Officer MSFC/Smith, O. E.
CASE Category 31-Atmos Sci

NAS 9-14251 **University of Arkansas - Fayetteville** **1164**
Remote sensing of soil moisture content

Period 06/01/74-11/30/79 *Obligations* FY79: TOTAL: $204,233
Prin Invest Waite, W. P.
NASA Tech Officer JSC/Demel, K. J.; JSC/Baldwin, R. R.
CASE Category 19-Phys Sci, NEC

NGL 04-001-007 **University of Arkansas - Fayetteville** **1165**
Application of lasers to instrumentation & measurement techniques

Period 06/15/70-04/30/80 *Obligations* FY79: $21,999 TOTAL: $424,381
Prin Invest Broecker, W. S.; Flynn, G. W.
NASA Tech Officer ARC/Ragent, B.; ARC/Horstman, M.
CASE Category 41-Aero Engr

NSG 7106 **University of Arkansas - Fayetteville** **1166**
Scalable standard optical sources in VUV: Emission from electron impact on metals

Period 02/15/75-10/31/79 *Obligations* FY79: $2,000 TOTAL: $69,000
Prin Invest Hughes, R. H.
NASA Tech Officer HQ-SC/Roman, N. G.
CASE Category 11-Astronomy

CALIFORNIA

NAS 1-9703 **California Institute of Technology** **1167**
Participation in seismology planning for the Viking 1975 missions

Period 04/08/70-01/31/79 *Obligations* FY79: TOTAL: $1,109,000
Prin Invest Anderson, D. L.
NASA Tech Officer LARC/Williams, T. S., Jr.; LARC/Glenny, W. R.
CASE Category 39-Env Sci, NEC

NAS 1-15668 **California Institute of Technology** **1168**
Aerodynamics of the Wright 1903 flyer

Period 01/18/79-10/31/79 *Obligations* FY79: $11,930 TOTAL: $11,930
Prin Invest Culick, F. E.
NASA Tech Officer LARC/Houbolt, J. C.
CASE Category 41-Aero Engr

NAS 2-6556 **California Institute of Technology** **1169**
Pioneer 10 and 11 data analysis of the Jovian infrared thermal structures experiment

Period 09/17/71-09/30/80 *Obligations* FY79: $40,600 TOTAL: $249,549
Prin Invest Ingersoll, A. P.
NASA Tech Officer ARC/Hall, C. F.; ARC/Porter, D. L.
CASE Category 11-Astronomy

NAS 5-11066 **California Institute of Technology** **1170**
IMP-H&J electron isotope spectrometer experiment

Period 01/12/68-02/29/80 *Obligations* FY79: $155,047 TOTAL: $2,137,391
Prin Invest Stone, E. C.
NASA Tech Officer GSFC/Gemmell, J. D.
CASE Category 13-Physics

NAS 5-20721 **California Institute of Technology** **1171**
High energy cosmic rays experiment for International Sun Earth Explorer spacecraft

Period 02/07/75-08/12/80 *Obligations* FY79: $162,000 TOTAL: $1,706,000
Prin Invest Stone, E. C.
NASA Tech Officer GSFC/Davis, M. A.; GSFC/Gallagher, W. F.
CASE Category 13-Physics

NAS 5-22939 **California Institute of Technology** **1172**
Helioscope camera definition study

Period 03/10/76-06/01/80 *Obligations* FY79: TOTAL: $39,627
Prin Invest Zirin, H.; Prout, R. A.
NASA Tech Officer GSFC/Neupert, W. M.
CASE Category 11-Astronomy

NAS 5-22965 **California Institute of Technology** **1173**
Nimbus G earth radiation budget sensor support

Period	Obligations	
01/27/76-10/01/80	FY79: $51,427	TOTAL: $117,591
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ingersoll, A. P.	GSFC/Nelsen, E. D.	31-Atmos Sci

NAS 5-23315 **California Institute of Technology** **1174**
Cosmic X-ray experiment for HEAO-2

Period	Obligations	
11/15/73-05/31/79	FY79:	TOTAL: $873,218
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	GSFC/Wende, C. D.	11-Astronomy

NAS 5-24339 **California Institute of Technology** **1175**
Xe-filled proportional counter and study on use with hard X-ray imaging instrument

Period	Obligations	
09/28/77-08/31/79	FY79	TOTAL: $54,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	GSFC/Stouffer, C. G.	13-Physics

NAS 5-25049 **California Institute of Technology** **1176**
HEAO A-2 cosmic X-ray experiment mission support and data analysis support

Period	Obligations	
08/13/78-03/31/82	FY79: $233,554	TOTAL: $294,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	GSFC/Wende, C. D.	13-Physics

NAS 5-25451 **California Institute of Technology** **1177**
Wide field/planetary camera for space telescope

Period	Obligations	
01/01/79-02/01/84	FY79: $523,915	TOTAL: $523,915
Prin Invest	*NASA Tech Officer*	*CASE Category*
Westphal, J.	GSFC/White, R. A.	11-Astronomy

NAS 8-27978 **California Institute of Technology** **1178**
Design, development & operation of the ACR-7 heavy nuclei experiment under the HEAO prog am

Period	Obligations	
06/23/72-09/30/80	FY79: $169,000	TOTAL: $528,060
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stone, E. C.	MSFC/Talley, D.	11-Astronomy
	MSFC/Cochran, J.	

NAS 8-29313 **California Institute of Technology** **1179**
Dynamics of unsteady cavitating cascades

Period	Obligations	
09/28/72-10/15/79	FY79: $41,589	TOTAL: $470,459
Prin Invest	*NASA Tech Officer*	*CASE Category*
Acosta, A. J.	MSFC/Gross, L. A.	46-Mech Engr
	MSFC/Stinson, H. P., Jr.	

NAS 8-33108 **California Institute of Technology** **1180**
Research in turbomachine rotor forces

Period	Obligations	
10/23/78-11/22/79	FY79: $35,152	TOTAL: $35,152
Prin Invest	*NASA Tech Officer*	*CASE Category*
Costa, A. J.	MSFC/Gross, L. A.	46-Mech Engr
Brennen, C.	MSFC/Goetz, O. K.	

NAS 8-33215 **California Institute of Technology** **1181**
ATM guest investigator program empirical studies of solar flares: Comparison of X-ray and h-alpha filtrations and analysis of the energy balance of the thermal X-ray plasma

Period	Obligations	
11/17/78-11/16/79	FY79: $33,000	TOTAL: $33,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moore, R. L.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C.	

NAS 8-33331 **California Institute of Technology** **1182**
Study of Supernova remnant RCW 103 and a search for X-ray emission from dwarf novae

Period	Obligations	
02/05/79-02/04/80	FY79: $10,996	TOTAL: $10,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	MSFC/Jones, J. B., Jr.	11-Astronomy
Tuohy, I. R.		

NAS 8-33352 **California Institute of Technology** **1183**
A SSS observation of the Supernova remnant RCW 103

Period	Obligations	
05/30/79-05/29/80	FY79: $2,720	TOTAL: $2,720
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	MSFC/Jones, J. B., Jr.	11-Astronomy
Tuohy, I. R.		

NCC 5 17 **California Institute of Technology** **1184**
Theoretical investigation of the mechanics of strike slip faulting in unelastic earth

Period	Obligations	
06/01/79-05/31/80	FY79: $40,000	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Melosh, H. J.	GSFC/Cohen, S. C.	32-Geological Sci

NGL 05-002-003 **California Institute of Technology** **1185**
Basic scientific research on lunar & planetary exploration

Period	Obligations	
12/01/59-11/30/80	FY79: $154,091	TOTAL: $3,192,858
Prin Invest	*NASA Tech Officer*	*CASE Category*
Muhleman, D. O.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGL 05-002-034 **California Institute of Technology** **1186**
Research in solar flares and the solar atmosphere

Period	Obligations	
05/18/65-09/30/79	FY79: $244,000	TOTAL: $2,831,353
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zirin, H.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGL 05-002-069 **California Institute of Technology** **1187**
Theoretical investigation of planetary interiors
Period 06/12/67-02/28/80 *Obligations* FY79: TOTAL: $553,729
Prin Invest Anderson, D. L. *NASA Tech Officer* HQ-SL/Quaide, W. L. *CASE Category* 32-Geological Sci

NGL 05-002-105 **California Institute of Technology** **1188**
Shock effects in minerals
Period 08/16/68-03/31/81 *Obligations* FY79: $217,084 TOTAL: $1,104,488
Prin Invest Ahrens, T. J. *NASA Tech Officer* HQ-SL/Quaide, W. L. 32-Geological Sci; HQ-SL/French, B. E.

NGL 05-002-134 **California Institute of Technology** **1189**
Modern astronomical instrument development
Period 10/27/69-09/30/81 *Obligations* FY79: $61,110 TOTAL: $722,662
Prin Invest Oke, J. B. *NASA Tech Officer* HQ-SC/Roman, N. G. *CASE Category* 11-Astronomy; HQ-SC/Rosendhal, J. D.

NGL 05-002-140 **California Institute of Technology** **1190**
Research in planetary astronomy
Period 04/11/69-03/31/81 *Obligations* FY79: $31,805 TOTAL: $512,710
Prin Invest. Goldreich, P. *NASA Tech Officer* HQ-SL/Brunk, W. E. *CASE Category* 11-Astronomy; HQ-SL/Murphy, R. E.

NGL 05-002-188 **California Institute of Technology** **1191**
Lunar sample analysis
Period 02/03/71-01/31/81 *Obligations* FY79: $342,115 TOTAL: $4,961,702
Prin Invest Wasserburg, G. J. *NASA Tech Officer* JSC/Harris, J. W. *CASE Category* 12-Chemistry

NGL 05-002-190 **California Institute of Technology** **1192**
Lunar sample analysis
Period 0[illegible]/71-01/31/80 *Obligations* FY79: $58,540 TOTAL: $892,645
Prin Invest Epstein, S. *NASA Tech Officer* JSC/Harris, J. W. *CASE Category* 13-Physics

NGL 05-002-207 **California Institute of Technology** **1193**
Research in infrared and X-ray astronomy
Period 02/18/71-09/30/81 *Obligations* FY79: $110,000 TOTAL: $905,000
Prin Invest Neugebauer, G. *NASA Tech Officer* HQ-SC/Boggess, N. W. *CASE Category* 11-Astronomy; HQ-SC/Roman, N. G.

NGL 05-002-338 **California Institute of Technology** **1194**
Petrologic and microprobe investigations on isotopically dated lunar samples
Period 02/01/74-01/31/81 *Obligations* FY79: $46,571 TOTAL: $525,930
Prin Invest Albee, A. L. *NASA Tech Officer* JSC/Harris, J. W. *CASE Category* 13-Physics

NGR 05-002-114 **California Institute of Technology** **1195**
Radio interferometry of Mars and Venus
Period 10/11/68-09/30/79 *Obligations* FY79: $52,452 TOTAL: $424,848
Prin Invest Muhleman, D. O. *NASA Tech Officer* HQ-SL/Brunk, W. E. *CASE Category* 11-Astronomy; HQ-SL/Murphy, R. E.

NGR 05-002-121 **California Institute of Technology** **1196**
A study of water metabolism in Neurospora Crassaa
Period 01/01/69-03/31/79 *Obligations* FY79: TOTAL: $439,119
Prin Invest Horowitz, N. H. *NASA Tech Officer* HQ-SB/Young, R. S. *CASE Category* 51-Biological Sci

NGR 05-002-160 **California Institute of Technology** **1197**
Research in particles and fields
Period 10/27/69-09/30/80 *Obligations* FY79: $390,000 TOTAL: $3,026,000
Prin Invest Vogt, R. E. *NASA Tech Officer* HQ-SC/Kaluzienski, L. J. *CASE Category* 11-Astronomy; HQ-SC/Opp, A. G.

NGR 05-002-256 **California Institute of Technology** **1198**
Study and research on experimental tests of gravitation theory
Period 02/23/72-12/31/79 *Obligations* FY79: $25,000 TOTAL: $188,000
Prin Invest Thorne, K. S. *NASA Tech Officer* HQ-SC/Roman, N. G. *CASE Category* 11-Astronomy; HQ-SC/Weiler, E. J.

NGR 05-002-281 **California Institute of Technology** **1199**
High angular resolution of H II regions and associated galactic sources
Period 03/01/73-10/31/80 *Obligations* FY79: $60,574 TOTAL: $359,602
Prin Invest Werner, M. W. *NASA Tech Officer* ARC/Haughney, L. C. *CASE Category* 11-Astronomy

NGR 05-002-284 **California Institute of Technology** **1200**
High angular resolution cosmic X-ray astronomy observations in the energy band 0.15-2Ke and XUV observations of early stars from an attitude controlled rocket
Period 03/05/73-09/30/80 *Obligations* FY79: $150,936 TOTAL: $1,020,232
Prin Invest Garmire, G. P.; Nousek, J.; Pravdo, S. *NASA Tech Officer* GSFC/Bissell, E. E.; HQ-SC/Opp, A. G. *CASE Category* 11-Astronomy

NGR 05-002-303 **California Institute of Technology** **1201**
Systematic search program for new Apollo Amor asteroids

Period	*Obligations*	
08/01/73-09/30/80	FY79: $112,177	TOTAL: $453,463
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shoemaker, E. M.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 05-002-333 **California Institute of Technology** **1202**
Lunar sample analysis

Period	*Obligations*	
02/01/74-01/31/80	FY79: $93,000	TOTAL: $552,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tombrello, T. A.	JSC/Harris, J. W.	13-Physics

NGT 05-003-790 **California Institute of Technology** **1203**
Summer research program faculty fellowships

Period	*Obligations*	
01/01/79-03/31/80	FY79: $73,688	TOTAL: $73,688
Prin Invest	*NASA Tech Officer*	*CASE Category*
Albee, A. L.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1483 **California Institute of Technology** **1204**
Low speed impact damage on composite materials

Period	*Obligations*	
01/15/78-01/15/80	FY79: $39,920	TOTAL: $74,886
Prin Invest	*NASA Tech Officer*	*CASE Category*
Knauss, W. G.	LARC/Starns, J. H., Jr.	41-Aero Engr
Babcock, C. D.		

NSG 2283 **California Institute of Technology** **1205**
Some aspects of the photochemistry of the atmospheres of Mars and Earth

Period	*Obligations*	
12/01/77-12/31/79	FY79: $8,271	TOTAL: $24,765
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yung, Y. L.	ARC/Pollack, J. B.	31-Atmos Sci

NSG 5197 **California Institute of Technology** **1206**
Search for periodic variations in the X-ray flux from the galactic center

Period	*Obligations*	
08/01/77-07/31/78	FY79:	TOTAL: $10,109
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garmire, G. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5208 **California Institute of Technology** **1207**
Support of joint infrared and Copernicus X-ray observations

Period	*Obligations*	
09/01/77-08/31/79	FY79:	TOTAL: $5,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Neugebauer, G.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5224 **California Institute of Technology** **1208**
Earthquake research: Premonitory models and the physics of crustal distortion

Period	*Obligations*	
01/16/78-01/15/80	FY79: $65,339	TOTAL: $190,340
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whitcomb, J. H.	GSFC/Allenby, R. J.	32-Geological Sci
Allen, C. R.		
Anderson, D. L.		

NSG 5243 **California Institute of Technology** **1209**
Observations of faint, high latitude blue stars and ultraviolet spectroscopy of peculiar galaxies and quasars

Period	*Obligations*	
03/01/78-11/30/79	FY79: $5,000	TOTAL: $37,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greenstein, J. L.	GSFC/Boggess, A.	11-Astronomy
Oke, J. B.	GSFC/West, D. K	

NSG 5244 **California Institute of Technology** **1210**
Ultraviolet observations of quasi-stellar objects

Period	*Obligations*	
03/01/78-11/30/79	FY79: $4,000	TOTAL: $22,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmidt, M.	GSFC/Boggess, A.	11-Astronomy
Green, F. R.		
Estabrook, F. B.		

NSG 5267 **California Institute of Technology** **1211**
Theoretical investigation of the mechanics of strike slip faulting in the unelastic program

Period	*Obligations*	
04/01/78-05/31/79	FY79:	TOTAL: $13,440
Prin Invest	*NASA Tech Officer*	*CASE Category*
Melosh, H. J.	GSFC/Allenby, R. J.	32-Geological Sci
	GSFC/Mead, G. D.	

NSG 5301 **California Institute of Technology** **1212**
Research in atmospheric chemistry and transport

Period	*Obligations*	
09/15/78-11/14/79	FY79:	TOTAL: $16,739
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yung, Y. L.	GSFC/Hansen, J. E.	31-Atmos Sci

NSG 5314 **California Institute of Technology** **1213**
Optical observations at the Big Bear Solar Observatory

Period	*Obligations*	
01/01/79-12/31/79	FY79: $51,528	TOTAL: $51,528
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zirin, H.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5327 **California Institute of Technology** **1214**
High resolution comparative observations of microwave and hard X-ray sources

Period	*Obligations*	
02/01/79-01/31/80	FY79: $12,600	TOTAL: $12,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zirin, H.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5369 **California Institute of Technology** **1215**
Research of interstellar lines in the galactic halo

Period	Obligations	
06/01/79-05/31/80	FY79: $13,600	TOTAL: $13,600
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Sargent, W. L.	GSFC/Boggess, A.	11-Astronomy
Gull, T. R.		

NSG 5381 **California Institute of Technology** **1216**
Support of research involving International Ultraviolet Experiment (IUE) satellite

Period	Obligations	
07/01/79-06/30/80	FY79: $7,000	TOTAL: $7,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Greenstein, J. L.	GSFC/Boggess, A.	11-Astronomy

NSG 5384 **California Institute of Technology** **1217**
Ultraviolet observations of young stellar populations

Period	Obligations	
07/01/79-06/30/80	FY79: $2,916	TOTAL: $2,916
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Meier, D. L.	GSFC/Boggess, A.	11-Astronomy
Schmidt, M.		

NSG 5385 **California Institute of Technology** **1218**
Study of the hottest White dwarfs from the Palomer--Green survey

Period	Obligations	
07/01/79-06/30/80	FY79: $9,200	TOTAL: $9,200
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Green, R. F.	GSFC/Boggess, A.	11-Astronomy
Liebert, J.		
Strittmatter, P. A.		

NSG 7129 **California Institute of Technology** **1219**
Relationship of impact cratering to the evolution of the lunar surface

Period	Obligations	
04/01/75-03/31/81	FY79: $110,955	TOTAL: $350,117
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Ahrens, T. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7202 **California Institute of Technology** **1220**
Laboratory partitioning studies relevant to the interpretation of lunar and meteoritic trace element data

Period	Obligations	
02/01/76-01/31/80	FY79: $63,130	TOTAL: $286,593
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Burnett, D. S.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7275 **California Institute of Technology** **1221**
Heteronuclear spin dynamics and new tools for characterization of bulk and surface properties of solids

Period	Obligations	
10/01/76-06/30/79	FY79:	TOTAL: $52,012
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Vaughan, R.	HQ-RT/Schwenk, F. C	13-Physics

NSG 7316 **California Institute of Technology** **1222**
Crater modification by gravity

Period	Obligations	
02/01/77-01/31/80	FY79: $39,960	TOTAL: $112,360
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Melosh, H. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7342 **California Instit of Technology** **1223**
Theoretical studies of solar oscillation

Period	Obligations	
04/01/77-09/30/80	FY79: $14,996	TOTAL: $39,992
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Goldreich, P	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7376 **California Institute of Technology** **1224**
Photochemistry of the Jovian planets and their satellites

Period	Obligations	
11/01/77-10/30/79	FY79: $36,647	TOTAL: $63,647
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Yung, Y. L.	HQ-SL/Mitz, M. A.	31-Atmos Sci
Strobel, D. F.	HQ-SL/Brunk, W. E.	

NSG 7387 **California Institute of Technology** **1225**
Circadian neurons in organ and tissue culture: A feasibility study

Period	Obligations	
08/01/77-01/31/78	FY79:	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Strumwasser, F.	HQ-SB/Winter, D. L.	51-Biological Sci

NSG 7442 **California Institute of Technology** **1226**
Spectral characterization of analogs to the Martian regolith

Period	Obligations	
10/01/77-09/30/79	FY79: $30,083	TOTAL: $54,236
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Albee, A. L.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7458 **California Institute of Technology** **1227**
Space shuttle based compression studies of planetary materials and recovery of very high pressure phases of possible technological usefulness

Period	Obligations	
03/01/78-12/31/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Ahrens, T. J.	HQ-RP/Henry, W.	13-Physics
Gault, D. E.		
Ross, M.		

NSG 7495 **California Institute of Technology** **1228**
Detection of gravitational radiation by the Doppler tracking of spacecraft

Period	Obligations	
10/01/78-09/30/79	FY79: $9,800	TOTAL: $9,800
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Mashhoon, B.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7508 **California Institute of Technology** **1229**
Nonlinear interactions in superfluid dynamics: Non-stationary heat transfer due to second sound shock waves

Period	Obligations	
11/01/78-10/31/79	FY79: $58,146	TOTAL: $58,146
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Liepmann, H. W.	HQ-RT/Schwenk, F. C.	13-Physics

NSG 7565 **California Institute of Technology** **1230**
Analysis of Viking infrared thermal mapping data of Mars orbiter and comet missions

Period	Obligations	
10/11/78-09/30/79	FY79: $140,000	TOTAL: $140,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Muhleman, D. O.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7610 **California Institute of Technology** **1231**
Fundamental studies in geodynamics

Period	Obligations	
08/01/79-07/31/82	FY79: $165,000	TOTAL: $165,000
Prin Invest	*NASA Tech Offic*	*CASE Categor*
Anderson, D. L.	HQ-ET/Vitale, J. A.	32-Geological Sci

NSG 9019 **California Institute of Technology** **1232**
Shock compression measurements on lunar samples

Period	Obligations	
10/01/74-01/31/80	FY79: $24,500	TOTAL: $335,100
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Ahrens, T. J.	JSC/Harris, J. W.	19-Phys Sci, NEC

NCA 2-100901 **California Maritime Academy** **1233**
Study to forecast manning profiles for future space freighters through direct observation of national and multinational supertanker (VLCC) crews and for other purposes

Period	Obligations	
02/01/79-02/01/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Rizza, J. P. Craig, W. D. Helmreich, R. L.	ARC/Patton, R. M. ARC/Goldwater, D.	69-Psych, NEC

NAS 2-10364 **California Polytechnic State Univ** **1234**
Software development and application for dynamic analysis of the tilt rotor Research aircraft

Period	Obligations	
09/04/79-09/03/80	FY79: $66,948	TOTAL: $66,948
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Grimes, J. E.	ARC/Magee, J. P.	41-Aero Engr

NSG 2391 **California Polytechnic State Univ.** **1235**
Delay of separation with free stream turbulence

Period	Obligations	
08/01/79-07/31/80	FY79: $23,933	TOTAL: $23,933
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Hoffmann, J. A.	ARC/Koenig, D. G	41-Aero Engr

NSG 4014 **California Polytechnic State Univ.** **1236**
Wake vortex turbulence study using radio controlled models

Period	Obligations	
09/23/77-11/20/79	FY79: $25,014	TOTAL: $49,995
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Sandlin, D. R. Nicolaides, J. D.	DFRC/Ayers, T. G. DFRC/Friend, E. L.	41-Aero Engr

NSG 4020 **California Polytechnic State Univ.** **1237**
Wind tunnel test of free wing/free trimmer concept

Period	Obligations	
12/29/78-12/28/79	FY79: $11,993	TOTAL: $11,993
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Sandlin, D. R. Nicolaides, J. D.	DFRC/Gee, S. W. DFRC/Kordes, E. E.	41-Aero Engr

NSG 4022 **California Polytechnic State Univ.** **1238**
Flight evaluation of terminal guidance system

Period	Obligations	
03/01/79-12/31/79	FY79: $56,350	TOTAL: $56,350
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Sandlin, D. R. Nicolaides, J. D. Janeway, R. K.	DFRC/Gee, S. W. DFRC/Kordes, E. E.	41-Aero Engr

NASW 2835 **California State University - Chico** **1239**
Spacemobile operation and maintenance. Space science education project

Period	Obligations	
07/01/75-09/30/79	FY79: $1,121,619	TOTAL: $4,885,037
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Unavailable	HQ-LF/Rich, W. B.	99-Multi-Discip

NCA 2-253801 **California State University - Fullerton** **1240**
Real-time simulation of computer-assisted sequencing and scheduling of terminal area operations

Period	Obligations	
07/01/78-06/30/80	FY79: $15,375	TOTAL: $23,375
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Dear, R. G.	ARC/Tobias, L. ARC/Erzberger, H.	22-Computer Science

NCA 2-253901 **California State University - Fullerton** **1241**
Absorption by SO2 in the near UV and visible spectral regions with applications to Venus' atmosphere

Period	Obligations	
06/15/79-09/30/79	FY79: $8,190	TOTAL: $8,190
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Nanes, R.	ARC/Boese, R. W.	13-Physics

NSG 7314 **California State University - Fullerton** **1242**
Meteoritic bismuth and lead-208 micro distributions

Period	Obligations	
02/01/77-01/31/80	FY79: $35,921	TOTAL: $95,089
Prin Invest	*NASA Tech Officer*	*CASE Category*
Woolum, D. S.	HQ-SL/French, B. M.	32-Geological Sci
Burnett, D. S.	HQ-SL/Quaide, W. L.	

NSG 7614 **California State University - Fullerton** **1243**
Atmospheric dynamics from Viking landing data

Period	Obligations	
08/01/79-02/28/80	FY79: $19,414	TOTAL: $19,414
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ryan, J. A.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NCA 2-290801 **California State Univ. - Hayward** **1244**
Effects of heat acclimation and exercise on acceleration tolerance

Period	Obligations	
01/01/78-12/31/79	FY79: $17,000	TOTAL: $34,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Brown, C. H.	ARC/Greenleaf, J. E.	59-Life Sci, NEC

NASW 3257 **California State University - Los Angeles** **1245**
Development of a direct contact heat exchanger for application in power generation systems utilizing geothermal brines

Period	Obligations	
03/12/79-03/11/80	FY79: $33,285	TOTAL: $33,285
Prin Invest	*NASA Tech Officer*	*CASE Category*
Manvi, R.	HQ-LU/Pohly, J. G.	46-Mech Engr

NSG 2199 **California State University - Los Angeles** **1246**
Biochemical and structural studies on the thermal resistance of 'hardy' bacterial spores

Period	Obligations	
01/01/77-07/31/80	FY79:	TOTAL: $65,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Andreoli, A. J.	ARC/Hochstein, L. I.	51-Biological Sci

NSG 7229 **California State University - Los Angeles** **1247**
Development of a direct contact heat exchanger for application in power generation systems utilizing geothermal brines

Period	Obligations	
06/15/76-09/30/78	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Manivi, R.	HQ-LU/Pohly, J. G.	46-Mech Engr

NSG 7263 **California State University - Los Angeles** **1248**
Differential scanning calorimetry of coal

Period	Obligations	
11/15/76-03/15/80	FY79:	TOTAL: $52,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gold, P. I.	HQ-LU/Pohly, J. G.	46-Mech Engr
	JPL/England, C.	

NAS 5-24436 **California State University - Northridge** **1249**
Harmonic characteristics of aerodata from binary communication channels

Period	Obligations	
02/22/78-06/01/79	FY79:	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nathanson, W. I.	GSFC/Greene, E. P.	22-Computer Science
	GSFC/Poland, W. B., Jr.	

NSG 3065 **California State University - Northridge** **1250**
Study of rolling element dynamic interactions with separators and raceway paths

Period	Obligations	
05/15/75-10/14/79	FY79:	TOTAL: $119,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nypan, L. J.	LERC/Coe, H. H.	46-Mech Engr

NSG 5324 **California State University - Northridge** **1251**
Analysis of solar maximum mission spectral information

Period	Obligations	
01/15/79-01/14/80	FY79: $59,263	TOTAL: $59,263
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martin, S. F.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5330 **California State University - Northridge** **1252**
Research of active regions on the solar constant

Period	Obligations	
02/01/79-01/31/80	FY79: $11,123	TOTAL: $11,123
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chapman, G. A	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5333 **California State University - Northridge** **1253**
Broad spectrum of magnetic, velocity and spectral data

Period	Obligations	
02/01/79-01/31/80	FY79: $26,082	TOTAL: $26,082
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chapman, G. A.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 7456 **California State University - Northridge** **1254**
Magnetic and velocity field of faculae in collaboration with OSO-1

Period	Obligations	
06/01/78-09/30/79	FY79:	TOTAL: $13,153
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chapman, G. A.	HQ-ST/Bohlin, J. D.	13-Physics

NGR 05-058-003 **California State University - Sacramento** **1255**
Development of combustion stability specifications and verification procedures for liquid propellant rocket engines

Period	Obligations	
02/23/72-09/30/78	FY79:	TOTAL: $31,218
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reardon, F. H.	LERC/Priem, R. J.	42-Astro Engr

NCA 2-283801 **Harvey Mudd College** **1256**
Solutions to operational problems encountered in the application of laser diagnostic systems to helicopter rotors

Period	Obligations	
05/30/78-08/31/80	FY79:	TOTAL: $44,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, H.	ARC/Luebs, A. B. ARC/Orloff, K. L.	41-Aero Engr

NCA 2-280801 **Hastings College of Law** **1257**
A joint venture to consolidate law library collections and produce for mutual use and benefit administrative law practice manuals

Period	Obligations	
09/25/78-05/25/80	FY79: $106,700	TOTAL: $126,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wolcott, T.	ARC/Glazer, J. H.	99-Multi-Discip

NSG 2341 **Humboldt State University** **1258**
Application of remote sensing technology in northern California

Period	Obligations	
10/01/78-11/30/79	FY79: $75,213	TOTAL: $75,213
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fox, L.	ARC/Norman, S. M. ARC/Lamb, D. R.	39-Env Sci, NEC

NSG 7525 **Humboldt State University** **1259**
Developing and implementation of an institutional mechanism for transfer of remote sensing technology in northern California as a test site

Period	Obligations	
01/01/79-12/31/79	FY79: $77,390	TOTAL: $77,390
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hankins, D. B.	HQ-ET/Weinstein, R. H. ARC/Lumb, D. R.	39-Env Sci, NEC

NAS 1-11854 **Pomona College** **1260**
Participation in inorganic chemistry planning for the Viking 1975 missions

Period	Obligations	
08/09/72-12/31/78	FY79:	TOTAL: $175,409
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baird, A. K.	LARC/Williams, T. S., Jr. LARC/Glenny, W. R.	12-Chemistry

NSG 7566 **Pomona College** **1261**
Viking inorganic chemical analysis experiment: Data analysis and laboratory simulations

Period	Obligations	
03/01/79-09/30/79	FY79: $75,752	TOTAL: $75,752
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baird, A. K.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 1430 **San Diego State University** **1262**
Use of the Chappuis band for determination of modern and historical stratospheric ozone levels

Period	Obligations	
07/15/77-10/31/79	FY79:	TOTAL: $67,715
Prin Invest	*NASA Tech Officer*	*CASE Category*
Angione, R. J.	LARC/Levine, J. S.	31-Atmos Sci

NCA 2-660806 **San Francisco State University** **1263**
Theoretical studies of solar wind dynamics

Period	Obligations	
09/01/78-08/31/80	FY79: $19,820	TOTAL: $25,820
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kilpatrick, T. Nerney, S. F.	ARC/Barnes, A.	13-Physics

NCA 2-660901 **San Francisco State University** **1264**
Joint use of resources for operation of NASA/Ames university consortium

Period	Obligations	
10/01/78-09/30/79	FY79: $70,858	TOTAL: $70,858
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eisenberg, L. Heidtmann, R. W.	ARC/Tomberlin, K. A.	99-Multi-Discip

NCA 2-660902 **San Francisco State University** **1265**
Homogeneous and heterogeneous ternary complexes involving nucleotides, metal cations and amino acids

Period	Obligations	
07/01/79-05/31/80	FY79: $7,705	TOTAL: $7,705
Prin Invest	*NASA Tech Officer*	*CASE Category*
Orenberg, J. B.	ARC/Lawless, J. G.	12-Chemistry

NSG 2210 **San Francisco State University** **1266**
Elements of search strategy for SETI

Period	Obligations	
01/15/77-12/31/79	FY79: $90,555	TOTAL: $260,498
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seeger, C. S.	ARC/Stull, M. A. ARC/Wolfe, J. H.	99-Multi-Discip

NSG 2281 **San Francisco State University** **1267**
Chronic stress, ethanol and testicular function

Period	Obligations	
11/01/77-12/31/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kakihana, R.	ARC/Oyama, J	59-Life Sci, NEC

NSG 7512 **San Francisco State University** **1268**
Smectite clays in Mars soil: Evidence for their presence and role in Viking biology experiments

Period	Obligations	
10/01/78-09/30/79	FY79: $34,232	TOTAL: $34,232
Prin Invest	*NASA Tech Officer*	*CASE Category*
Orenberg, J. B.	HQ-SB/Young, R. S.	51-Biological Sci

NCA 2-675801 **San Jose State University** **1269**
Assessment of motion sickness in rats: An investigation of pica as the relevant behavioral manifestation

Period	Obligations	
10/01/77-12/31/79	FY79: $18,700	TOTAL: $37,400
Prin. Invest	*NASA Tech Offic*	*CASE Categor*
Fox, R. A.	ARC/Daunton, N. G.	61-Biol Aspects

NCA 2-675808 **San Jose State University** **1270**
Central synoptic actions of antimotion sickness agents

Period	Obligations	
05/01/78-04/30/80	FY79: $19,927	TOTAL: $39,854
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Banks, P. M.	ARC/Daunton, N. G.	61-Biol Aspects

NCA 2-675809 **San Jose State University** **1271**
Stratospheric-mesospheric dynamics

Period	Obligations	
06/04/78-06/01/80	FY79: $28,523	TOTAL: $48,519
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Riegel, C. A.	ARC/Whitten, R. C. ARC/Page, W. A.	31-Atmos Sci

NCA 2-675810 **San Jose State University** **1272**
Radiation chemistry studies of carbon suboxide polymers: An investigation of a proposed pre-biotic link to the origins of life

Period	Obligations	
06/01/78-01/31/80	FY79: $17,000	TOTAL: $29,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Ling, A. C. Mayer, L. A. Selter, G. A.	ARC/Oyama, V. I.	12-Chemistry

NCA 2-675901 **San Jose State University** **1273**
Joint development of a display software system for unsteady transonic flow field computations

Period	Obligations	
10/01/78-10/31/79	FY79: $7,000	TOTAL: $7,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Mitchem, J. Teall, M.	ARC/Chyu, W. J.	22-Computer Science

NCA 2-675902 **San Jose State University** **1274**
Rotor system research aircraft: Mathematical modeling, state estimation, and parameter identification

Period	Obligations	
10/01/78-05/31/80	FY79: $18,891	TOTAL: $18,891
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Wang, J. C.	ARC/DuVal, R. W.	46-Mech Engr

NCA 2-675903 **San Jose State University** **1275**
Quantitation of readaptation of selected physiological variables following environmental perturbation

Period	Obligations	
01/01/79-12/31/80	FY79: $19,495	TOTAL: $19,495
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Holley, D. C.	ARC/Winget, C. M.	51-Biological Sci

NCA 2-675904 **San Jose State University** **1276**
Investigation of an automatic electronic controller for use in human thermal regulation with a liquid cooled garment

Period	Obligations	
03/01/79-08/31/80	FY79: $14,653	TOTAL: $14,653
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Kurzweil, J.	ARC/Webbon, B. W	45-Elec Engr

NCA 2-675906 **San Jose State University** **1277**
Altered gravity as a research tool in the study in of mammalian aging and life span

Period	Obligations	
04/01/79-03/31/80	FY79: $19,999	TOTAL: $19,999
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Ballard, R. C.	ARC/Miquel, J.	51-Biological Sci

NCA 2-675907 **San Jose State University** **1278**
Population dynamics in small scale microbial ecosystems

Period	Obligations	
07/01/79-06/30/81	FY79: $7,995	TOTAL: $7,995
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Haight, R. D.	ARC/Deal, P. H.	51-Biological Sci

NCA 2-675908 **San Jose State University** **1279**
Pioneer/Venus probe anomalies in lower Venus atmosphere

Period	Obligations	
08/24/79-02/28/80	FY79: $18,616	TOTAL: $18,616
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Goodman, J. K. Albert, N. E.	ARC/Polaski, L. J. ARC/Colin, L.	12-Chemistry

NCA 2-675910 **San Jose State University** **1280**
Investigation on prochloron: A prokaryotic green alga

Period	Obligations	
07/15/79-09/30/79	FY79: $2,500	TOTAL: $2,500
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Weaver, E. C.	ARC/Klein, H. P.	51-Biological Sci

NCC 2 2 **San Jose State University** **1281**
A study of planetary meteorology

Period	Obligations	
04/01/79-03/31/80	FY79: $8,198	TOTAL: $8,198
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Riegel, C. A.	ARC/Pollack, J. B.	31-Atmos Sci

NCC 2 3 **San Jose State University** **1282**
A study of fiber materials for use in temperature resistant fiber reinforced composites

Period	Obligations	
05/31/79-05/31/80	FY79: $40,354	TOTAL: $40,354
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Anderson, R. N.	ARC/Riccitiello, S. R. ARC/Goldstein, H. E.	47-Materials Engr

NCC 2 4 **San Jose State University** **1283**
An investigation of the toxic hazards from burning materials in controlled fires

Period	Obligations	
04/01/79-03/31/80	FY79: $34,015	TOTAL: $34,015
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ballard, R. C.	ARC/Cagliostro, D. E.	12-Chemistry

NCC 2 5 **San Jose State University** **1284**
Theoretical studies of the transport and removal processes of Sahara dust

Period	Obligations	
04/01/79-09/30/79	FY79: $14,823	TOTAL: $14,823
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bornstein, R. D.	ARC/Swan, P. R. ARC/Toom, O. B	31-Atmos Sci

NCC 2 8 **San Jose State University** **1285**
Development of superoxides as an improved oxygen source for breathing apparatus

Period	Obligations	
06/20/79-06/19/80	FY79: $45,012	TOTAL: $45,012
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spitze, L. A. Ballou, E. V.	ARC/Wydeven, T. J.	12-Chemistry

NCC 2 14 **San Jose State University** **1286**
Oxygen effects and early biochemical evolution synthetases in yeast

Period	Obligations	
06/01/79-05/30/80	FY79: $42,112	TOTAL: $42,112
Prin Invest	*NASA Tech Officer*	*CASE Category*
Neptune, J. A. Satyanarayana, T.	ARC/Klein, H. P.	54-Env Biology

NCC 2 17 **San Jose State University** **1287**
Stratospheric pollutant transports by planetary waves and tropical circulations

Period	Obligations	
07/16/79-07/15/80	FY79: $31,200	TOTAL: $31,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riegel, C. A.	ARC/Young, R. E.	31-Atmos Sci

NGR 05-046-011 **San Jose State University** **1288**
Investigation of transport parameters relating to hyperfiltration for waste water purification

Period	Obligations	
04/01/70-12/31/79	FY79: $47,862	TOTAL: $387,730
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spitze, L. A. Ballou, E. V.	ARC/Wydeven, T. J.	12-Chemistry

NSG 2130 **San Jose State University** **1289**
Two-dimensional stratospheric model modification

Period	Obligations	
02/01/76-03/31/80	FY79: $44,532	TOTAL: $[illegible]
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riegel, C. A.	ARC/Whitten, R. C. ARC/Borucki, W. J.	31-Atmos Sci

NSG 2186 **San Jose State University** **1290**
Characterization and formulation of fluorocarbon ether elastomers

Period	Obligations	
10/01/76-09/30/80	FY79: $156,000	TOTAL: $238,023
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hyer, M. W. Korus, R. A.	ARC/Rosser, R. W. ARC/Parker, J. A.	12-Chemistry

NSG 2209 **San Jose State University** **1291**
A study of processing parameters for non-metallic composites

Period	Obligations	
03/01/77-02/28/80	FY79: $22,000	TOTAL: $63,574
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ling, A. C. Holloway, J.	ARC/Fohlen, G. M. ARC/Heimbuch, A. H.	12-Chemistry

NSG 2213 **San Jose State University** **1292**
A unified system for the biological exploration of Mars

Period	Obligations	
03/01/77-07/31/80	FY79: $47,925	TOTAL: $87,061
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ballard, R. C. Young, J.	ARC/Dalton, B. P. ARC/Johnson, R. D.	59-Life Sci, NEC

NSG 2239 **San Jose State University** **1293**
Coastal zone color scanner surface truth measurements

Period	Obligations	
06/01/77-09/30/80	FY79: $20,000	TOTAL: $59,975
Prin Invest	*NASA Tech Officer*	*CASE Category*
Broenkow, W. W.	ARC/Wrigley, R. C.	33-Oceanography

NSG 2269 **San Jose State University** **1294**
Perception and performance in flight simulation The contribution of vestibular, visual and auditory information

Period	Obligations	
10/01/77-10/30/79	FY79: $9,920	TOTAL: $383,005
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, B.	ARC/Stewart, J. D.	69-Psych, NEC

NSG 2274 **San Jose State University** **1295**
Characterization and degradation studies on aromatic polyimides and polyesters

Period	Obligations	
10/01/77-10/31/79	FY79: $56,000	TOTAL: $113,948
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hsu, M. T. Rosenberg, M. L.	ARC/Heimbuch, A. H. ARC/Parker, J. A.	12-Chemistry

NSG 2305 **San Jose State University** **1296**
Applications of X-ray fluorescence spectrometry to water quality assurance programs

Period	Obligations	
02/01/78-01/31/80	FY79: $23,000	TOTAL: $40,898
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ling, A. C.	ARC/Nishioka, K.	39-Env Sci, NEC

NSG 2307 **San Jose State University** **1297**
A study of the physical properties of composites

Period	Obligations	
02/01/78-01/30/80	FY79: $25,280	TOTAL: $55,268
Prin Invest	*NASA Tech Officer*	*CASE Category*
Holmstrom, F.	ARC/Mansfield, J. A.	46-Mech Engr
Craig, R.		
Cox, C.		

NSG 2315 **San Jose State University** **1298**
Modification of polymeric substrata for the gas chromatographic analyses of CO, carbonyls and O2 in atmospheres

Period	Obligations	
04/01/78-09/30/79	FY79:	TOTAL: $7,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mayer, L. A.	ARC/Woeller, F. H.	31-Atmos Sci
Christensen, W. W.	ARC/Oyama, V. I.	

NSG 2332 **San Jose State University** **1299**
Fiber reinforced polymeric materials

Period	Obligations	
08/01/78-11/30/79	FY79: $21,382	TOTAL: $29,901
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, R. N.	ARC/Fish, R. H.	47-Materials Engr
Jayarajan, A.	ARC/Mansfield, J. A.	

NSG 2339 **San Jose State University** **1300**
Changes in cortisol and antidiuretic hormone during induced motion sickness in cats

Period	Obligations	
10/01/78-03/31/80	FY79: $9,772	TOTAL: $19,598
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fox, R. A.	ARC/Suri, K. P.	61-Biol Aspects
	ARC/Daunton, N. G.	

NSG 2353 **San Jose State University** **1301**
Environmental stability of composite resin matrices

Period	Obligations	
01/01/79-12/31/79	FY79: $63,407	TOTAL: $63,407
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ling, A. C.	ARC/Golub, M. A.	12-Chemistry
	ARC/Gilwee, W. J.	

NSG 2355 **San Jose State University** **1302**
Antireflection coatings for solar cells

Period	Obligations	
12/01/78-11/30/79	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sree Horsha, K. S.	ARC/Wydeven, T. J.	12-Chemistry
Donohoe, K.		

NSG 2371 **San Jose State University** **1303**
Graphite epoxy composite protective coatings

Period	Obligations	
01/01/79-11/30/79	FY79: $22,546	TOTAL: $22,546
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mayer, L. A.	ARC/Fish, R. H.	12-Chemistry

NSG 2398 **San Jose State University** **1304**
Establishment of a sample treatment protocol for virus detection by laser fluorometry

Period	Obligations	
07/01/79-06/30/80	FY79: $21,653	TOTAL: $21,653
Prin Invest	*NASA Tech Officer*	*CASE Category*
Funk, G. A.	ARC/Johnson, R. D.	39-Env Sci, NEC
	ARC/Dalton, B. P.	

NAS 1-9692 **Stanford University** **1305**
Participation in the biology planning for the Viking 1975 missions

Period	Obligations	
04/13/70-09/30/78	FY79:	TOTAL: $57,125
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lederberg, J.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R	59-Life Sci, NEC

NAS 2-8898 **Stanford University** **1306**
Selected studies in research and development management techniques

Period	Obligations	
06/09/75-12/31/79	FY79: $14,597	TOTAL: $139,892
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pederson, C. A.	ARC/Barnett, R. M.	75-Political Sci
	ARC/Eddy, R.	

NAS 5-20871 **Stanford University** **1307**
Experimental study of interactions in the magnetosphere between energetic particles and VLF waves

Period	Obligations	
02/11/75-12/11/79	FY79: $105,000	TOTAL: $726,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Helliwell, R. A.	GSFC/Davis, M. A.	13-Physics

NAS 5-21960 **Stanford University** **1308**
Gravity only orbit control subsystem

Period	Obligations	
12/21/73-05/30/80	FY79: $1,473	TOTAL: $231,262
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debra, D. B.	GSFC/Kant, S.	42-Astro Engr

NAS 5-24232 **Stanford University** **1309**
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns

Period	Obligations	
06/01/77-08/08/81	FY79: $19,778	TOTAL: $94,276
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lyon, R. J.	GSFC/Broderick, J. C.	32-Geological Sci

NAS 5-24409 **Stanford University** **1310**
Controlled and naturally occurring wave particle interactions in the magnetosphere, for dynamic Explorer

Period	Obligations	
09/22/78-05/30/81	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Helliwell, R. A.	GSFC/Fellerman, K. D.	13-Physics
Park, C. G.	GSFC/Lidston, J. M.	

NAS 5-24420 **Stanford University** **1311**
Observation and correlative studies from ISEE-C data from the Stanford solar telescope

Period	Obligations	
02/17/78-07/23/81	FY79: $100,000	TOTAL: $200,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilcox, J. M.	GSFC/Davis, M. A.	13-Physics

NAS 5-24479 **Stanford University** **1312**
Soil moisture in relation to geologic structure and lithology in northern California

Period	Obligations	
04/21/78-09/20/80	FY79: $1,500	TOTAL: $18,945
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rich, E. I.	GSFC/Broderick, J. C.	32-Geological Sci

NAS 5-25043 **Stanford University** **1313**
Radiographic applications of spatial frequency multiplexing

Period	Obligations	
06/19/78-06/19/80	FY79: $30,000	TOTAL: $60,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
MacOvski, A.	GSFC/Ostrow, H.	19-Phys Sci, NEC

NAS 5-25544 **Stanford University** **1314**
High energy telescope definition study

Period	Obligations	
11/30/78-12/10/79	FY79: $65,000	TOTAL: $65,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Hofstadter, R.	GSFC/Fichtel, C.	11-Astronomy

NAS 8-32263 **Stanford University** **1315**
Scientific data reduction and analysis activities ATM/S 056 experiment

Period	Obligations	
10/01/76-10/31/79	FY79: $100,000	TOTAL: $307,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Underwood, J. H.	MSFC/Snoddy, W. C.	11-Astronomy

NAS 8-32355 **Stanford University** **1316**
Gyro test of general relativity in a satellite

Period	Obligations	
03/11/77-12/31/79	FY79: $420,000	TOTAL: $1,109,667
Prin. Invest.	*NASA Tech Officer*	*CASE Category*
Everitt, C. W.	MSFC/Potter, R. A.	13-Physics
Debra, D. B.	MSFC/Decher, R.	

NAS 8-32605 **Stanford University** **1317**
Superconducting bearings for application in cryogenic experiments in space

Period	Obligations	
08/01/77-04/10/80	FY79: $50,000	TOTAL: $136,901
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Everitt, C. W.	MSFC/Urban, E. W.	13-Physics
	MSFC/Decher, R.	

NAS 8-32852 **Stanford University** **1318**
Definition study of plasma depletion experiments during Spacelab mission 2

Period	Obligations	
10/01/77-08/31/82	FY79: $35,700	TOTAL: $47,841
Prin Invest	*NASA Tech Officer*	*CASE Category*
Darosa, A. V.	MSFC/Guynes, B. V.	31-Atmos Sci
	MSFC/Ise, R.	

NAS 8-33012 **Stanford University** **1319**
An investigation of the thermal structure of selected diffuse features in the soft X-ray/EUV background HEAO-1

Period	Obligations	
05/23/78-05/22/79	FY79:	TOTAL: $16,904
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, A. B., Jr.	MSFC/Dailey, C. C.	11-Astronomy

NAS 8-33110 **Stanford University** **1320**
Direct observation of interface instability during crystal growth

Period	Obligations	
12/01/78-11/30/79	FY79: $82,793	TOTAL: $82,793
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tiller, W. A.	MSFC/Davidson, M. C.	
Feigelson, R. S.	MSFC/Thomas, P. E.	19-Phys Sci, NEC
Elwell, D.		

NAS 8-33234 **Stanford University** **1321**
Theoretical study of hard X-ray emissions from Cygnus X-1 using the HEAO-A observational results

Period	Obligations	
11/20/78-11/19/79	FY79: $12,999	TOTAL: $12,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wagoner, R. V.	MSFC/Dailey, C. C.	11-Astronomy

NASW 2916 **Stanford University** **1322**
Advanced studies in computer visual systems for exploratory vehicles

Period	Obligations	
03/01/76-09/30/78	FY79:	TOTAL: $90,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCarthy, J.	HQ-RE/Pontious, C. E.	45-Elec Engr

NASW 3204 **Stanford University** **1323**
A program of research and research internships in telecommunications and information technology

Period	Obligations	
07/01/78-09/30/79	FY79:	TOTAL: $250,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McAlister, J. F.	HQ-ET/Roberson, F. I.	39-Env Sci, NEC
	HQ-LU/Carter, C. H.	

NCA 2-745001 **Stanford University** **1324**
Eigenvector and eigenvalue analysis of finite difference schemes used to solve the Euler equations

Period	Obligations	
10/01/79-09/30/80	FY79: $7,524	TOTAL: $7,524
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shevell, R. S.	ARC/Lomax, H.	41-Aero Engr

NCA 2-745709 **Stanford University** **1325**
Glucocorticoid effects on bone formation in vitro

Period	Obligations	
01/01/77-09/30/80	FY79:	TOTAL: $28,030
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feldman, D.	ARC/Holton, E. M.	56-Medical Sciences

NCA 2-745802 **Stanford University** **1326**
Renal receptors and simulated weightlessness

Period	Obligations	
10/01/77-09/30/80	FY79: $16,038	TOTAL: $34,573
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feldman, D.	ARC/Holton, E. M.	56-Medical Sciences

NCA 2-745803 **Stanford University** **1327**
The investigation of an Auger electron microprobe: Its capabilities, limitations, and applications

Period	Obligations	
10/01/77-09/30/79	FY79:	TOTAL: $15,070
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spicer, W. E.	ARC/Whiting, E. E.	47-Materials Engr

NCA 2-745901 **Stanford University** **1328**
A study of the epitaxial nucleation and growth characteristics of metals on refractory oxide substrates by in-situ transmission electron microscopy

Period	Obligations	
11/15/78-11/14/80	FY79: $11,618	TOTAL: $11,618
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heuemann, K. H.	ARC/Poppa, H. R.	47-Materials Engr

NCA 2-745902 **Stanford University** **1329**
The interaction of metal ions and nucleotides: Possible mechanisms for the adsorption of nucleotides on homionic bentonite clays

Period	Obligations	
01/01/79-12/31/79	FY79: $17,189	TOTAL: $17,189
Prin Invest	*NASA Tech Officer*	*CASE Category*
Loew, G. H.	ARC/Lawless, J. G.	59-Life Sci, NEC

NCA 2-745903 **Stanford University** **1330**
Joint design and development of interactive graphics editor

Period	Obligations	
02/01/79-10/31/79	FY79: $8,094	TOTAL: $8,094
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanCleemput, W. M.	ARC/Romiez, M. P.	21-Mathematics

NCA 2-745905 **Stanford University** **1331**
Characterization of non-bonding molecular complexes by empirical energy methods coupled to the Ames graphics system

Period	Obligations	
01/01/79-12/31/79	FY79: $9,200	TOTAL: $9,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Loew, G. H.	ARC/MacElroy, R. D.	51-Biological Sci

NCA 2-745906 **Stanford University** **1332**
Numerical simulation of the turbulent shear layer using the vortex-in-cell method

Period	Obligations	
09/01/79-08/31/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Buneman, O.	ARC/Leonard, A.	45-Elec Engr
Couet, B.		

NCA 2-745907 **Stanford University** **1333**
Nutrient recycling in a closed, synthetic ecosystem: A model for the study of ecosystem control

Period	Obligations	
07/01/79-06/30/80	FY79: $14,841	TOTAL: $14,841
Prin Invest	*NASA Tech Officer*	*CASE Category*
Young, L. Y.	ARC/Silverman, M. P.	59-Life Sci, NEC

NCA 2-745908 **Stanford University** **1334**
Catalytic oxidation reactions on group VIII metal particles supported on single crystal

Period	Obligations	
06/01/79-05/31/81	FY79: $8,356	TOTAL: $8,356
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boudart, M.	ARC/Poppa, H. R.	43-Chem Engr

NCA 2-745909 **Stanford University** **1335**
Vectorizing transonic codes for use on advanced computers

Period	Obligations	
06/01/79-09/30/79	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanDyke, M. D.	ARC/Lomax, H.	21-Mathematics
Buning, P. G.	ARC/Stevens, K. G.	

NCA 2-745910 **Stanford University** **1336**
Optimization of an interactive batch analysis setup system for LANDSAT applications

Period	Obligations	
07/16/79-09/30/79	FY79: $5,785	TOTAL: $5,785
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, A. M.	ARC/Hofman, L. B.	39-Env Sci, NEC

NCA 2-745911 **Stanford University** **1337**
Cardiovascular deconditioning and exercise performance

Period	Obligations	
09/01/79-08/31/81	FY79: $22,165	TOTAL: $22,165
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debusk, R. F.	ARC/Goldwater, D.	51-Biological Sci

NCA 2-745912 **Stanford University** **1338**
Blending element-difference schemes

Period	Obligations	
08/01/79-07/31/80	FY79: $5,857	TOTAL: $5,857
Prin Invest	*NASA Tech Officer*	*CASE Category*
Golub, G. H.	ARC/Lomax, H.	21-Mathematics
Stephenson, J. W.		

NCC 2 1 **Stanford University** **1339**
Development of ultrasonic indices for space shuttle passenger selection

Period	Obligations	
04/01/79-03/31/80	FY79: $50,000	TOTAL: $50,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Popp, R.	ARC/Sandler, H.	56-Medical Sciences

NCC 2 10 **Stanford University** **1340**
Aerothermodynamic heat shield environments

Period	Obligations	
09/15/79-08/31/80	FY79: $60,000	TOTAL: $60,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Bershader, D.	ARC/Park, C. G.	42-Astro Engr
	ARC/Howe, J. T.	

NCC 2 13 **Stanford University** **1341**
Experimental studies of rotors

Period	Obligations	
06/01/79-05/30/80	FY79: $30,087	TOTAL: $30,087
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Hickey, D. H.	41-Aero Engr
Chopra, I.	ARC/Johnson, W. R.	

NCC 2 15 **Stanford University** **1342**
A cooperative program in the computation of turbulent flows

Period	Obligations	
07/01/79-10/31/79	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reynolds, W. C.	ARC/Rubesin, M. W.	19-Phys Sci, NEC
Ferziger, J. H.	ARC/Leonard, A.	

NCC 2 18 **Stanford University** **1343**
Studies in rotor aerodynamics and noise

Period	Obligations	
04/01/79-12/31/79	FY79: $52,806	TOTAL: $52,806
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Hickey, D. H.	41-Aero Engr
Wright, S. E.		

NCC 2 21 **Stanford University** **1344**
Fundamental studies of unsteady turbulent boundary layers

Period	Obligations	
09/01/79-11/15/79	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reynolds, W. C.	ARC/Carr, L. W.	41-Aero Engr
Parikh, P.	ARC/McCroskey, W. J.	

NGL 05-020-007 **Stanford University** **1345**
Guidance and control of flight vehicles

Period	Obligations	
08/17/72-08/14/81	FY79: $98,125	TOTAL: $1,547,689
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bryson, A. E., Jr.	ARC/Erzberger, H.	49-Engr, NEC
Franklin, G. F.	ARC/Creer, B. Y.	

NGL 05-020-008 **Stanford University** **1346**
A study of the effects on the earth's environment of very low frequency radiation into the magnetosphere from electrical transmission lines and ground based very low frequency transmitters

Period	Obligations	
09/01/61-02/28/81	FY79: $48,000	TOTAL: $1,640,443
Prin Invest	*NASA Tech Officer*	*CASE Category*
Helliwell, R. A.	HQ-ST/Wiskerchen, M. J.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 05-020-014 **Stanford University** **1347**
Theoretical & experimental radio & radar studies of lunar, planetary ionospheres, atmospheres, and surfaces of sun & interplanetary medium

Period	Obligations	
04/30/63-09/30/79	FY79: $205,000	TOTAL: $3,314,574
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eshleman, V. R.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-ST/Brunk, W. E.	

NGL 05-020-103 **Stanford University** **1348**
Investigation of laser dynamics, modulation and control by means of intra-cavity time varying perturbation

Period	Obligations	
05/16/66-03/31/80	FY79:	TOTAL: $1,122,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harris, S. E.	HQ-RE/Fitzmaurice, M. W.	
Siegman, A. E.	GSFC/McElroy, J. H.	45-Elec Engr
Young, J. F.		

NGL 05-020-176 **Stanford University** **1349**
Investigation of space-related whistler propagation phenomena in laboratory plasmas

Period	Obligations	
03/02/67-06/30/81	FY79: $90,000	TOTAL: $1,179,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Crawford, F. W.	HQ-ST/Kaiser, M. L.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-020-243 **Stanford University** **1350**
Refined methods of aeroelastic analysis and optimization
Period *Obligations*
08/14/67-08/31/82 FY79: $41,925 TOTAL: $192,555
Prin Invest *NASA Tech Officer* *CASE Category*
Ashley, H. LARC/Doggett, R. V., Jr. 41-Aero Engr

NGL 05-020-272 **Stanford University** **1351**
Theoretical study of the solar atmosphere and the structure of active regions
Period *Obligations*
06/07/68-09/30/79 FY79: $74,000 TOTAL: $944,000
Prin Invest *NASA Tech Officer* *CASE Category*
Sturrock, P. A. HQ-ST/Bohlin, J. D. 13-Physics

NGL 05-020-305 **Stanford University** **1352**
Evaluation of the cardiovascular system during various circulatory stresses
Period *Obligations*
09/17/68-11/30/81 FY79: $90,000 TOTAL: $1,409,032
Prin Invest *NASA Tech Officer* *CASE Category*
Harrison, D. C. ARC/Sandler, H. 56-Medical Sciences

NGL 05-020-582 **Stanford University** **1353**
Abiotic origins of optical activity
Period *Obligations*
04/18/72-04/30/80 FY79: $31,400 TOTAL: $282,578
Prin Invest *NASA Tech Officer* *CASE Category*
Bonner, W. A. HQ-SB/Young, R. S. 59-Life Sci, NEC

NGR 05-020-001 **Stanford University** **1354**
Ionospheric research utilizing satellite radio transmissions
Period *Obligations*
07/20/59-12/31/79 FY79: $39,000 TOTAL: $1,374,622
Prin Invest *NASA Tech Officer* *CASE Category*
DaRosa, A. V. HQ-ST/Kaiser, M. L. 19-Phys Sci, NEC
HQ-ST/Schmerling, E. R.

NGR 05-020-004 **Stanford University** **1355**
Cytochemical studies of planetary microorganisms
Period *Obligations*
04/01/60-05/30/80 FY79: TOTAL: $4,673,087
Prin Invest *NASA Tech Officer* *CASE Category*
Lederberg, J. HQ-SB/Young, R. S. 51-Biological Sci
Levinthal, E. C.

NGR 05-020-435 **Stanford University** **1356**
Neuronal analysis of visual perception
Period *Obligations*
01/01/70-11/30/79 FY79: TOTAL: $42,345
Prin Invest *NASA Tech Officer* *CASE Category*
Chow, K. L. ARC/Mehler, W. R. 59-Life Sci, NEC

NGR 05-020-452 **Stanford University** **1357**
Instrumentation study development for high energy physics experiment in space
Period *Obligations*
06/09/70-12/31/79 FY79: $270,000 TOTAL: $2,072,941
Prin Invest *NASA Tech Officer* *CASE Category*
Hofstadter, R. HQ-SC/Kaluzienski, L. J. 11-Astronomy
HQ-SC/Opp, A. G.

NGR 05-020-456 **Stanford University** **1358**
Effects of altered gravitational stress on fluid balance and circulation of blood
Period *Obligations*
05/13/70-12/31/80 FY79: $45,000 TOTAL: $392,090
Prin Invest *NASA Tech Officer* *CASE Category*
Luetscher, J. A. ARC/Keil, L. C. 56-Medical Sciences

NGR 05-020-559 **Stanford University** **1359**
Structure of solar magnetic and velocity fields
Period *Obligations*
03/22/72-09/30/79 FY79: $95,000 TOTAL: $642,000
Prin Invest *NASA Tech Officer* *CASE Category*
Wilcox, J. M. HQ-ST/Bohlin, J. D. 11-Astronomy

NGR 05-020-615 **Stanford University** **1360**
Ultrasonic Doppler measurement of renal artery blood flow
Period *Obligations*
05/26/72-11/30/79 FY79: $80,000 TOTAL: $695,154
Prin Invest *NASA Tech Officer* *CASE Category*
Meindl, J. D. ARC/Sandler, H. 56-Medical Sciences

NGR 05-020-622 **Stanford University** **1361**
Computation of turbulent flows
Period *Obligations*
07/20/72-11/30/79 FY79: $42,045 TOTAL: $446,689
Prin Invest *NASA Tech Officer* *CASE Category*
Reynolds, W. C. ARC/Rubesin, M. W. 47-Materials Engr
Ferziger, J. H. ARC/Lomax, H.

NGR 05-020-634 **Stanford University** **1362**
Biomedical technology transfer
Period *Obligations*
12/07/72-12/31/79 FY79: $250,000 TOTAL: $1,491,488
Prin Invest *NASA Tech Officer* *CASE Category*
Harrison, D. C. ARC/Sandler, H. 56-Medical Sciences

NGR 05-020-649 **Stanford University** **1363**
Study of lunar and planetary surfaces
Period *Obligations*
03/06/73-03/31/80 FY79: $20,000 TOTAL: $127,170
Prin Invest *NASA Tech Officer* *CASE Category*
Howard, H. T. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NGR 05-020-668 **Stanford University** **1364**
Magnetosphere structure and radiation mechanisms on pulsars

Period	Obligations	
11/01/73-10/31/79	FY79: $30,000	TOTAL: $158,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sturrock, P. A.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 05-020-690 **Stanford University** **1365**
Miniature gas analysis systems

Period	Obligations	
09/01/73-11/30/79	FY79: $30,000	TOTAL: $252,632
Prin Invest	*NASA Tech Officer*	*CASE Category*
Angell, J.	ARC/Carle, G. C.	56-Medical Sciences

NGR 05-020-710 **Stanford University** **1366**
Interaction of coatings w/heating environments

Period	Obligations	
01/01/74-12/31/79	FY79: $52,328	TOTAL: $259,894
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bates, C. W.	ARC/Goldstein, H. E.	46-Mech Engr
	ARC/Larson, H. K	

NGT 05-020-409 **Stanford University** **1367**
Summer faculty fellowship program in engineering systems design

Period	Obligations	
12/18/69-12/31/79	FY79:	TOTAL: $1,036,626
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, J. L.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 05-020-412 **Stanford University** **1368**
A summer program of NASA summer faculty fellowships

Period	Obligations	
12/16/69-03/31/80	FY79: $194,751	TOTAL: $1,462,461
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bershader, D.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 05-020-777 **Stanford University** **1369**
Support of specialized post-MD training in aerospace medicine

Period	Obligations	
07/01/76-08/31/78	FY79:	TOTAL: $98,269
Prin Invest	*NASA Tech Officer*	*CASE Category*
Beard, R. R.	HQ-LU/Carter, C. H.	59-Life Sci, NEC

NSG 1443 **Stanford University** **1370**
Generalized eigenvalue problem

Period	Obligations	
10/01/77-12/31/79	FY79:	TOTAL: $26,095
Prin Invest	*NASA Tech Officer*	*CASE Category*
Golub, G. H.	LARC/Shoosmith, J. N.	21-Mathematics
Wilkinson, J. H.		

NSG 2007 **Stanford University** **1371**
Some experimental studies relating to airfoil noise

Period	Obligations	
01/15/74-11/30/79	FY79: $120,990	TOTAL: $1,223,917
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Snyder, C. T.	19-Phys Sci, NEC
	ARC/Hickey, D. H.	

NSG 2085 **Stanford University** **1372**
Aerothermodynamic heat-shield environments

Period	Obligations	
09/15/75-09/14/79	FY79: $53,297	TOTAL: $195,395
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rana, D. S.	ARC/Howe, J. T.	42-Astro Engr
Prakash, G.	ARC/Nachtsheim, P. R.	

NSG 2092 **Stanford University** **1373**
In vivo determination of bone properties from mechanical measurements

Period	Obligations	
07/01/75-10/31/79	FY79: $25,252	TOTAL: $99,119
Prin Invest	*NASA Tech Officer*	*CASE Category*
Steele, C. R.	ARC/Young, D. R.	56-Medical Sciences

NSG 2100 **Stanford University** **1374**
Control methods for aiding a pilot during STOL engine-out transients

Period	Obligations	
08/01/75-12/31/79	FY79:	TOTAL: $77,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debra, D. B.	ARC/Franklin, J. A.	41-Aero Engr
Bryson, A. E., Jr.		

NSG 2121 **Stanford University** **1375**
Preliminary design and computer simulation of a very large Fourier transform processor for the inter-stellar search system

Period	Obligations	
01/01/76-12/31/79	FY79:	TOTAL: $64,371
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, A. M.	ARC/Billingham, J.	49-Engr, NEC
Teague, C. C.	ARC/Wolpe, J. H.	

NSG 2190 **Stanford University** **1376**
Evaluation of the weight and aerodynamics methodology of the general aviation synthesis program for application to moderate size short haul transport aircraft

Period	Obligations	
11/01/76-10/31/79	FY79: $49,990	TOTAL: $119,256
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shevell, R. S.	ARC/Galloway, T. L.	41-Aero Engr
	ARC/Bowles, J. V.	

NSG 2203 **Stanford University** **1377**
Air cargo in an integrated transportation

Period	Obligations	
02/01/77-12/01/79	FY79: $20,000	TOTAL: $90,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dajani, J. R.	ARC/Belsley, S. E. ARC/Jones, J. L.	41-Aero Engr

NSG 2215 **Stanford University** **1378**
Studies of the effects of forward flight on aircraft noise and its simulation

Period	Obligations	
03/01/77-02/28/80	FY79: $160,000	TOTAL: $535,950
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K. Ayoub, A. Dash, R.	ARC/Hickey, D. H. ARC/Atencio, A.	41-Aero Engr

NSG 2233 **Stanford University** **1379**
Experimental studies relating to airfoil unsteady aerodynamics

Period	Obligations	
03/01/77-11/30/79	FY79: $55,000	TOTAL: $293,430
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K. Bodapati, S.	ARC/Davis, S. S.	41-Aero Engr

NSG 2246 **Stanford University** **1380**
Spacelab infrared telescope pointing and control system

Period	Obligations	
07/01/77-11/30/79	FY79: $45,740	TOTAL: $88,846
Prin Invest	*NASA Tech Officer*	*CASE Category*
Powell, J. D.	ARC/Lorell, K. R.	49-Engr, NEC

NSG 2249 **Stanford University** **1381**
High-resolution transmission electron microscope studies of small metal crystallites and surfaces

Period	Obligations	
10/01/77-10/31/79	FY79: $30,572	TOTAL: $59,645
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heinemann, K. H.	ARC/Whiting, E. E.	13-Physics

NSG 2251 **Stanford University** **1382**
Theoretical study of carbon monoxide molecule chemisorbed on iron and platinum surfaces

Period	Obligations	
09/15/77-12/31/79	FY79: $72,514	TOTAL: $136,703
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pound, G. M. Spicer, W. E. Laskowski, B. C.	ARC/Stallcop, J. R.	47-Materials Engr

NSG 2254 **Stanford University** **1383**
Stanford/Ames joint institute for aeronautics and acoustics, helicopter noise detection study

Period	Obligations	
07/01/77-01/31/79	FY79:	TOTAL: $62,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K. Hersh, S.	ARC/Schmitz, F. H. ARC/Mosher, M.	39-Env Sci, NEC

NSG 2258 **Stanford University** **1384**
Fundamental studies of unsteady turbulent boundary layers

Period	Obligations	
09/01/77-11/30/79	FY79: $40,000	TOTAL: $159,835
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reynolds, W. C. Parikh, P.	ARC/McCroskey, W. J. ARC/Carr, L. W.	41-Aero Engr

NSG 2285 **Stanford University** **1385**
An investigation of the performance, application potential, and inherent limitations of a new microanalytical instrument: The Auger microprobe

Period	Obligations	
12/01/77-12/31/79	FY79: $61,780	TOTAL: $123,566
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heinemann, K. H. Pound, G. M. Spicer, W. E	ARC/Whiting, E. E.	13-Physics

NSG 2289 **Stanford University** **1386**
Applications of cars spectroscopy to turbulence measurements

Period	Obligations	
01/01/78-12/31/79	FY79: $30,000	TOTAL: $66,833
Prin Invest	*NASA Tech Officer*	*CASE Category*
Byer, R. L.	ARC/McKenzie, R. L.	13-Physics

NSG 2292 **Stanford University** **1387**
Work on laser-electron beam interactions

Period	Obligations	
01/01/78-12/31/79	FY79: $38,867	TOTAL: $88,867
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pantell, R. H. Piestrup, M. A.	ARC/Billman, K. W.	13-Physics

NSG 2294 **Stanford University** **1388**
Effect of space flight as simulated by bed rest on drug disposition

Period	Obligations	
01/01/78-12/31/79	FY79: $80,000	TOTAL: $140,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harrison, D. C. Kates, R. E. Goldwater, D.	ARC/Sandler, H.	56-Medical Sciences

NSG 2297 **Stanford University** **1389**
Studies on perceptual problems in aeronautics

Period	Obligations	
01/01/78-10/31/79	FY79: $71,881	TOTAL: $187,975
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Nagel, D. C.	41-Aero Engr
Ahumada, A., Jr.		

NSG 2308 **Stanford University** **1390**
Dispersion relationships in turbulence with application to noise/turbulence diagnosis

Period	Obligations	
03/01/78-02/28/80	FY79: $40,000	TOTAL: $102,842
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Chapman, G.	41-Aero Engr
Koutsoyannis, S. P.	ARC/Ahtye, W. F.	

NSG 2346 **Stanford University** **1391**
Mechanical properties of advanced fabric materials

Period	Obligations	
11/01/78-12/31/79	FY79: $9,574	TOTAL: $9,574
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baytes, C. W.	ARC/Fewell, L. L.	46-Mech Engr

NSG 2359 **Stanford University** **1392**
Aerodynamics, aeroelasticity and stability of hang gliders

Period	Obligations	
01/01/79-12/31/79	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ashley, H.	ARC/Ciffone, D. L.	41-Aero Engr

NSG 2370 **Stanford University** **1393**
Flow analysis over an advancing rotor blade

Period	Obligations	
02/01/79-11/30/79	FY79: $30,710	TOTAL: $30,710
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Tauber, M.	41-Aero Engr
Arieli, R.	ARC/Presley, L. L.	

NSG 2372 **Stanford University** **1394**
Ultra high resolution molecular beam cars spectroscopy with applications to planetary atmospheric molecules

Period	Obligations	
01/01/79-12/31/79	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Byer, R. L.	ARC/Chackerian, C., Jr.	13-Physics

NSG 2392 **Stanford University** **1395**
The behavior of sub-grid scale motions in turbulent shear flow

Period	Obligations	
07/01/79-06/30/80	FY79: $22,221	TOTAL: $22,221
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cantwell, B.	ARC/Chapman, G. T.	41-Aero Engr
	ARC/Tobak, M.	

NSG 2393 **Stanford University** **1396**
The annoyance of impulsive helicopter noise

Period	Obligations	
07/01/79-12/31/79	FY79: $25,150	TOTAL: $25,150
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karamcheti, K.	ARC/Mosher, M.	69-Psych, NEC
Hersh, S.	ARC/Nagel, D. C.	

NSG 2400 **Stanford University** **1397**
Control of V/STOL aircraft in ground effect

Period	Obligations	
08/01/79-07/31/80	FY79: $17,000	TOTAL: $17,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debra, D. B.	ARC/Franklin, J. A.	41-Aero Engr
Bryson, A. E., Jr.		

NSG 3124 **Stanford University** **1398**
Heat transfer and hydrodynamic studies on a curved surface with full-coverage film cooling

Period	Obligations	
10/01/76-10/31/79	FY79: $40[illegible]	TOTAL: $213,170
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnston, J. P.	LERC/Gaugler, R. E.	46-Mech Engr
Kays, W. M.		
Moffat, R. J.		

NSG 4002 **Stanford University** **1399**
Theoretical and experimental investigations in the control of aircraft

Period	Obligations	
09/01/74-11/01/79	FY79: $70,000	TOTAL: $330,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debra, D. B.	DFRC/Edwards, J. W.	41-Aero Engr
Ashley, H.		
Bryson, A. E., Jr.		

NSG 5131 **Stanford University** **1400**
Spectroscopy of cosmic X-ray sources of the solar corona

Period	Obligations	
11/15/76-11/30/79	FY79: $180,000	TOTAL: $525,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, A. B., Jr.	GSFC/Bissell, E. E.	13-Physics
Stern, R. A.	HQ-ST/Bohlin, J. D.	
Underwood, J. H.		

NSG 5254 **Stanford University** **1401**
Stochastic modeling of time-averaged equations for climate dynamics

Period	Obligations	
03/15/78-03/14/80	FY79: $80,000	TOTAL: $170,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spreiter, J. R.	GSFC/Halem, M.	31-Atmos Sci

NSG 7092 **Stanford University** **1402**
Energy release in solar flares based on OSO-5 data

Period	Obligations	
10/01/74-09/30/79	FY79: $45,000	TOTAL: $215,000
Prin Invest.	**NASA Tech Officer**	**CASE Category**
Petrosian, V.	HQ-ST/Bohlin, J. D.	11-Astronomy

NSG 7204 **Stanford University** **1403**
Theoretical analyses of relativistic gravitational experiments

Period	Obligations	
10/01/75-09/30/79	FY79: $19,970	TOTAL: $69,685
Prin Invest	**NASA Tech Officer**	**CASE Category**
Will, C. M.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 7395 **Stanford University** **1404**
Radar studies of the Martian surface

Period	Obligations	
03/15/78-03/14/79	FY79:	TOTAL: $32,300
Prin Invest	**NASA Tech Officer**	**CASE Category**
Tyler, G. L.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 7476 **Stanford University** **1405**
An investigation of the structure and composition of the ISM and of fluorescence and self-absorption at low energies in binary X-ray sources using SAS-3 observations

Period	Obligations	
06/01/78-02/28/80	FY79 $21,100	TOTAL: $21,100
Prin Invest	**NASA Tech Officer**	**CASE Category**
Walker, A. B., Jr.	HQ-SC/Kaluzienski, L. J	11-Astronomy
Ride, S. K.	HQ-SC/Fishman, G. J.	

NSG 7538 **Stanford University** **1406**
Stereophotogrammetric and stereophotometric analysis of Viking lander imaging data

Period	Obligations	
04/01/79-03/31/80	FY79: $40,658	TOTAL: $40,658
Prin Invest	**NASA Tech Officer**	**CASE Category**
Levinthal, E. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7552 **Stanford University** **1407**
Analysis of coronal flow and wave phenomena during the solar occultation of the Viking earth radio link

Period	Obligations	
10/01/78-09/30/79	FY79: $44,000	TOTAL: $44,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Tyler, G. L.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7561 **Stanford University** **1408**
Reduction and analyses of Viking bistatic radar observations of Mars from the winter 1977/1978 apparition

Period	Obligations	
03/01/79-11/01/79	FY79: $70,000	TOTAL: $70,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Tyler, G. L.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7619 **Stanford University** **1409**
Studies on lasers and laser devices

Period	Obligations	
04/01/79-03/31/80	FY79: $65,000	TOTAL: $65,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Harris, S. E.	HQ-PT/Schwenk, F. C.	13-Physics
Siegman, A. E.	HQ-RS/Rubin, B.	

NAS 5-20079 **University of California - Berkeley** **1410**
Energetic particles flux experiment for International Sun-Earth Explorer mother & daughter spacecraft

Period	Obligations	
05/23/74-12/31/81	FY79: $131,200	TOTAL: $1,429,290
Prin Invest	**NASA Tech Officer**	**CASE Category**
Anderson, K. A.	GSFC/Kowalski, G. E.	13-Physics

NAS 5-20080 **University of California - Berkeley** **1411**
Quasi-electric fields experiment for ISEE mother/daughter spacecraft

Period	Obligations	
05/21/74-10/30/79	FY79: $88,555	TOTAL: $993,555
Prin Invest	**NASA Tech Officer**	**CASE Category**
Mozer, F. S.	GSFC/Davis, M. A.	13-Physics

NAS 5-20995 **University of California - Berkeley** **1412**
Isotopic composition of primary cosmic rays H thru FE for ISEE-C spacecraft

Period	Obligations	
03/19/75-08/31/80	FY79 $113,000	TOTAL: $1,508,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Heckman, H. K.	GSFC/Gallagher, W. F.	13-Physics
	GSFC/Davis, M. A.	

NAS 5-22307 **University of California - Berkeley** **1413**
Solar X-ray and interplanetary and solar electrons for the ISEE-C spacecraft

Period	Obligations	
04/11/75-12/31/83	FY79: $192,000	TOTAL: $1,593,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Anderson, K. A.	GSFC/Davis, M. A.	32-Geological Sci

NAS 5-24189 **University of California - Berkeley** **1414**
Study the feasibility of developing three telescopes in the 100-1000A range

Period	Obligations	
07/19/77-12/31/79	FY79:	TOTAL: $63,752
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bowyer, C. S.	GSFC/Willis, S. E.	11-Astronomy

NAS 5-24445 **University of California - Berkeley** **1415**
Development of instrumentation for an extreme ultraviolet Explorer

Period	Obligations	
02/28/78-02/01/80	FY79: $105,314	TOTAL: $399,993
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bowyer, C. S.	GSFC/Willis, S. E.	11-Astronomy
	GSFC/Townsend, M. K.	

NAS 5-25007 **University of California - Berkeley** **1416**
Microwave and theoretical studies for Cosmic Background Explorer (COBE) satellite

Period	Obligations	
03/01/78-01/01/80	FY79: $40,722	TOTAL: $126,719
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smoot, G.	GSFC/Nice, D. A. GSFC/Donohoe, M. J.	11-Astronomy

NAS 5-25070 **University of California - Berkeley** **1417**
Provide engineering and consulting services to the space telescope instrument science team

Period	Obligations	
05/20/78-01/31/84	FY79: $23,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
King, I.	GSFC/Hobbs, R. W.	11-Astronomy

NAS 5-25453 **University of California - Berkeley** **1418**
Plastic track detector study

Period	Obligations	
03/16/79-03/15/80	FY79: $29,999	TOTAL: $29,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Price, P. B.	GSFC/Campbell, C. E.	47-Materials Engr

NAS 5-25876 **University of California - Berkeley** **1419**
Degital design and parts documentation for solar flare X-ray detector

Period	Obligations	
09/18/79-09/30/79	FY79: $25,536	TOTAL: $25,536
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. A. Kane, S. R. Lin, R. P.	GSFC/Porreca, G. GSFC/Cline, T. L.	11-Astronomy

NAS 5-25892 **University of California - Berkeley** **1420**
Solar X-ray flare experiment for the international solar polar mission

Period	Obligations	
10/01/79-09/30/83	FY79: $2,500	TOTAL: $2,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. A. Kane, S. R. Lin, R. P.	GSFC/Porreca, G. GSFC/Cline, T. L.	11-Astronomy

NAS 8-29603 **University of California - Berkeley** **1421**
Trans-uranic cosmic ray flight experiment

Period	Obligations	
03/13/73-11/01/77	FY79:	TOTAL: $300,439
Prin Invest	*NASA Tech Officer*	*CASE Category*
Price, P. B.	MSFC/Ondrak, B. T.	13-Physics

NAS 8-32577 **University of California - Berkeley** **1422**
Spacelab mission 1 exp. 95 far UV observations using the Faust instrument on the first Spacelab mission

Period	Obligations	
05/10/77-11/30/81	FY79: $153,783	TOTAL: $314,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bowyer, C. S. Lampton, M.	MSFC/Marmann, R.	11-Astronomy

NAS 8-33011 **University of California - Berkeley** **1423**
High energy X-ray observation of clusters of galaxies

Period	Obligations	
06/01/78-06/07/79	FY79:	TOTAL: $22,6
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A.	MSFC/Dailey, C. C.	11-Astronomy

NAS 8-33349 **University of California - Berkeley** **1424**
A survey and detailed studies of selected systems

Period	Obligations	
03/26/79-03/25/80	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bowyer, C. S.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 8-33356 **University of California - Berkeley** **1425**
The interaction of Supernova remnants with interstellar medium

Period	Obligations	
06/12/79-06/11/80	FY79: $8,001	TOTAL: $8,001
Prin Invest	*NASA Tech Officer*	*CASE Category*
McKee, C.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 8-33357 **University of California - Berkeley** **1426**
Spatial distribution of FE line emission in the Virgo cluster of galaxies

Period	Obligations	
07/02/79-07/01/80	FY79: $5,342	TOTAL: $5,342
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A. Lea, S. M.	MSFC/Barnes, J. B.	11-Astronomy

NAS 9-14565 **University of California - Berkeley** **1427**
Study development of improved photointerpretative techniques to wheat identification

Period	Obligations	
05/15/75-11/14/79	FY79: $300,000	TOTAL: $1,206,203
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N.	JSC/Garcia, J. C.	39-Env Sci, NEC

NCA 2-50001 **University of California - Berkeley** **1428**
Influence of fluid rheology and air resistance on the behavior of liquid jets and drops

Period	Obligations	
10/01/79-09/30/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goren, S. L.	ARC/Altman, R. L.	12-Chemistry

NCA 2-50704 **University of California - Berkeley** **1429**
Microwave systems for in-situ measurement of wetness of snow and earth

Period	Obligations	
01/10/77-07/31/80	FY79: $15,000	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Angelakos, D. J.	ARC/Linlor, W. I.	39-Env Sci, NEC

NCA 2-50705 **University of California - Berkeley** **1430**
High resolution surface analysis for materials science studies

Period	Obligations	
05/01/77-03/31/80	FY79:	TOTAL: $10,450
Prin Invest	*NASA Tech Officer*	*CASE Category*
Angelakos, D. J.	ARC/Poppa, H. R.	13-Physics
Barstow, L. E.		
Jewett, W. R.		

NCA 2-50710 **University of California - Berkeley** **1431**
The modeling of extraterrestrial ecosystems

Period	Obligations	
09/15/77-05/31/80	FY79: $17,390	TOTAL: $40,390
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spear, R.	ARC/MacElroy, R. D.	59-Life Sci, NEC
Auslander, D.		

NCA 2-50801 **University of California - Berkeley** **1432**
Utilization of light-energy by halobacterium halobium

Period	Obligations	
10/01/77-09/30/79	FY79: $18,500	TOTAL: $36,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Packer, L.	ARC/Lanyi, J. K.	51-Biological Sci

NCA 2-50803 **University of California - Berkeley** **1433**
Predictions of motion sickness susceptibility based on human autonomic response pattern data: A mathematical model

Period	Obligations	
05/01/78-10/01/79	FY79:	TOTAL: $14,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strohman, R. C.	ARC/Cowings, P. S.	61-Biol Aspects

NCA 2-50901 **University of California - Berkeley** **1434**
Moving finite element methods for the two-dimensional Navier/Stokes equations

Period	Obligations	
10/01/78-03/31/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, K.	ARC/Lomax, H.	21-Mathematics

NCA 2-50903 **University of California - Berkeley** **1435**
An investigation of the uses of digitally mosaiced LANDSAT and terrain data for wildland resource management in Mendocino County, California

Period	Obligations	
05/01/79-09/30/79	FY79: $18,500	TOTAL: $18,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N.	ARC/Norman, S. M.	39-Env Sci, NEC
Benson, A. S.		

NCA 2-50904 **University of California - Berkeley** **1436**
Physical conditions in warm molecular clouds

Period	Obligations	
07/15/79-10/15/79	FY79: $1,057	TOTAL: $1,057
Prin Invest	*NASA Tech Officer*	*CASE Category*
Silk, J. I.	ARC/Erickson, E. F.	11-Astronomy

NCA 2-50905 **University of California - Berkeley** **1437**
Optimal additives to produce anti-misting fuels

Period	Obligations	
09/15/79-09/14/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, M. C.	ARC/Altman, R. L.	12-Chemistry
Grens, E. A.		

NGL 05-003-003 **University of California - Berkeley** **1438**
Study of extraterrestrial life using reflection spectra as a basis

Period	Obligations	
08/01/60-10/31/79	FY79: $125,000	TOTAL: $4,008,081
Prin Invest	*NASA Tech Officer*	*CASE Category*
Calvin, M.	HQ-SB/Young, R. S.	32-Geological Sci
Weaver, H.		

NGL 05-003-017 **University of California - Berkeley** **1439**
Investigation of high energy solar flare radiation & trapped radiation, including balloon-borne & sounding rocket tests of prototype detectors

Period	Obligations	
04/08/63-01/31/82	FY79: $56,000	TOTAL: $1,968,942
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A.	HQ-ST/King, J. H.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-003-272 **University of California - Berkeley** **1440**
Research on radiation physics

Period	Obligations	
03/01/68-02/28/82	FY79: $55,000	TOTAL: $1,136,380
Prin Invest	*NASA Tech Officer*	*CASE Category*
Townes, C. H.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGL 05-003-286 **University of California - Berkeley** **1441**
Orbiting spacecraft infrared spectrometer development for terrestrial and laboratory study of planetary atmospheres

Period	Obligations	
08/08/68-08/31/79	FY79:	TOTAL: $1,004,004
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pimental, G. C.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 05-003-404 **University of California - Berkeley** **1442**
Integrated study of earth resources in the State of California using remote sensing techniques

Period	Obligations	
07/13/70-10/31/79	FY79:	TOTAL: $4,093,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colewell, R. N.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC
	ARC/Arno, R. D.	

NGL 05-003-409 **University of California - Berkeley** **1443**
Lunar sample analysis

Period	Obligations	
01/26/71-01/31/81	FY79: $72,638	TOTAL: $971,488
Prin Invest	**NASA Tech Officer**	**CASE Category**
Reynolds, J. H.	JSC/Harris, J. W.	13-Physics

NGL 05-003-497 **University of California - Berkeley** **1444**
Research in space sciences

Period	Obligations	
04/05/72-03/31/82	FY79: $250,000	TOTAL: $1,800,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Tole, J. R. Young, L. R.	HQ-SP/Tate, F.	99-Multi-Discip

NGR 05-003-239 **University of California - Berkeley** **1445**
Auroral zone rocket studies of electric fields and precipitating particles

Period	Obligations	
08/26/68-12/14/79	FY79: $177,609	TOTAL: $1,275,420
Prin Invest	**NASA Tech Officer**	**CASE Category**
Mozer, F. S.	GSFC/Bissell, E. E. HQ-ST/Schmerling, E. R.	13-Physics

NGR 05-003-376 **University of California - Berkeley** **1446**
High resolution studies of cosmic rays and solar particles

Period	Obligations	
04/16/71-10/31/79	FY79: $125,000	TOTAL: $753,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Price, P. B.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NGR 05-003-450 **University of California - Berkeley** **1447**
Study of X-ray emission from galactic and extragalactic sources with emphasis on soft and ultra-soft wavelengths

Period	Obligations	
05/28/71-11/30/79	FY79: $141,096	TOTAL: $1,154,752
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bowyer, C. S.	GSFC/Bissell, E. E. HQ-SC/Opp, A. G.	11-Astronomy

NGR 05-003-451 **University of California - Berkeley** **1448**
Research in aeronautics & air transportation

Period	Obligations	
03/30/71-10/15/80	FY79: $95,035	TOTAL: $665,885
Prin Invest	**NASA Tech Officer**	**CASE Category**
Holt, M. Talbot, L.	ARC/Lee, G.	41-Aero Engr

NGR 05-003-452 **University of California - Berkeley** **1449**
Infrared spectra of planetary atmospheres

Period	Obligations	
02/18/72-06/30/80	FY79: $55,044	TOTAL: $370,384
Prin Invest	**NASA Tech Officer**	**CASE Category**
Townes, C. H.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGR 05-003-460 **University of California - Berkeley** **1450**
The chemistry of living systems

Period	Obligations	
07/21/71-10/31/78	FY79: $75,000	TOTAL: $643,750
Prin Invest	**NASA Tech Officer**	**CASE Category**
Jukes, J. H.	HQ-SB/Young, R. S.	12-Chemistry

NGR 05-003-471 **University of California - Berkeley** **1451**
Sociopolitical assessment of advanced technology

Period	Obligations	
05/21/71-12/31/79	FY79:	TOTAL: $319,309
Prin Invest	**NASA Tech Officer**	**CASE Category**
LaPorte, T. R.	ARC/Tanner, T. A.	79-Soc Sci, NEC

NGR 05-003-511 **University of California - Berkeley** **1452**
Spectrographic observation of infrared lines

Period	Obligations	
03/01/73-10/31/79	FY79. $45,150	TOTAL: $297,172
Prin Invest	**NASA Tech Officer**	**CASE Category**
Townes, C. H.	ARC/Haughney, L. C.	11-Astronomy

NGR 05-003-513 **University of California - Berkeley** **1453**
Heavy ion fragement experiments at the bevatron

Period	Obligations	
10/01/73-09/30/79	FY79: $195,320	TOTAL: $830,320
Prin Invest	**NASA Tech Officer**	**CASE Category**
Heckman, H. H.	HQ-SC/Opp, A. G. HQ-SC/Kaluzienski, L. J.	11-Astronomy

NGR 05-003-553 **University of California - Berkeley** **1454**
High energy primary cosmic radiation measured by superconducting magnetic spectrometer

Period	Obligations	
05/10/73-12/31/80	FY79: $300,000	TOTAL: $1,850,164
Prin Invest	**NASA Tech Officer**	**CASE Category**
Buffington, A. Alzarez, L. W.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NGR 05-003-578 **University of California - Berkeley** **1455**
Theoretical X-ray and gamma-ray astronomy

Period	Obligations	
08/01/73-09/30/80	FY79: $37,323	TOTAL: $190,840
Prin Invest	**NASA Tech Officer**	**CASE Category**
Silk, J. I.	HQ-SC/Weiler, E. J. HQ-SC/Roman, N. G.	11-Astronomy

NSG 1637 **University of California - Berkeley** **1456**
Integrated-optics cadmium/telluride electro optic modulator for the 10 um region

Period	Obligations	
08/01/79-07/31/80	FY79: $40,000	TOTAL: $40,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Chiao, R. Y. Gustafson, K. T.	LARC/Sachse, G. W. LARC/Gross, C.	13-Physics

NSG 2127 **University of California - Berkeley** **1457**
An investigation of sources of information on short haul air passengers

Period	Obligations	
01/01/76-03/31/80	FY79: $29,987	TOTAL: $132,325
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kanafani, A.	ARC/Williams, L. J. ARC/Galloway, T. L.	41-Aero Engr

NSG 2151 **University of California - Berkeley** **1458**
Infrared and optical tunneling junctions

Period	Obligations	
05/01/76-01/14/80	FY79: $30,000	TOTAL: $165,427
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gustafson, K. T.	ARC/Billman, K. W.	13-Physics

NSG 2207 **University of California - Berkeley** **1459**
Determining the usefulness of remote sensing for estimating agricultural water demand in California

Period	Obligations	
01/01/77-12/31/79	FY79: $274,000	TOTAL: $434,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N.	ARC/Bauer, E.	39-Env Sci, NEC

NSG 2271 **University of California - Berkeley** **1460**
Selected target search for extraterrestrial observations using very long base interferometry techniques and pattern recoginition studies

Period	Obligations	
10/01/77-10/15/79	FY79: $38,467	TOTAL: $54,480
Prin Invest	*NASA Tech Officer*	*CASE Category*
Welch, W. J. Bowyer, C. S.	ARC/Stull, M. A. ARC/Billingham, J.	59-Life Sci, NEC

NSG 2344 **University of California - Berkeley** **1461**
'Aether drift' and the isotropy of the universe

Period	Obligations	
11/01/78-06/30/80	FY79: $49,293	TOTAL: $49,293
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smoot, G. F.	ARC/Haughney, L. C.	11-Astronomy

NSG 3028 **University of California - Berkeley** **1462**
Techniques for stabilization of lean combustion systems

Period	Obligations	
07/01/74-02/01/79	FY79:	TOTAL: $337,182
Prin Invest	*NASA Tech Officer*	*CASE Category*
Daily, J. W. Oppenheim, A. K. Sawyer, R. F.	LERC/Marek, C. J. LERC/Diehl, L. A.	46-Mech Engr

NSG 3227 **University of California - Berkeley** **1463**
Study of the mechanism of flashback

Period	Obligations	
10/01/78-10/01/81	FY79:	TOTAL: $122,445
Prin Invest	*NASA Tech Officer*	*CASE Category*
Oppenheim, A. K.	LERC/Marek, C. J.	41-Aero Engr

NSG 5093 **University of California - Berkeley** **1464**
Microwave scattering properties of snow fields

Period	Obligations	
02/01/76-07/31/78	FY79:	TOTAL: $61,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Angelakos, D. J.	GSFC/Chang, T. C.	49-Engr, NEC

NSG 5227 **University of California - Berkeley** **1465**
Rotation modulation collimator experiment studies by SAS-3

Period	Obligations	
02/01/78-01/31/79	FY79:	TOTAL: $6,264
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5256 **University of California - Berkeley** **1466**
Water quality mapping and location of entrapment zone in San Francisco Bay delta

Period	Obligations	
03/15/78-08/14/79	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N. Knight, A. W.	GSFC/Kim, H. H.	33-Oceanography

NSG 5292 **University of California - Berkeley** **1467**
Simultaneous X-ray and optical observations

Period	Obligations	
08/01/78-07/31/79	FY79:	TOTAL: $9,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bowyer, C. S.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5360 **University of California - Berkeley** **1468**
Ultraviolet observations of stars, a cosmological comparison

Period	Obligations	
06/01/79-05/31/80	FY79: $4,267	TOTAL: $4,267
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spinrad, H.	GSFC/Boggess, A.	11-Astronomy

NSG 7127 **University of California - Berkeley** **1469**
Map lunar surface remanent magnetic fields and to develop the theory of solar winds cavity

Period	Obligations	
03/25/75-02/28/80	FY79: $42,957	TOTAL: $246,613
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	39-Env Sci, NEC

NSG 7152 **University of California - Berkeley** **1470**
Studies of solar system objects with the new hat creek millimeter wave length radio interferometer

Period	Obligations	
07/01/75-10/31/78	FY79: $33,172	TOTAL: $141,133
Prin Invest	*NASA Tech Officer*	*CASE Category*
Welch, W. J.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

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NSG 7205 **University of California - Berkeley** **1471**
Far infrared all-sky survey

Period	Obligations	
02/01/76-04/15/80	FY79: $44,000	TOTAL: $127,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Richards, P. L.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7220 **University of California - Berkeley** **1472**
Remote sensing to selected problems within the State of California

Period	Obligations	
05/01/76-04/30/82	FY79: $250,000	TOTAL: $840,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 7262 **University of California - Berkeley** **1473**
Primate hemodynamics and metabolism under conditions of weightlessness

Period	Obligations	
07/01/76-09/30/79	FY79: $61,441	TOTAL: $212,641
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pace, N.	HQ-SB/Geib, D. S.	51-Biological Sci

NSG 7277 **University of California - Berkeley** **1474**
Adapt and evaluate a particle detection system for the experiment to measure lunar magnetic fields using the electron reflection method on the terrestrial bodies orbiter mission

Period	Obligations	
09/01/76-03/31/78	FY79:	TOTAL: $41,430
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, R. P.	HQ-SL/Smith, M. J.	31-Atmos Sci
	HQ-SL/Quaide, W. E.	

NSG 7336 **University of California - Berkeley** **1475**
Gravity, body mass, composition, and metabolic rate

Period	Obligations	
12/01/76-11/30/79	FY79: $50,000	TOTAL: $150,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pace, N.	HQ-SB/Halstead, T. W.	51-Biological Sci
	HQ-SB/Geib, D. S.	

NSG 7401 **University of California - Berkeley** **1476**
Theoretical study of Equatorial F region irregularities

Period	Obligations	
11/01/77-10/31/79	FY79:	TOTAL: $49,874
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mozer, F. S.	HQ-ST/Kaiser, M. L.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NSG 7455 **University of California - Berkeley** **1477**
Cosmic microwave background isotropy research

Period	Obligations	
04/15/78-10/31/79	FY79:	TOTAL: $29,992
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smoot, G.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7522 **University of California - Berkeley** **1478**
Social issues and implications of remote sensing applications: Paradigms of technology transfer

Period	Obligations	
01/01/79-12/30/79	FY79: $128,125	TOTAL: $128,125
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. N.	HQ-ET/Tuyahov, A. J.	79-Soc Sci, NEC
Hoos, I. R.	HQ-ET/Weinstein, R. H.	

NSG 7527 **University of California - Berkeley** **1479**
A balloon-borne high resolution X and gamma-ray spectrometer

Period	Obligations	
02/01/79-01/31/80	FY79: $24,000	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7592 **University of California - Berkeley** **1480**
A balloon-borne high resolution X and gamma-ray spectrometer

Period	Obligations	
05/01/79-04/30/80	FY79: $24,000	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, K. A.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 7635 **University of California - Berkeley** **1481**
Thermal behavior of Martian satellites Phobos and Deimos

Period	Obligations	
06/01/79-09/30/79	FY79: $18,000	TOTAL: $18,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Townes, C. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NAS 2-10258 **University of California - Davis** **1482**
Study of conductivity in modified graphite

Period	Obligations	
07/16/79-03/15/80	FY79: $19,071	TOTAL: $19,071
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Fong, C. Y.	ARC/Hansen, C. F.	13-Physics

NAS 5-22964 **University of California - Davis** **1483**
Nimbus-G experiment team support for earth radiation budget

Period	Obligations	
02/18/76-08/31/79	FY79:	TOTAL: $62,187
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coulson, K. L.	GSFC/Nelsen, E. D.	13-Physics

NAS 9-15203 **University of California - Davis** **1484**
Bone density by photon absorptiometry

Period	Obligations	
01/01/77-03/31/78	FY79:	TOTAL: $39,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vogel, J. M.	JSC/Rambaut, P. C.	56-Medical Sciences

NCA 2-180703 **University of California - Davis** **1485**
Human performance under selected environmental stresses: Effects of heat acclimation and physical training on the body fluids and temperature responses during heat stress

Period	*Obligations*	
04/01/77-09/30/79	FY79:	TOTAL: $19,420

Prin Invest	*NASA Tech Officer*	*CASE Category*
Rizza, J. P.	ARC/Greenleaf, J. E.	
Craig, W. D.		56-Medical Sciences
Helmreich, R. L.		

NCA 2-180803 **University of California - Davis** **1486**
A comprehensive analysis of human performance requirements for future space flight

Period	*Obligations*	
04/01/78-09/30/79	FY79: $5,949	TOTAL: $10,545

Prin Invest	*NASA Tech Officer*	*CASE Category*
Harrison, A. A.	ARC/Connors, M. M.	79-Soc Sci, NEC

NCA 2-180901 **University of California - Davis** **1487**
Remote measurement of crop moisture stress utilizing the stress degree day concept

Period	*Obligations*	
10/01/78-09/30/80	FY79: $15,000	TOTAL: $15,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Hatfield, J. L.	ARC/Millard, J. P.	31-Atmos Sci

NCA 2-180903 **University of California - Davis** **1488**
Wind-tunnel determination of particle to fluid speed for saltating flow

Period	*Obligations*	
06/15/79-06/15/80	FY79: $18,500	TOTAL: $18,500

Prin Invest	*NASA Tech Officer*	*CASE Category*
White, B. R.	ARC/Pollack, J. B.	46-Mech Engr

NCA 2-180905 **University of California - Davis** **1489**
Development of a special purpose system for assessment of 24-hour biorhythm desynchronosis and its effects on performance and psychological state

Period	*Obligations*	
07/01/79-06/30/80	FY79: $28,800	TOTAL: $28,800

Prin Invest	*NASA Tech Officer*	*CASE Category*
Chapman, L. F.	ARC/Winget, C. M.	51-Biological Sci

NCC 2 20 **University of California - Davis** **1490**
Improvement in mechanical properties of low conductivity carbon fibers by impregnating with polymers and metals

Period	*Obligations*	
09/01/79-12/31/79	FY79: $15,000	TOTAL: $15,000

Prin Invest	*NASA Tech. Officer*	*CASE Category*
Needles, H. L.	ARC/Cagliostro, D. E.	12-Chemistry
	ARC/Hansen, C. F.	

NSG 2256 **University of California - Davis** **1491**
Turbulent transport modeling of separating and reattaching shear flow

Period	*Obligations*	
10/01/77-09/30/80	FY79: $59,798	TOTAL: $117,540

Prin Invest	*NASA Tech Officer*	*CASE Category*
Launder, B.	ARC/Marvin, J. G.	41-Aero Engr
Sindir, M.	ARC/Rubesin, M. W.	

NSG 2383 **University of California - Davis** **1492**
Improvement of the electron-phonon interaction as a final major step for calculating the superconducting transition temperature in niobium

Period	*Obligations*	
03/01/79-02/28/80	FY79: $1,965	TOTAL: $1,965

Prin Invest	*NASA Tech Officer*	*CASE Category*
Fong, C. Y.	ARC/Arnold, J. O.	13-Physics

NSG 2406 **University of California - Davis** **1493**
Matching crop varieties to efficient use of nitrates ammonium and urea for the Controlled Ecology Life Support System (CELSS)

Period	*Obligations*	
08/01/79-07/31/80	FY79: $40,731	TOTAL: $40,731

Prin Invest	*NASA Tech Officer*	*CASE Category*
Huffaker, R. C.	ARC/Merek, E. L.	51-Biological Sci
Rains, D. W.		
Qualset, C. O.		

NSG 5092 **University of California - Davis** **1494**
Use of remote data in hydrologic engineering models

Period	*Obligations*	
02/01/76-12/31/79	FY79:	TOTAL: $180,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Algazi, V. R.	GSFC/Rango, A.	39-Env Sci, NEC
	GSFC/Salomonson, V. V.	

NSG 7493 **University of California - Davis** **1495**
Avian embryonic development in hyperdynamic environments

Period	*Obligations*	
10/01/78-09/31/79	FY79: $46,000	TOTAL: $46,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, A. H.	HQ-SB/Halstead, T. W.	51-Biological Sci
Abbott, U. K.	HQ-SB/Geib, D. S.	

NAS 3-21963 **University of California - Irvine** **1496**
Development and evaluation of an ion-beam sputter-ventilated ventricular catheter

Period	*Obligations*	
09/27/79-01/10/81	FY79: $47,463	TOTAL: $47,463

Prin. Invest	*NASA Tech Officer*	*CASE Category*
Foltz, E. L.	LERC/Sater, B. L.	56-Medical Sciences

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NGR 05-041-012 **University of California - Irvine** **1497**
Diagnosis of preclinical viral illness and prophylaxis against viral disease

Period	Obligations	
07/13/71-11/30/79	FY79: $35,000	TOTAL: $279,342
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tilles, J. G.	ARC/Mandel, A.D.	56-Medical Sciences

NSG 7208 **University of California - Irvine** **1498**
Gas phase reactions of chlorine and fluorine compound of interest for stratospheric chemistry

Period	Obligations	
01/01/76-09/30/80	FY79: $78,000	TOTAL: $332,111
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molina, M. J.	HQ-EB/Seals, R. K., Jr. HQ-EB/Tilford, S. G.	31-Atmos Sci

NSG 7375 **University of California - Irvine** **1499**
Coronal plasma structures

Period	Obligations	
06/01/77-09/30/79	FY79: $31,000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanHoven, G.	HQ-ST/Bohlin, J. D. HQ-ST/Timothy, A. F.	13-Physics

NSG 7472 **University of California - Irvine** **1500**
Research on some properties of nearly perfect crystals at very low temperatures

Period	Obligations	
07/01/78-06/30/80	FY79: $13,397	TOTAL: $23,397
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wallis, R. F.	HQ-RT/Whiting, E. E.	13-Physics

NAS 2-9128 **University of California - Los Angeles** **1501**
Interdisciplinary scientist, Pioneer/Venus program

Period	Obligations	
02/09/76-10/01/80	FY79:	TOTAL: $1,759
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kaula, W. H.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9131 **University of California - Los Angeles** **1502**
Interdisciplinary scientist, Pioneer/Venus program

Period	Obligations	
02/09/76-10/01/80	FY79: $32,759	TOTAL: $35,642
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schubert, G.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9491 **University of California - Los Angeles** **1503**
Pioneer/Venus data analysis of magnetic fields experiment

Period	Obligations	
08/01/77-11/30/79	FY79: $234,149	TOTAL: $304,149
Prin Invest	*NASA Tech Officer*	*CASE Category*
Russell, C. T. Coleman, P. J., Jr. Coroniti, F. V.	ARC/Hall, C. F. ARC/Porter, D. L.	31-Atmos Sci

NAS 5-20064 **University of California - Los Angeles** **1504**
Magnetic field investigation for ISEE mother/daughter spacecraft

Period	Obligations	
06/05/74-12/30/81	FY79: $184,940	TOTAL: $1,014,908
Prin Invest	*NASA Tech Officer*	*CASE Category*
Russell, C. T.	GSFC/Davis, M. A.	13-Physics

NAS 5-23702 **University of California - Los Angeles** **1505**
ATS-6 environmental measurements experiment data reduction and analysis

Period	Obligations	
10/29/76-06/30/79	FY79: $22,499	TOTAL: $124,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coleman, P. J., Jr. McPherron, R. L.	GSFC/Wende, C. D.	39-Env Sci, NEC

NAS 5-25039 **University of California - Los Angeles** **1506**
Theory formulation and analysis support for the Dynamic Explorer (DE) project

Period	Obligations	
08/08/78-02/28/83	FY79:	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coroniti, F. V.	GSFC/Hoffman, R. A.	13-Physics

NAS 5-25657 **University of California - Los Angeles** **1507**
Space telescope/high resolution spectrograph interstellar medium studies

Period	Obligations	
04/25/79-01/31/82	FY79: $8,000	TOTAL: $8,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jura, M. A.	GSFC/Liberatore, F. J.	11-Astronomy

NAS 8-33115 **University of California - Los Angeles** **1508**
Experiment for materials processing in space entitled: Ultra-Pure Metals Preparation in Space

Period	Obligations	
08/07/78-12/07/79	FY79:	TOTAL: $67,118
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bunshah, R. F.	MSFC/Williams, J.R MSFC/Oran, W. A.	47-Materials Engr

NAS 8-33353 **University of California - Los Angeles** **1509**
X-ray imagery of nearby GSO 0241+622

Period	Obligations	
06/05/79-06/04/80	FY79: $7,990	TOTAL: $7,990
Prin Invest	*NASA Tech Officer*	*CASE Category*
Margon, B. H.	MSFC/Jones, J. B., Jr.	11-Astronomy

NCA 2-390801 **University of California - Los Angeles** **1510**
Studies on rat b-lipotropin

Period	Obligations	
10/01/77-10/01/79	FY79:	TOTAL: $31,350
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Parlow, A.	ARC/Ellis, S.	61-Biol Aspects

NCA 2-390803 **University of California - Los Angeles** **1511**
Low expansion copper aluminosilicate glasses and glass-ceramics

Period	Obligations	
05/01/78-10/31/79	FY79:	TOTAL: $14,888

Prin. Invest	NASA Tech. Officer	CASE Category
MacKenzie, J. D.	ARC/Goldstein, H. E.	47-Materials Engr

NCA 2-390901 **University of California - Los Angeles** **1512**
Damage resistance of space shuttle orbiter thermal protection tiles

Period	Obligations	
02/01/79-10/31/79	FY79: $4,562	TOTAL: $4,562

Prin Invest	NASA Tech Officer	CASE Category
Ono, K.	ARC/Goldstein, H. E.	47-Materials Engr
Varner, J. R.		

NCA 2-390903 **University of California - Los Angeles** **1513**
A study of dry-chemical fire-extinguishing mechanisms

Period	Obligations	
09/01/79-08/31/80	FY79: $29,579	TOTAL: $29,579

Prin Invest	NASA Tech Officer	CASE Category
Knuth, E. L.	ARC/Altman, R. L.	12-Chemistry

NCC 2 7 **University of California - Los Angeles** **1514**
Composite glass fibers with ultra-high modulus

Period	Obligations	
06/01/79-06/01/80	FY79: $26,000	TOTAL: $26,000

Prin Invest	NASA Tech Officer	CASE Category
MacKenzie, J. D.	ARC/Riccitiello, S. R.	47-Materials Engr
Wakaki, J.	ARC/Goldstein, H. E.	

NGL 05-007-002 **University of California - Los Angeles** **1515**
Theoretical evaluation of the internal structures and atmospheres of planets and the moon

Period	Obligations	
01/01/62-12/31/80	FY79: $33,892	TOTAL: $868,077

Prin Invest	NASA Tech Officer	CASE Category
Kaula, W. M.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NGL 05-007-004 **University of California - Los Angeles** **1516**
Theoretical & experimental investigations of particles & fields in space, including construction of prototype instrumentation

Period	Obligations	
01/01/62-10/01/81	FY79: $170,000	TOTAL: $2,785,554

Prin Invest	NASA Tech Officer	CASE Category
Coleman, P. J., Jr.	HQ-ST/Cauffman, D. P.	
		39-Env Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-007-190 **University of California - Los Angeles** **1517**
Theoretical space plasma physics

Period	Obligations	
06/27/68-09/30/81	FY79: $149,927	TOTAL: $593,307

Prin Invest	NASA Tech Officer	CASE Category
Kennel, C. F.	HQ-ST/Wiskerchen, M. J.	
		19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NGL 05-007-367 **University of California - Los Angeles** **1518**
Lunar sample analysis

Period	Obligations	
06/30/72-01/31/80	FY79: $80,000	TOTAL: $578,570

Prin. Invest	NASA Tech Officer	CASE Category
Molnar, P.	JSC/Harris, J. W.	12-Chemistry
Toksoz, M. N.		

NGR 05-007-221 **University of California - Los Angeles** **1519**
Nature and changes of organic matter in deep ocean cores

Period	Obligations	
08/08/69-12/31/78	FY79: $60,000	TOTAL: $586,462

Prin Invest	NASA Tech Officer	CASE Category
Kaplan, I. R.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 05-007-276 **University of California - Los Angeles** **1520**
Data analysis on the OGO-3 and OGO-4 search coil magnetometers

Period	Obligations	
04/03/70-04/30/79	FY79:	TOTAL: $180,000

Prin Invest	NASA Tech Officer	CASE Category
Holzer, R. E.	HQ-ST/Taylor, W. W.	13-Physics

NGR 05-007-289 **University of California - Los Angeles** **1521**
Lunar sample analysis

Period	Obligations	
12/29/70-01/31/80	FY79: $82,319	TOTAL: $661,899

Prin Invest.	NASA Tech Officer	CASE Category
Kaplan, I. R.	JSC/Harris, J. W.	13-Physics

NGR 05-007-317 **University of California - Los Angeles** **1522**
Photogeologic interpretation of Mariner/Mars 1969 imagery

Period	Obligations	
03/09/71-04/30/80	FY79: $14,406	TOTAL: $143,877

Prin Invest	NASA Tech Officer	CASE Category
Schubert, G.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NGR 05-007-328 **University of California - Los Angeles** **1523**
Numerical modeling of the global atmosphere and the world oceans

Period	Obligations	
08/15/71-11/30/79	FY79: $50,000	TOTAL: $440,649

Prin Invest	NASA Tech Officer	CASE Category
Arakawa, A.	GSFC/Halem, M.	31-Atmos Sci
Suarez, M.		

NGR 05-007-329 **University of California - Los Angeles** **1524**
Elemental variations in genetically related meteorites

Period	Obligations	
04/27/71-02/28/80	FY79: $72,000	TOTAL: $426,995

Prin Invest	NASA Tech Officer	CASE Category
Wasson, J. T.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NGR 05-007-351 University of California - Los Angeles 1525
Correlative studies of Apollo 15 and 16 satellite magnetometer data with the Explorer 35 and lunar surface magnetometer data

Period	Obligations	
05/25/72-01/31/80	FY79: $82,800	TOTAL: $705,074
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NGR 05-007-407 University of California - Los Angeles 1526
Paleobiologic studies of the antiquity and precambrian evolution of life

Period	Obligations	
04/10/73-05/31/80	FY79: $20,251	TOTAL: $214,098
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, R. N.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 05-007-418 University of California - Los Angeles 1527
Utricular influences on visual motor control research

Period	Obligations	
09/01/73-06/30/80	FY79: $21,000	TOTAL: $136,023
Prin Invest	*NASA Tech Officer*	*CASE Category*
Markham, C. H.	ARC/Daunton, N. G.	54-Env Biology

NSG 1490 University of California - Los Angeles 1528
Fundamental studies of methods for structural synthesis

Period	Obligations	
02/01/80-01/31/82	FY79: $65,000	TOTAL: $187,416
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmit, L. A., Jr.	LARC/Sobieski, J.	49-Engr, NEC

NSG 1578 University of California - Los Angeles 1529
Response studies of rotors and rotor blades with applications to aeroelastic tailoring

Period	Obligations	
12/01/78-11/30/79	FY79: $58,782	TOTAL: $58,782
Prin Invest	*NASA Tech Officer*	*CASE Category*
Friedman, P. P.	LARC/Hammond, C. E.	41-Aero Engr

NSG 2290 University of California - Los Angeles 1530
Research program in jet/surface interactions

Period	Obligations	
11/01/77-10/31/80	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meecham, W. C.	ARC/Ahtye, W. F.	41-Aero Engr
	ARC/Hickey, D. H	

NSG 2321 University of California - Los Angeles 1531
High modulus glass fibers by ionic and atomic stuffing

Period	Obligations	
06/01/78-06/01/80	FY79: $28,000	TOTAL: $52,154
Prin Invest	*NASA Tech Officer*	*CASE Category*
MacKenzie, J. D.	ARC/Riccitiello, S. R.	19-Phys Sci, NEC
	ARC/Goldstein, H. E.	

NSG 3082 University of California - Los Angeles 1532
Investigation of aeroelastic effects in wind turbines

Period	Obligations	
09/01/75-08/31/78	FY79:	TOTAL: $68,273
Prin Invest	*NASA Tech Officer*	*CASE Category*
Friedman, P. P.	LERC/Spera, D. A.	46-Mech Engr

NSG 3116 University of California - Los Angeles 1533
Forecast of future aviation fuels

Period	Obligations	
08/01/76-09/31/80	FY79: $50,000	TOTAL: $297,826
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liu, C. Y.	LERC/Friedman, R.	41-Aero Engr
English, J. M.		

NSG 3153 University of California - Los Angeles 1534
Cryo-coolant helium super conductor interaction

Period	Obligations	
06/01/77-07/14/79	FY79:	TOTAL: $43,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frederking, T. H.	LERC/Burkhart, J. A.	46-Mech Engr
	LERC/Bercaw, R. W.	

NSG 3236 University of California - Los Angeles 1535
Investigations of the interaction between a grazing flow over a Helmholtz resonator orafice and the acoustically induced velocity in it

Period	Obligations	
11/14/78-11/20/80	FY79: $60,352	TOTAL: $60,352
Prin Invest	*NASA Tech Officer*	*CASE Category*
Charwat, A. F.	LERC/Rice, E. J.	13-Physics
	LERC/Baumeister, K. J.	

NSG 4001 University of California - Los Angeles 1536
Short-time climatology related to air turbulence

Period	Obligations	
03/01/74-03/31/79	FY79:	TOTAL: $118,809
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wurtele, M. G.	DFRC/Ehernberger, L. J.	31-Atmos Sci

NSG 4015 University of California - Los Angeles 1537
Modeling, identification and control with applications to flight vehicles

Period	Obligations	
02/01/78-01/31/82	FY79: $47,301	TOTAL: $127,301
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seidel, B. S.	DFRC/Edwards, J. W.	41-Aero Engr
	DFRC/Iliff, K. W.	

NSG 4024 University of California - Los Angeles 1538
Models for numerical simulation of gravity waves and clear air turbulence formation

Period	Obligations	
05/01/79-04/30/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wurtele, M. G.	DFRC/Ehernberger, L. J.	31-Atmos Sci
Sharman, R.		

NSG 5056 **University of California - Los Angeles** **1539**
Investigation of the far UV spectra of the pole on BE stars Cen and Cyg

Period	Obligations	
02/01/75-09/30/77	FY79:	TOTAL: $8,623
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peters, C. J.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5165 **University of California - Los Angeles** **1540**
A search for slow X-ray pulsars from orbiting astronomical observatory Copernicus

Period	Obligations	
03/14/77-11/13/78	FY79:	TOTAL: $8,540
Prin Invest	*NASA Tech Officer*	*CASE Category*
Margon, B. H.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5169 **University of California - Los Angeles** **1541**
Physical conditions, abundances and chemistry in diffuse interstellar clouds

Period	Obligations	
03/14/77-05/13/80	FY79: $6,157	TOTAL: $10,602
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jura, M. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5190 **University of California - Los Angeles** **1542**
Energetic particle precipitation effects on stratospheric and mesospheric composition and dynamics

Period	Obligations	
07/18/77-08/31/80	FY79: $13,772	TOTAL: $48,185
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thorne, R. M.	GSFC/Reed, E. I.	31-Atmos Sci
Siscoe, G. L.		
Venkateswaran, S. V.		

NSG 5263 **University of California - Los Angeles** **1543**
Earth dynamics analyses

Period	Obligations	
03/15/78-03/14/80	FY79: $56,000	TOTAL: $129,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kaula, W. M.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5272 **University of California - Los Angeles** **1544**
Problems of mass loss and mass transfer in close binary systems

Period	Obligations	
05/01/78-04/30/80	FY79:	TOTAL: $15,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Plavec, M.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5351 **University of California - Los Angeles** **1545**
Investigation of the wayside boundary region plasma and magnetic field

Period	Obligations	
05/01/79-04/30/80	FY79: $30,571	TOTAL: $30,571
Prin Invest	*NASA Tech Officer*	*CASE Category*
Siscoe, G. L.	GSFC/Kupperian, J. E., Jr.	32-Geological Sci

NSG 5358 **University of California - Los Angeles** **1546**
Ultraviolet observations of high excitation planetary nebulae

Period	Obligations	
05/09/79-05/08/80	FY79: $6,100	TOTAL: $6,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Aller, L. H.	GSFC/Boggess, A.	11-Astronomy

NSG 5377 **University of California - Los Angeles** **1547**
Observations of interstellar zinc

Period	Obligations	
06/01/79-05/31/80	FY79: $6,100	TOTAL: $6,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jura, M. A.	GSFC/Boggess, A.	11-Astronomy

NSG 7052 **University of California - Los Angeles** **1548**
Shock processes in terrestrial analogs of porous lunar & meteoritic materials

Period	Obligations	
04/01/74-01/31/80	FY79:	TOTAL: $137,486
Prin Invest	*NASA Tech Officer*	*CASE Category*
Oertel, G.	HQ-SL/Quaide, W. L	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7158 **University of California - Los Angeles** **1549**
Three-dimensional study of solar oscillation

Period	Obligations	
07/01/75-11/30/77	FY79:	TOTAL: $41,733
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ulrich, R. K.	HQ-ST/Timothy, A. F.	13-Physics

NSG 7164 **University of California - Los Angeles** **1550**
Dynamical studies of the Venus atmosphere

Period	Obligations	
09/01/75-08/31/79	FY79: $18,623	TOTAL: $88,251
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schubert, G.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 7180 **University of California - Los Angeles** **1551**
Investigation of the subsonic magnetosheath plasma and magnetic field data from Explorer

Period	Obligations	
10/01/75-06/30/79	FY79:	TOTAL: $99,950
Prin Invest	*NASA Tech Officer*	*CASE Category*
Siscoe, G. L.	HQ-ST/Cauffman, D. P.	39-Env Sci, NEC
	HQ-ST/Schmerling, E. R.	

NSG 7239 **University of California - Los Angeles** **1552**
Possible correlations between the interplanetary magnetic field and zodiacal light polarization vectors

Period	Obligations	
06/01/76-12/31/79	FY79: $140	TOTAL: $15,275
Prin Invest	*NASA Tech Officer*	*CASE Category*
Swinson, W. F. Turner, J. L. Ranson, W. F.	HQ-SL/Murphy, R. E.	31-Atmos Sci

NSG 7282 **University of California - Los Angeles** **1553**
Experimental study of Martian carbonate formation

Period	Obligations	
10/01/76-09/30/78	FY79: $11,152	TOTAL: $41,276
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kieffer, H. H.	HQ-SL/Quaide, W. L. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7295 **University of California - Los Angeles** **1554**
Analysis of data from the helium vector magnetometers on the Pioneers 10 and 11 spacecraft

Period	Obligations	
10/01/76-09/30/79	FY79: $110,000	TOTAL: $285,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coleman, P. J., Jr.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	31-Atmos Sci

NSG 7315 **University of California - Los Angeles** **1555**
Theoretical studies of moon plasma interactions

Period	Obligations	
02/01/77-01/31/80	FY79: $55,238	TOTAL: $122,585
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schubert, G.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7335 **University of California - Los Angeles** **1556**
Rare earths in inclusions from different classes of carbonaceous chondrites

Period	Obligations	
03/01/77-02/28/80	FY79: $46,014	TOTAL: $75,865
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boynton, W. V.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7341 **University of California - Los Angeles** **1557**
Physics of astrophysical plasmas

Period	Obligations	
04/01/77-08/31/80	FY79: $43,437	TOTAL: $73,437
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kennel, C. F.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NSG 7407 **University of California - Los Angeles** **1558**
A three-dimensional observational study of the solar five-minute oscillation

Period	Obligations	
10/01/77-12/31/79	FY79: $71,000	TOTAL: $106,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ulrich, R. K.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7484 **University of California - Los Angeles** **1559**
Planetary dynamos

Period	Obligations	
08/01/78-01/31/80	FY79: $33,132	TOTAL: $33,132
Prin Invest	*NASA Tech Officer*	*CASE Category*
Busse, F. W.	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7489 **University of California - Los Angeles** **1560**
Paleobiologic studies of Archean evolution

Period	Obligations	
06/01/79-08/31/80	FY79: $155,476	TOTAL: $155,476
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schopf, J. W. Hayes, J. M. Hofmann, H. J.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7581 **University of California - Los Angeles** **1561**
Thermal behavior of the Martian north polar region during fall, winter and spring

Period	Obligations	
03/01/79-09/30/79	FY79: $2,079	TOTAL: $2,079
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kieffer, H. H.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7582 **University of California - Los Angeles** **1562**
Viking orbiter combined infrared studies of Mars atmosphere and surface

Period	Obligations	
03/01/79-09/30/79	FY79: $6,265	TOTAL: $6,265
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kieffer, H. H.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7583 **University of California - Los Angeles** **1563**
Thermal behavior of Martian regional and local features

Period	Obligations	
03/01/79-09/30/79	FY79: $42,298	TOTAL: $42,298
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shubert, G.	HQ-SL/Quaide, W. L. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7594 **University of California - Los Angeles** **1564**
Thermal behavior of the Mars atmosphere

Period	Obligations	
03/01/79-09/30/79	FY79: $21,000	TOTAL: $21,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martin, T. Z.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7616 University of California - Los Angeles 1565
Beam-plasma interactions in a large laboratory plasma
Period: 07/01/79-06/30/80 Obligations: FY79: $50,000 TOTAL: $50,000
Prin Invest: Stenzel, R. L. NASA Tech Officer: HQ-ST/Schmerling, E. R. CASE Category: 19-Phys Sci, NEC

NSG 7621 University of California - Los Angeles 1566
Studies of circumstellar and interstellar grains
Period: 09/01/79-08/31/80 Obligations: FY79: $21,339 TOTAL: $21,339
Prin Invest.: Jura, M. A. NASA Tech Officer: HQ-SC/Weiler, E. J. CASE Category: 11-Astronomy
HQ-SC/Roman, N. G.

NGR 05-008-022 University of California - Riverside 1567
Measurement of neutrons from sun
Period: 05/16/69-06/30/80 Obligations: FY79: $139,669 TOTAL: $519,669
Prin Invest: White, R. S. NASA Tech Officer: HQ-SC/Kaluzienski, L. J. CASE Category: 11-Astronomy
HQ-SC/Opp, A. G.

NAS 2-6552 University of California - San Diego 1568
Data analysis of Jovian trapped radiation by Pioneer F/G
Period: 01/25/72-11/30/79 Obligations: FY79: $168,837 TOTAL: $980,798
Prin Invest: Fillius, R. W. NASA Tech Officer: ARC/Hall, C. F. CASE Category: 11-Astronomy
ARC/Porter, D. L.

NAS 3-21386 University of California - San Diego 1569
Measurement of optical properties for Great Lakes organic and inorganic species
Period: 07/31/78-10/30/78 Obligations: FY79: TOTAL: $6,995
Prin Invest: Austin, R. W. NASA Tech Officer: LERC/Salzman, J. A. CASE Category: 19-Phys Sci, NEC

NAS 3-21473 University of California - San Diego 1570
Lake Erie spectral radiance and irradiance study
Period: 06/06/78-08/06/78 Obligations: FY79: TOTAL: $13,068
Prin Invest: Austin, R. W. NASA Tech Officer: LERC/Salzman, J. A. CASE Category: 33-Oceanography

NAS 5-22375 University of California - San Diego 1571
Hard X-ray imaging system study
Period: 05/13/75-02/28/79 Obligations: FY79: TOTAL: $316,757
Prin Invest: Tabakoff, W. Hamed, A. NASA Tech Officer: GSFC/Stouffer, C. G. CASE Category: 11-Astronomy

NAS 5-23481 University of California - San Diego 1572
A spacecraft charging study
Period: 05/03/76-09/30/79 Obligations: FY79: TOTAL: $184,014
Prin Invest: McIlwain, C. E. NASA Tech Officer: GSFC/Bartlett, R. O. CASE Category: 11-Astronomy

NAS 5-23705 University of California - San Diego 1573
Data reduction and analysis of environmental measurement experiments data onboard ATS-6
Period: 11/15/76-12/31/78 Obligations: FY79: TOTAL: $113,335
Prin Invest: McIlwain, C. E. NASA Tech Officer: GSFC/Wende, C. D. CASE Category: 31-Atmos Sci

NAS 5-24463 University of California - San Diego 1574
Faint object spectrograph for space telescope program
Period: 09/15/78-01/31/84 Obligations: FY79: $6,815,993 TOTAL: $8,723,993
Prin Invest: Harms, R. J. NASA Tech Officer: GSFC/White, R. A. CASE Category: 11-Astronomy
GSFC/Sours, W. T.

NAS 5-24466 University of California - San Diego 1575
Fabrication and analysis of digicons
Period: 02/01/78-08/15/78 Obligations: FY79: TOTAL: $39,985
Prin Invest: Beaver, E. A. NASA Tech Officer: GSFC/Shannon, J. L. CASE Category: 11-Astronomy

NAS 5-25054 University of California - San Diego 1576
Development of digiton image tubes
Period: 05/01/78-02/14/80 Obligations: FY79: $109,863 TOTAL: $394,863
Prin Invest: Beaver, E. A. NASA Tech Officer: GSFC/Shannon, J. L. CASE Category: 11-Astronomy

NAS 5-25448 University of California - San Diego 1577
Final definition phase for Gamma Ray Observatory (GRO) experiment
Period: 12/11/78-10/31/79 Obligations: FY79: $170,000 TOTAL: $170,000
Prin Invest: Peterson, L. E. NASA Tech Officer: GSFC/Davis, M. A. CASE Category: 13-Physics

NAS 5-25450 University of California - San Diego 1578
Remote sensing surface truth cruise of the horizon
Period: 01/30/79-09/30/80 Obligations: FY79: $119,947 TOTAL: $119,947
Prin Invest: Austin, R. W. NASA Tech Officer: GSFC/Nelsen, E. D. CASE Category: 33-Oceanography

NAS 8-27974 University of California - San Diego 1579
Design & development of AGR-4 ^{44}eV range gamma ray telescope experiment under the HEAO program

Period	Obligations	
06/22/72-09/30/80	FY79: $438,000	TOTAL: $7,395,119
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, L. E.	MSFC/Manning, H. S.	11-Astronomy

NAS 8-31145 University of California - San Diego 1580
Joint analysis of satellite data study

Period	Obligations	
12/17/74-09/30/78	FY79:	TOTAL: $83,502
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIlwain, C. E.	MSFC/Chappell, C. R.	13-Physics
	MSFC/Burch, J. L.	

NAS 8-32984 University of California - San Diego 1581
Analysis of soft X-ray data

Period	Obligations	
02/01/79-01/31/81	FY79: $41,184	TOTAL: $41,184
Prin Invest	*NASA Tech Officer*	*CASE Category*
Svestka, Z.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C.	

NASW 2996 University of California - San Diego 1582
Development of a 200 channel photometer for use in low light level astronomy

Period	Obligations	
07/01/76-08/15/78	FY79:	TOTAL: $205,998
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIlwain, C. E.	HQ-SC/Aucremanne, M.J.	31-Atmos Sci
Beaver, E. A.	HQ-SC/Rosendhal, J. D.	
Arms, R. H.		

NGL 05-005-003 University of California - San Diego 1583
Laboratory and balloon experiments in X-ray and gamma ray astronomy

Period	Obligations	
09/15/62-11/30/79	FY79: $155,000	TOTAL: $2,405,752
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, L. E.	HQ-SC/Kaluzienski, L. J.	13-Physics
Pelling, R. M.	HQ-SC/Opp, A. G.	

NGL 05-005-004 University of California - San Diego 1584
Theoretical studies in astrophysics

Period	Obligations	
02/04/63-04/01/81	FY79: $26,000	TOTAL: $802,361
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gould, R. J	HQ-SC/Opp, A. G.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGL 05-005-007 University of California - San Diego 1585
Study of geomagnetically trapped particles by Explorer & Injun satellite data, refining particle detectors, detector systems & telemetered-data processing equipment

Period	Obligations	
02/20/64-09/30/80	FY79: $63,000	TOTAL: $2,372,591
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIlwain, C. E.	HQ-ST/Hedin, A. E.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 05-009-002 University of California - San Diego 1586
Studies of the composition and structure of meteorites

Period	Obligations	
10/02/63-02/29/80	FY79: $78,992	TOTAL: $752,871
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arrhenius, G.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NGL 05-009-004 University of California - San Diego 1587
Research on interaction of meteorites, cosmic rays, consideration of origin and history of meteorites

Period	Obligations	
12/19/62-03/14/80	FY79:	TOTAL: $1,002,694
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnold, J. R.	HQ-SL/French, B. M	32-Geological Sci
Fruchter, J. S.	HQ-SL/Quaide, W. L	
Kohl, C. P		

NGL 05-009-005 University of California - San Diego 1588
Research on general geochemical problems, including meteorite materials, rare gas content of meteorites & separation in gas phase at time of formation of solar system

Period	Obligations	
10/31/62-01/31/80	FY79 $17,590	TOTAL: $536,253
Prin Invest	*NASA Tech Officer*	*CASE Category*
Suess, H. E.	HQ-SL/Quaide, W. L.	19-Phys Sci, NEC
Herndon, J. M.		

NGL 05-009-109 University of California - San Diego 1589
In-flight evaluation of weightlessness and gravity on cardiopulmonary function of man

Period	Obligations	
02/17/69-10/31/80	FY79	TOTAL: $873,139
Prin Invest	*NASA Tech Officer*	*CASE Category*
West, J. B.	ARC/Greenleaf, J. E.	56-Medical Sciences

NGL 05-009-148 University of California - San Diego 1590
Lunar sample analysis

Period	Obligations	
02/11/71-01/31/80	FY79: $104,204	TOTAL: $915,124
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnold, J. R.	JSC/Harris, J. W.	12-Chemistry

NGL 05-009-150 **University of California - San Diego** **1591**
Lunar sample analysis

Period	Obligations	
02/01/71-01/31/81	FY79 $96,600	TOTAL $1,435,322
Prin Invest	*NASA Tech Officer*	*CASE Category*
Marti, K.	JSC/Harris, J. W.	12-Chemistry

NGR 05-005-005 **University of California - San Diego** **1592**
Study of lunar gamma ray emission

Period	Obligations	
09/10/63-05/31/80	FY79: $55,155	TOTAL: $767,505
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnold, J. R.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NGR 05-005-055 **University of California - San Diego** **1593**
Infrared astronomic observation from high altitude airplane/telescope program

Period	Obligations	
06/05/73-10/31/79	FY79 $76,063	TOTAL $365,280
Prin Invest	*NASA Tech Officer*	*CASE Category*
Willner, S. P.	ARC/Haughney, L. C.	11-Astronomy

NGR 05-009-110 **University of California - San Diego** **1594**
The structure and evolution of the asteroid belt

Period	Obligations	
01/23/70-11/30/79	FY79: $35,000	TOTAL: $506,690
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alfven, H.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	11-Astronomy

NGR 05-009-188 **University of California - San Diego** **1595**
Construction of a 200 channel photometer for use in low light level astronomy

Period	Obligations	
05/17/72-03/31/80	FY79.	TOTAL: $564,863
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIlwain, C. E.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NGR 05-009-246 **University of California - San Diego** **1596**
Geophysical perturbations on satellite geodesy

Period	Obligations	
11/01/73-11/30/79	FY79. $130,097	TOTAL. $943,333
Prin Invest	*NASA Tech Officer*	*CASE Category*
Berger, J. Brune, J. N.	GSFC/Smith, D. E.	39-Env Sci, NEC

NGR 05-009-257 **University of California - San Diego** **1597**
Single scan television radiography

Period	Obligations	
11/01/73-11/01/79	FY79.	TOTAL: $163,979
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baily, N. A.	ARC/Sandler, H.	56-Medical Sciences

NGR 05-009-264 **University of California - San Diego** **1598**
Optical parallel processing

Period	Obligations	
03/15/74-10/31/78	FY79:	TOTAL $177,825
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lee, S. H.	GSFC/Schaefer, C. H.	49-Engr, NEC

NSG 1590 **University of California - San Diego** **1599**
Halogen Occultation Experiment (HALOE) satellite science team participation

Period	Obligations	
12/15/78-12/14/79	FY79 $62,009	TOTAL: $62,009
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cicerone, R. J.	LARC/Sullivan, E. M. LARC/Russell, J. M., III	31-Atmos Sci

NSG 1641 **University of California - San Diego** **1600**
Ship and satellite bio-optical research in the California Bight

Period	Obligations	
08/01/79-01/31/80	FY79: $28,397	TOTAL: $28,397
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, R. C.	LARC/Whitlock, C.H. LARC/Maddrea, G. L.	33-Oceanography

NSG 2376 **University of California - San Diego** **1601**
Three inch dimensional bispectra and the mean rate of transfer of energy in turbulence

Period	Obligations	
03/01/79-02/28/80	FY79 $35,119	TOTAL $35,119
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosenblatt, M. Helland, K. N. Lii, K. S.	ARC/Rubesin, M. W. ARC/Leonard, A.	19-Phys Sci, NEC

NSG 3034 **University of California - San Diego** **1602**
Preparation and identification of hybrides of intermetallic compounds

Period	Obligations	
08/01/74-12/31/78	FY79	TOTAL. $150,383
Prin Invest	*NASA Tech Officer*	*CASE Category*
Oesterreicher, H.	LERC/Flood, D. J.	47-Materials Engr

NSG 3047 **University of California - San Diego** **1603**
Investigation of droplet burning at zero g

Period	Obligations	
06/01/75-12/31/78	FY79	TOTAL $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, F. A.	LERC/Haggard, J. B.	43-Chem Engr

NSG 3055 **University of California - San Diego** **1604**
Chemical vapor deposition of high TC superconductors

Period	Obligations	
05/01/75-12/31/79	FY79:	TOTAL $216,045
Prin Invest	*NASA Tech Officer*	*CASE Category*
Webb, G. W. Engelhardt, J. J.	LERC/Woollam, J. A. LERC/Brown, G. V.	19-Phys Sci, NEC

NSG 3103 **University of California - San Diego** **1605**
Superconductivity in ternary molybdenum sulfides

Period	Obligations	
04/01/76-03/31/79	FY79:	TOTAL: $100,888
Prin Invest	*NASA Tech Officer*	*CASE Category*
Luo, H. L.	LERC/Woollam, J. A. LERC/Brown, G. V.	13-Physics

NSG 3150 **University of California - San Diego** **1606**
Analysis of interaction between spacecraft and artificially injected particles

Period	Obligations	
05/01/77-11/01/79	FY79:	TOTAL: $180,671
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whipple, E. C., Jr. Deforest, S. E.	LERC/Purvis, C. K. LERC/Stevens, N. J.	39-Env Sci, NEC

NSG 3219 **University of California - San Diego** **1607**
Research on variable density turbulence

Period	Obligations	
10/01/78-09/21/79	FY79:	TOTAL: $65,577
Prin Invest	*NASA Tech Officer*	*CASE Category*
Libby, P. A. Larue, J. C.	LERC/Marek, C. J.	41-Aero Engr

NSG 3296 **University of California - San Diego** **1608**
Studies related to droplet burning at zero g

Period	Obligations	
10/01/79-09/30/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, F. A.	LERC/Cochran, T. H.	13-Physics

NSG 5321 **University of California - San Diego** **1609**
Coronal non-thermal processes

Period	Obligations	
01/15/79-01/14/80	FY79: $21,977	TOTAL: $21,977
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hudson, H. S.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5322 **University of California - San Diego** **1610**
Solar analysis of the solar-constant monitoring package

Period	Obligations	
01/15/79-01/14/80	FY79: $30,435	TOTAL: $30,435
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hudson, H. S.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5331 **University of California - San Diego** **1611**
Measurement of vertical crustal motion with superconducting graviometers

Period	Obligations	
02/01/79-01/31/80	FY79: $46,000	TOTAL: $46,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goodkind, J. M. Warburton, R. J.	GSFC/Kahn, W. D.	19-Phys Sci, NEC

NSG 7027 **University of California - San Diego** **1612**
Orbital geochemical data analysis and synthesis

Period	Obligations	
03/01/74-01/31/80	FY79: $44,000	TOTAL: $387,568
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnold, J. R.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7102 **University of California - San Diego** **1613**
Research on processes controlling the formation and evolution of the small bodies in the solar system

Period	Obligations	
09/01/74-09/30/79	FY79: $48,204	TOTAL: $237,204
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alfven, H.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7121 **University of California - San Diego** **1614**
Carbonaceous chondrites early irradiation and 244/pu fission records

Period	Obligations	
02/27/75-02/01/80	FY79: $55,000	TOTAL: $187,422
Prin Invest	*NASA Tech Officer*	*CASE Category*
MacDougall, J. D.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L	32-Geological Sci

NSG 7161 **University of California - San Diego** **1615**
Analysis and interpretation of solar X-ray data from OSO-7

Period	Obligations	
07/01/75-09/30/79	FY79: $52,000	TOTAL: $215,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, L. E.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7294 **University of California - San Diego** **1616**
Preparation of a set of sky maps in hard X-rays from OSO-1 data

Period	Obligations	
10/01/76-08/31/80	FY79: $54,000	TOTAL: $84,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rothschild, R. E.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NSG 7377 **University of California - San Diego** **1617**
Ultraviolet spectra of quasars related extra galactic sources, and X-ray sources

Period	Obligations	
09/15/77-09/14/79	FY79: $24,200	TOTAL: $54,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burbidge, M.	HQ-SC/Burbidge, E. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7406 **University of California - San Diego** **1618**
Hydrodynamic models of flares

Period	Obligations	
03/01/78-02/28/80	FY79: $69,985	TOTAL: $116,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Canfield, R. C.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7474 **University of California - San Diego** **1619**
Thermal history of enstatite chondrite meteorites

Period	Obligations	
07/01/78-06/30/79	FY79:	TOTAL: $17,000

Prin. Invest	NASA Tech Officer	CASE Category
Rudee, M. L.	HQ-SL/French, B. M.	32-Geological Sci
Herndon, J. M.	HQ-SL/Quaide, W. L.	

NSG 7541 **University of California - San Diego** **1620**
Theoretical studies in gamma ray line astronomy

Period	Obligations	
02/01/79-01/31/80	FY79: $35,000	TOTAL: $35,000

Prin Invest	NASA Tech Officer	CASE Category
Lingenfelter, R. E.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 7623 **University of California - San Diego** **1621**
The new plasmas and its applications to planetary magnetospheres and the heliosphere

Period	Obligations	
07/01/79-06/30/80	FY79: $60,000	TOTAL: $60,000

Prin Invest	NASA Tech Officer	CASE Category
Alfven, H.	HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC
	HQ-ST/Cauffman, D. P.	

NSG 9048 **University of California - San Diego** **1622**
Mechanism of compensation for vestibular lesions and integrative functions in control of equilibrium

Period	Obligations	
01/01/77-01/31/80	FY79: $35,000	TOTAL: $146,250

Prin. Invest	NASA Tech Officer	CASE Category
Bullock, T. H.	JSC/Homick, J. L.	56-Medical Sciences

NSG 9075 **University of California - San Diego** **1623**
In-flight evaluation of weightlessness and gravity on cardiopulmonary function in man

Period	Obligations	
12/01/78-11/30/79	FY79: $50,000	TOTAL: $50,000

Prin Invest	NASA Tech. Officer	CASE Category
West, J. B.	JSC/Alexander, W. C.	56-Medical Sciences

NAS 2-10162 **University of California - San Francisco** **1624**
Bones and joint development in neonatal rats

Period	Obligations	
02/12/79-08/15/80	FY79: $48,770	TOTAL: $48,770

Prin. Invest	NASA Tech Officer	CASE Category
Arnaud, C. D.	ARC/Souza, K. A.	51-Biological Sci
	ARC/Holton, E. M.	

NAS 2-10164 **University of California - San Francisco** **1625**
Quantitative analysis of selected bone parameters

Period	Obligations	
02/12/79-08/15/80	FY79: $44,876	TOTAL: $44,876

Prin. Invest	NASA Tech Officer	CASE Category
Arnaud, C. D.	ARC/Souza, K. A.	51-Biological Sci
	ARC/Holton, E. M.	

NAS 2-10350 **University of California - San Francisco** **1626**
Bone resorption and calcium absorption in rats during spaceflight

Period	Obligations	
09/04/79-08/31/80	FY79: $10,000	TOTAL: $10,000

Prin Invest	NASA Tech Officer	CASE Category
Cann, C. E.	ARC/Souza, K. A.	59-Life Sci, NEC

NAS 9-15887 **University of California - San Francisco** **1627**
Computerized tomographic determination of spinal bone mineral content

Period	Obligations	
09/15/79-09/14/80	FY79: $53,400	TOTAL: $53,400

Prin Invest	NASA Tech Officer	CASE Category
Genant, H. K.	JSC/Altchuler, S. I.	56-Medical Sciences
Cann, C. E.		

NCA 2-665801 **University of California - San Francisco** **1628**
Amelioration of muscle protein degradation

Period	Obligations	
10/01/77-09/30/79	FY79: $26,026	TOTAL: $42,526

Prin Invest	NASA Tech Officer	CASE Category
Searle, G. L.	ARC/Feller, D. D.	59-Life Sci, NEC

NCA 2-665802 **University of California - San Francisco** **1629**
Light and electron microscopic investigations of the connections of brain stem emetic trigger zone regions

Period	Obligations	
01/01/78-12/31/79	FY79: $9,845	TOTAL: $29,810

Prin Invest	NASA Tech Officer	CASE Category
Snyder, R. L.	ARC/Mehler, W. R.	51-Biological Sci

NCA 2-665803 **University of California - San Francisco** **1630**
Evaluation of endocrinological control of γ-carboxyglutamic acid-containing protein in bone

Period	Obligations	
01/01/78-12/31/79	FY79: $15,640	TOTAL: $31,040

Prin Invest	NASA Tech Officer	CASE Category
Asling, C. W.	ARC/Callahan, P. X.	
	ARC/Ellis, S.	56-Medical Sciences

NCA 2-665806 **University of California - San Francisco** **1631**
Regulation of adrenal glucocorticoid response to hemorrhage in the conscious dog

Period	Obligations	
06/01/78-05/31/80	FY79: $17,336	TOTAL: $34,672

Prin Invest	NASA Tech Officer	CASE Category
Dallman, M. F.	ARC/Keil, L. C.	59-Life Sci, NEC

NCA 2-665807 **University of California - San Francisco** **1632**
Control of blood volume

Period	Obligations	
06/01/78-05/31/80	FY79: $8,470	TOTAL: $18,216

Prin Invest	NASA Tech Officer	CASE Category
Ramsay, D. J.	ARC/Keil, L. C.	56-Medical Sciences

NCA 2-665810 **University of California - San Francisco** **1633**
Autogenic-feedback training for vestibular symptomatology: Massed vs. distributed training schedules

Period	Obligations	
09/01/78-08/31/80	FY79: $17,800	TOTAL: $19,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kamiya, J.	ARC/Cowings, P. S.	61-Biol Aspects
Toscano, W. B.		
Johnston, J.		

NCA 2-665901 **University of California - San Francisco** **1634**
Studies on the muscle peptidases and myosin properties after freeze-injury, cross reinnervation, immobilization and thyroid status

Period	Obligations	
02/01/79-01/31/81	FY79: $19,930	TOTAL: $19,930
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riley, D. A.	ARC/Ellis, S.	51-Biological Sci

NCA 2-665902 **University of California - San Francisco** **1635**
Bone turnover and endocrine status in rats on a model system that simulates weightlessness

Period	Obligations	
04/15/79-04/14/81	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnaud, C. D.	ARC/Holton, E. M.	51-Biological Sci

NCA 2-665903 **University of California - San Francisco** **1636**
Localization of tripeptidyl aminopeptidase and carbonic anhydrase III in rat muscles by light and electron microscopy

Period	Obligations	
06/01/79-05/31/81	FY79: $19,710	TOTAL: $19,710
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riley, D. A.	ARC/Ellis, S.	51-Biological Sci

NCA 2-665904 **University of California - San Francisco** **1637**
Development of computer-controlled studies and a record management system for psychophysiological research

Period	Obligations	
05/01/79-04/30/81	FY79: $8,800	TOTAL: $8,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kamiya, J.	ARC/Cowings, P. S.	69-Psych, NEC
Capparell, J.		

NCA 2-665905 **University of California - San Francisco** **1638**
Quantitative determination of diastolic left ventricular properties and dynamic geometry in the dog

Period	Obligations	
07/01/79-06/30/81	FY79: $2,500	TOTAL: $2,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Glantz, S. A.	ARC/Sandler, H	56-Medical Sciences

NSG 7151 **University of California - San Francisco** **1639**
Light energy conversion in halobacterium

Period	Obligations	
07/01/75-09/30/80	FY79: $50,000	TOTAL: $219,620
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stoeckenius, W.	HQ-SB/Young, R. S.	51-Biological Sci
Bogomolni, R. A		
Lozier, R. H.		

NAS 9-15509 **University of California - Santa Barbara** **1640**
Forest classification and inventory system using LANDSAT, digital terrain, and ground sample data

Period	Obligations	
04/01/78-04/30/80	FY79: $56,791	TOTAL: $108,927
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strahler, A. H.	JSC/Amsbury, D. L.	32-Geological Sci

NCA 2-680805 **University of California - Santa Barbara** **1641**
Studies of rotational gas cloud collapse, fragmentation and disk formation

Period	Obligations	
09/01/78-10/31/79	FY79:	TOTAL: $1,430
Prin Invest	*NASA Tech Officer*	*CASE Category*
Glantz, S. A.	ARC/Cassen, P.	13-Physics
Boss, A.	ARC/Black, D. C.	

NCA 2-680901 **University of California - Santa Barbara** **1642**
Conceptual design and preliminary demonstration of a prime agricultural land component of an integrated remote sensing system

Period	Obligations	
01/01/79-09/30/79	FY79: $19,987	TOTAL: $19,987
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	ARC/Norman, S. M.	39-Env Sci, NEC
Tinney, L.		

NCA 2-680902 **University of California - Santa Barbara** **1643**
The California Integrated Remote Sensing System (CIRSS)

Period	Obligations	
03/01/79-12/31/79	FY79: $19,947	TOTAL: $19,947
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	ARC/Norman, S. M.	39-Env Sci, NEC

NCA 2-680903 **University of California - Santa Barbara** **1644**
Joint training courses for educators

Period	Obligations	
07/01/79-04/30/80	FY79: $10,088	TOTAL: $10,088
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	ARC/Jones, H.	39-Env Sci, NEC

NCC 2 11 **University of California - Santa Barbara** **1645**
Investigation of liquid drop dynamics in zero gravity

Period	Obligations	
05/01/79-12/31/79	FY79: $14,951	TOTAL: $14,951
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vanyo, J. P.	ARC/Brooks, W. F.	13-Physics

NCC 5 5 University of California - Santa Barbara 1646
Soil moisture detection using SEASAT data and radar scatterometers

Period	Obligations	
04/01/79-03/31/80	FY79: $30,003	TOTAL: $30,003
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	GSFC/Chang, A. T.	32-Geological Sci
Simonett, D. S.		

NGR 05-010-062 University of California - Santa Barbara 1647
Planetary geophysics

Period	Obligations	
03/01/73-01/31/80	FY79: $30,117	TOTAL: $144,828
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peale, S. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NGR 05-010-081 University of California - Santa Barbara 1648
Lunar sample analysis

Period	Obligations	
02/01/73-01/31/80	FY79: $15,495	TOTAL: $385,897
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tilton, G. R	JSC/Harris, J. W.	32-Geological Sci

NSG 2222 University of California - Santa Barbara 1649
An investigation of the kinetics for hydrogen chemisorption on iron metal surfaces

Period	Obligations	
04/01/77-03/31/80	FY79: $39,932	TOTAL: $114,610
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shanabarger, M. R.	ARC/Nelson, H. G.	47-Materials Engr

NSG 2358 University of California - Santa Barbara 1650
Proposed universities regional applications program work plan FY 79

Period	Obligations	
12/01/78-12/31/79	FY79: $34,796	TOTAL: $34,796
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	ARC/Jones, H.	39-Env Sci, NEC

NSG 2377 University of California - Santa Barbara 1651
Use of collateral information to improve LANDSAT classification accuracies

Period	Obligations	
04/01/79-04/30/80	FY79: $47,600	TOTAL: $47,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	ARC/Peterson, D.	39-Env Sci, NEC
Strahler, A. H.	ARC/Lumb, D R.	

NSG 3256 University of California - Santa Barbara 1652
Laser fluorescence studies of the chemical interactions of sodium species with sulfur bearing fuels

Period	Obligations	
03/01/79-03/21/80	FY79: $34,995	TOTAL: $34,995
Prin Invest	*NASA Tech Officer*	*CASE Category*
Steinberg, M.	LERC/Kohl, F. J.	12-Chemistry
Schofield, K.	LERC/Stearns, C. A.	

NSG 5106 University of California - Santa Barbara 1653
Research of ocean color in the Santa Barbara Channel

Period	Obligations	
03/01/76-12/31/77	FY79:	TOTAL: $17,490
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	GSFC/Barnes, W. L.	33-Oceanography

NSG 5155 University of California - Santa Barbara 1654
Remote sensing applications to hydrologic modeling

Period	Obligations	
01/17/77-03/16/78	FY79:	TOTAL: $49,547
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ozier, J. D.	GSFC/Salomonson, V. V.	
Simonett, D. S.	GSFC/Ormsby, J. O.	32-Geological Sci
Estes, J. E.		

NSG 5170 University of California - Santa Barbara 1655
Field sampling and data analysis for radar soil moisture test

Period	Obligations	
03/04/77-04/03/79	FY79:	TOTAL: $54,838
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Estes, J. E.	GSFC/Chang, A. T.	32-Geological Sci
Simonett, D. S.		

NSG 5262 University of California - Santa Barbara 1656
Calibration of satellite data for input to distributed parameter hydrologic models

Period	Obligations	
04/01/78-05/31/80	FY79: $65,000	TOTAL: $154,974
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dozier, J.	GSFC/Rango, A.	39-Env Sci, NEC
	GSFC/Salomonson, V. V.	

NSG 7586 University of California - Santa Barbara 1657
Magnetization of lunar samples

Period	Obligations	
05/01/79-01/31/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fuller, M. D.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 9020 University of California - Santa Barbara 1658
Remanent magnetization of lunar samples

Period	Obligations	
10/31/74-01/31/81	FY79:	TOTAL: $401,356
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fuller, M. D.	JSC/Harris, J. W.	19-Phys Sci, NEC

NAS 8-33347 University of California - Santa Cruz 1659
Correlative study of optical and X-ray observations of Seyfert galaxy nuclei

Period	Obligations	
03/26/79-03/25/80	FY79: $1,400	TOTAL: $1,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Davies, R. L.	MSFC/Jones, J. B., Jr.	11-Astronomy

NGR 05-061-015 **University of California - Santa Cruz** **1660**
Infrared instrumentation

Period	Obligations	
07/06/72-02/28/80	FY79:	TOTAL: $193,385
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rank, D. M.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 5361 **University of California - Santa Cruz** **1661**
Ultraviolet spectroscopy of Tauri stars

Period	Obligations	
06/01/79-05/31/80	FY79: $5,400	TOTAL: $5,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herbig, G. H.	GSFC/Boggess, A.	11-Astronomy

NSG 7503 **University of California - Santa Cruz** **1662**
Astronomical applications of charged coupled device technology

Period	Obligations	
11/01/78-04/30/80	FY79: $38,559	TOTAL: $38,559
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, J. S.	HQ-SC/Roman, N. G. HQ-SC/Weiler, E. J.	11-Astronomy

NAS 2-9504 **University of San Francisco** **1663**
Radiation dosimetry experiment on U.S.S.R./U.S. Kosmos 77 flight

Period	Obligations	
02/16/77-08/15/79	FY79:	TOTAL: $138,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	ARC/Souza, K. A.	13-Physics

NAS 2-9845 **University of San Francisco** **1664**
General development of haze particle dosimetry

Period	Obligations	
02/01/78-01/15/80	FY79: $45,000	TOTAL: $90,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	ARC/Philpott, D. E.	59-Life Sci, NEC

NAS 2-10161 **University of San Francisco** **1665**
US/USSR radiation protection studies

Period	Obligations	
02/01/79-07/31/80	FY79: $76,789	TOTAL: $76,789
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	ARC/Souza, K. A.	59-Life Sci, NEC

NAS 8-26758 **University of San Francisco** **1666**
Study for heavy particle, passive, personnel dosimetry using etched particles

Period	Obligations	
01/21/71-12/31/80	FY79: $20,000	TOTAL: $127,704
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	MSFC/Parnell, T. A. MSFC/Watts, J. W., Jr.	13-Physics

NAS 9-15152 **University of San Francisco** **1667**
Automated analysis system for haze particle trace dosimeters

Period	Obligations	
02/01/77-12/31/81	FY79: $30,000	TOTAL: $248,607
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	JSC/Rundel, R.	56-Medical Sciences

NAS 9-15337 **University of San Francisco** **1668**
Definition of Spacelab I experiment on high energy particle dosimetry

Period	Obligations	
04/01/77-12/31/81	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	JSC/Thirolf, R. G. JSC/Huffstetler, W. J.	13-Physics

NCA 2-670902 **University of San Francisco** **1669**
The evaluation of structural and chemical alterations of bone and red blood cells in the restrained monkey model

Period	Obligations	
07/01/79-06/30/81	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Furst, A.	ARC/Young, D. R. ARC/Leon, H. A.	51-Biological Sci

NSG 2063 **University of San Francisco** **1670**
Effects of heavy particle radiation of the mammalian brain and related tissues

Period	Obligations	
01/01/75-10/31/79	FY79: $93,000	TOTAL: $460,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	ARC/Miquel, J.	51-Biological Sci

NSG 2304 **University of San Francisco** **1671**
Histopathological changes in rodents caused by haze particle irradiation

Period	Obligations	
03/01/78-12/31/79	FY79: $13,000	TOTAL: $24,124
Prin Invest	*NASA Tech Officer*	*CASE Category*
Benton, E. V.	ARC/Kraft, L. M. ARC/Kennard, J.	51-Biological Sci

NAS 2-9967 **University of Santa Clara** **1672**
Study of evaporative heat loss comparisons between direct calorimetry and local hygrometer techniques

Period	Obligations	
06/06/78-12/01/79	FY79:	TOTAL: $14,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pefley, R. K.	ARC/Greenleaf, J. E.	59-Life Sci, NEC

NCA 2-685805 **University of Santa Clara** **1673**
A comprehensive analysis of human performance requirements for future space flight

Period	Obligations	
04/01/78-09/30/79	FY79: $20,363	TOTAL: $31,343
Prin Invest	*NASA Tech Officer*	*CASE Category*
Akins, F.	ARC/Connors, M. M.	62-Social Aspects

NCA 2-685806 **University of Santa Clara** **1674**
Peptide and polynucleotide catalysis of amino acid condensation on hypohydrous clay surfaces
Period *Obligations*
06/01/78-12/31/79 FY79: $10,851 TOTAL: $15,851
Prin Invest *NASA Tech Officer* *CASE Category*
White, D. H. ARC/Chang, S. 12-Chemistry

NCA 2-685808 **University of Santa Clara** **1675**
Bacterial denitrification and steady state growth: A putative model for the study of mixed cultures
Period *Obligations*
05/01/78-12/31/79 FY79: $24,264 TOTAL: $40,748
Prin. Invest *NASA Tech Officer* *CASE Category*
Tomlinson, G. A. ARC/Hochstein, L. I. 51-Biological Sci

NCA 2-685812 **University of Santa Clara** **1676**
Effects of immunologically-induced growth hormone deficiency on body composition, metabolism, and brain development
Period *Obligations*
07/15/78-09/30/79 FY79: $18,494 TOTAL: $21,149
Prin Invest *NASA Tech Officer* *CASE Category*
Fast, T. ARC/Grindeland, R. 51-Biological Sci
ARC/Mehler, W. R.

NCA 2-685813 **University of Santa Clara** **1677**
The effects of simulated weightlessness (or hypokinesia) on the humoral immune response in rats
Period *Obligations*
07/01/78-09/30/79 FY79: TOTAL: $5,000
Prin Invest. *NASA Tech Officer* *CASE Category*
Caren, L. D. ARC/Mandel, A. D. 51-Biological Sci

NCA 2-685903 **University of Santa Clara** **1678**
Adsorption of biomonomers on selected transition metal clays
Period *Obligations*
12/01/78-11/30/79 FY79: $14,473 TOTAL: $14,473
Prin Invest *NASA Tech Officer* *CASE Category*
Sweeney, M. A. ARC/Lawless, J. G. 12-Chemistry

NCA 2-685905 **University of Santa Clara** **1679**
Real-time hardware design for adaptive digital video bandwidth compression
Period *Obligations*
01/01/79-12/31/79 FY79: $6,963 TOTAL: $6,963
Prin Invest *NASA Tech Officer* *CASE Category*
Danielson, R. L. ARC/Knauer, S.C. 22-Computer Science

NCA 2-685906 **University of Santa Clara** **1680**
Applications of the two-dimensional model of the Venus ionosphere
Period *Obligations*
06/01/79-05/31/80 FY79: $17,381 TOTAL: $17,381
Prin Invest *NASA Tech Officer* *CASE Category*
McCormick, P. T. ARC/Whitten, R. C. 13-Physics

NCA 2-685907 **University of Santa Clara** **1681**
A study of the transportability characteristics of the MINI-VICAR image analysis system
Period *Obligations*
06/11/79-12/31/79 FY79: $8,385 TOTAL: $8,385
Prin Invest *NASA Tech Officer* *CASE Category*
Danielson, R. L. ARC/Hofman, L. B. 21-Mathematics

NCA 2-685908 **University of Santa Clara** **1682**
Effects of turbulence on image quality in airborne telescopes
Period *Obligations*
07/27/79-12/31/79 FY79: $3,058 TOTAL: $3,058
Prin Invest *NASA Tech Officer* *CASE Category*
Fraser, G. ARC/Erickson, E. F. 11-Astronomy

NCA 2-685909 **University of Santa Clara** **1683**
Deduction of impulse signal from the response function in the ionosphere
Period *Obligations*
07/01/79-06/01/80 FY79: $5,655 TOTAL: $5,655
Prin Invest *NASA Tech Officer* *CASE Category*
Barker, W. A. ARC/Dyal, P. 11-Astronomy

NCC 2 16 **University of Santa Clara** **1684**
The effect of boundary conditions on finite difference solutions of fluid flow problems
Period *Obligations*
07/01/79-12/31/79 FY79: $18,000 TOTAL: $18,000
Prin Invest *NASA Tech Officer* *CASE Category*
Vinokur, M. ARC/Lomax, H. 41-Aero Engr

NGT 05-017-998 **University of Santa Clara** **1685**
Summer faculty fellowship program in engineering systems design
Period *Obligations*
01/01/79-03/31/80 FY79: $136,096 TOTAL: $136,096
Prin Invest *NASA Tech Officer* *CASE Category*
Healy, T. J. HQ-LU/Carter, C. H 49-Engr, NEC

NSG 2275 **University of Santa Clara** **1686**
Studies in planetary impact cratering and geomorphology
Period *Obligations*
12/01/77-09/30/79 FY79: TOTAL: $24,275
Prin Invest *NASA Tech Officer* *CASE Category*
Aggarwal, H. R. ARC/Oberbeck, V. R. 32-Geological Sci

NSG 2286 **University of Santa Clara** **1687**
Wind tunnel simulations of Martian sand storms
Period *Obligations*
12/01/77-01/31/80 FY79: $50,400 TOTAL: $95,128
Prin Invest *NASA Tech Officer* *CASE Category*
Greeley, R. ARC/Margozzi, A. P. 99-Multi-Discip
Leach, R.

NSG 7330 **University of Santa Clara** **1688**
Effect of layering on viscous flow of lunar craters

Period	Obligations	
03/01/77-02/28/80	FY79: $49,472	TOTAL: $89,705
Prin Invest	*NASA Tech Officer*	*CASE Category*
Aggarwal, H. R.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NAS 2-6558 **University of Southern California** **1689**
Pioneer F/G analysis of ultraviolet experiment

Period	Obligations	
09/01/71-09/30/79	FY79: $198,907	TOTAL: $1,186,116
Prin. Invest	*NASA Tech. Officer*	*CASE Category*
Judge, D. L. Carlson, R. W.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-7969 **University of Southern California** **1690**
Pioneer 10 and 11 data analysis of plasma analyzer experiment

Period	Obligations	
07/01/76-09/30/79	FY79: $70,000	TOTAL: $474,452
Prin Invest	*NASA Tech Officer*	*CASE Category*
Intriligator, D. S.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9478 **University of Southern California** **1691**
Pioneer/Venus data analysis of the plasma analyzer experiment

Period	Obligations	
12/16/77-09/30/79	FY79: $83,668	TOTAL: $161,288
Prin Invest	*NASA Tech Officer*	*CASE Category*
Intriligator, D. S.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NASW 3009 **University of Southern California** **1692**
Development and implementation of a minority industrial assistance program

Period	Obligations	
04/01/77-09/30/78	FY79:	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-ET/Gilbert, R.	99-Multi-Discip

NASW 3235 **University of Southern California** **1693**
Operation of NASA Industrial Application Center

Period	Obligations	
04/01/78-03/31/80	FY79: $622,927	TOTAL: $622,927
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mixer, R.	HQ-ET/Bivins, R. G. HQ-ET/Ault, L. A.	99-Multi-Discip

NGR 05-018-178 **University of Southern California** **1694**
Dynamics of rotating-stratified flows with applications to the Jovian atmosphere

Period	Obligations	
09/11/72-10/31/79	FY79: $58,671	TOTAL: $298,315
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maxworthy, T.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 05-018-180 **University of Southern California** **1695**
Photon-molecule interaction studies of the atmospheric gases

Period	Obligations	
08/31/72-04/30/80	FY79: $59,747	TOTAL: $272,346
Prin Invest	*NASA Tech Officer*	*CASE Category*
Judge, D. L.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 05-018-181 **University of Southern California** **1696**
Analysis of Pioneer solar wind observations of the interplanetary medium

Period	Obligations	
10/25/72-09/30/79	FY79:	TOTAL: $196,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Intriligator, D. S.	HQ-ST/Schmerling, E R.	13-Physics

NGR 05-018-185 **University of Southern California** **1697**
Study of the structure of magnetopause using simultaneous OGO-5 magnetic field light ion mass

Period	Obligations	
06/27/73-06/30/79	FY79:	TOTAL: $25,795
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Intriligator, D. S.	HQ-ST/Cauffman, D. P.	13-Physics

NSG 1401 **University of Southern California** **1698**
Investigation of an improved theory for the analysis of natural and man-made layered structures

Period	Obligations	
03/15/77-09/15/80	FY79: $40,906	TOTAL: $112,203
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seide, P.	LARC/Stein, M.	41-Aero Engr

NSG 1536 **University of Southern California** **1699**
Electro-deposition of III-V compounds and their alloys from molten salts with special reference to large area solar cells

Period	Obligations	
09/01/78-11/30/79	FY79:	TOTAL: $44,251
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kroger, F. A.	LARC/Conway, E. J. LARC/Walker, G. H	47-Materials Engr

NSG 2351 **University of Southern California** **1700**
Theoretical developments in the computation of the electronic properties of molecules

Period	Obligations	
01/01/79-12/31/79	FY79: $23,740	TOTAL: $23,740
Prin Invest	*NASA Tech Officer*	*CASE Category*
Segal, G. A.	ARC/Jaffee, R. L.	21-Mathematics

NSG 3243 **University of Southern California** **1701**
Axial field permanent magnet motors for electrical vehicles

Period	Obligations	
01/08/79-01/07/81	FY79: $124,000	TOTAL: $124,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Campbell, P. E.	LERC/Secunde, R. R. LERC/Schwab, J. R.	45-Elec Engr

CALIFORNIA (Continued)

NSG 3248 **University of Southern California** **1702**
Workshop on fundamentals of turbojet combustion

Period	Obligations	
02/01/79-05/01/79	FY79: $19,988	TOTAL: $19,988
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gerstein, M.	LERC/Diehl, L. A.	46-Mech Engr

NSG 5108 **University of Southern California** **1703**
Rocket experiments to measure the solar intensity and profile

Period	Obligations	
04/01/76-07/08/80	FY79: $116,851	TOTAL: $328,228
Prin Invest	*NASA Tech Officer*	*CASE Category*
Judge, D. L.	GSFC/Bissell, E. E.	13-Physics
Carlson, R. W.	HQ-SL/Murphy, R. E.	

NSG 5356 **University of Southern California** **1704**
Study of the nature of shells in stars

Period	Obligations	
06/01/79-05/31/80	FY79: $4,000	TOTAL: $4,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peters, G. J.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7367 **University of Southern California** **1705**
Complementary pairing of amino acids, Schiff bases and a reverse translation mechanism for the origin of the genetic code under pre-biotic conditions

Period	Obligations	
10/01/77-09/30/79	FY79: $63,550	TOTAL: $127,103
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strehler, B. L.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7535 **University of Southern California** **1706**
Development of room temperature mercuric X-ray detectors for in-site analysis of extraterrestrial objects

Period	Obligations	
01/26/79-02/27/80	FY79: $56,453	TOTAL: $56,453
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huth, G. C.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7595 **University of Southern California** **1707**
A study of atmospheric development of exospheric planetary bodies

Period	Obligations	
05/01/79-04/30/80	FY79: $42,871	TOTAL: $42,871
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shemansky, D. E.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

COLORADO

NSG 3122 **Colorado School of Mines** **1708**
Determination of the mechanism of influence of organic compounds on the thermal instability of fuels

Period	Obligations	
11/01/76-10/31/80	FY79: $32,926	TOTAL: $107,560
Prin Invest	*NASA Tech Officer*	*CASE Category*
Daniel, S. R.	LERC/Antoine, A. C	12-Chemistry
Gary, J. H.		

NAS 1-15580 **Colorado State University** **1709**
Satellite cloud digital data tapes (GOES)

Period	Obligations	
03/13/79-03/12/80	FY79: $64,000	TOTAL: $64,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
VonderHaar, T. H.	LARC/Harrison, E. F.	31-Atmos Sci
	LARC/Cooper, J. E.	

NAS 1-15925 **Colorado State University** **1710**
Study of building effects on exhaust plume

Period	Obligations	
09/05/79-01/04/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meroney, R. N.	LARC/Lassiter, W. S.	31-Atmos Sci
	LARC/Lovell, J. B.	

NAS 5-22959 **Colorado State University** **1711**
Earth radiation budget sensor support

Period	Obligations	
01/23/76-10/01/80	FY79: $98,000	TOTAL: $196,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
VonderHaar, T. H.	GSFC/Nelsen, E. D.	39-Env Sci, NEC

NAS 5-25081 **Colorado State University** **1712**
Develop methods for monitoring drought impact from LANDSAT

Period	Obligations	
05/08/78-11/07/79	FY79: $59,986	TOTAL: $134,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maxwell, E. L.	GSFC/Tucker, C. J.	39-Env Sci, NEC

NAS 5-25696 **Colorado State University** **1713**
Processing of LANDSAT data for change detection research

Period	Obligations	
06/06/79-06/06/80	FY79: $5,100	TOTAL: $5,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maxwell, E. L.	GSFC/Toll, D.	39-Env Sci, NEC

NAS 5-25760 **Colorado State University** **1714**
Software and hardware design fabrication testing and documentation of micro communication system

Period	Obligations	
09/18/79-03/17/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIver, J. L.	GSFC/Schnetzler, C. C.	31-Atmos Sci

NAS 8-31673 **Colorado State University** **1715**
Zero-gravity aerosol behavior

Period	Obligations	
09/08/75-01/08/78	FY79:	TOTAL: $49,878
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Edwards, H. W.	MSFC/Fichtl, G. H. MSFC/Morgan, S. H.	46-Mech Engr

NCA 2-165901 **Colorado State University** **1716**
Applications of Gaussian collocation to the solution of the compressible Navier/Stokes equations

Period	Obligations	
10/01/78-09/30/80	FY79: $12,000	TOTAL: $22,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Prenter, P. M.	ARC/Murphy, J. D.	21-Mathematics

NGR 06-002-095 **Colorado State University** **1717**
Combustion instability with partial length acoustic lines

Period	Obligations	
12/02/69-12/14/79	FY79: $14,379	TOTAL: $349,139
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Mitchell, C. E.	LERC/Priem, R. J.	42-Astro Engr

NGR 06-002-098 **Colorado State University** **1718**
Atmospheric transport processes as evaluated from Nimbus III satellite data

Period	Obligations	
04/13/70-11/30/78	FY79:	TOTAL: $349,856
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Reiter, W. R.	GSFC/Theon, J. S.	31-Atmos Sci

NGR 06-002-112 **Colorado State University** **1719**
An experimental investigation of hollow cathode discharge start-up and operation

Period	Obligations	
12/21/70-11/30/79	FY79: $85,339	TOTAL: $547,744
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilbur, P. J.	LERC/Kerslake, W. R.	46-Mech Engr

NGR 06-002-159 **Colorado State University** **1720**
Bulk properties of atomic triplet hydrogen & high pressure equation of state for solid hydrogen

Period	Obligations	
12/04/72-04/30/80	FY79: $43,327	TOTAL: $192,731
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Etters, R. D.	HQ-RT/Schwenk, F. C.	13-Physics

NGR 06-002-191 **Colorado State University** **1721**
Impact studies on computer needs for a whole earth dynamical model

Period	Obligations	
05/01/74-05/31/79	FY79:	TOTAL: $119,440
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thompson, E. G. Young, C.	GSFC/Carpenter, L. H.	32-Geological Sci

NSG 1594 **Colorado State University** **1722**
Approaching the ultimate velocimeter: Laser techniques for measuring molecular flows

Period	Obligations	
02/01/79-01/31/80	FY79: $21,936	TOTAL: $21,936
Prin Invest.	*NASA Tech Officer*	*CASE Category*
She, C. Y. Fairbanks, W. M., Jr.	LARC/Exton, R. J.	13-Physics

NSG 2232 **Colorado State University** **1723**
Effects of the hypokinetic state on bioenergetic balance using the rat as a model mammalian system

Period	Obligations	
05/01/77-04/30/80	FY79: $25,000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jordan, J. P.	ARC/Holton, E. M.	51-Biological Sci

NSG 2287 **Colorado State University** **1724**
Velocity measurements by laser resonance fluorescence from a single atom

Period	Obligations	
12/01/77-01/31/80	FY79: $22,000	TOTAL: $59,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
She, C. Y. Fairbanks, W. M., Jr.	ARC/McKenzie, R. L.	13-Physics

NSG 3011 **Colorado State University** **1725**
Experimental investigations of argon and xenon ion sources

Period	Obligations	
07/01/74-10/30/79	FY79: $64,966	TOTAL: $265,926
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kaufman, H. R. Wilbur, P. J. Robinson, R. S.	LERC/Rawlin, V. K. LERC/Byers, D. C.	42-Astro Engr

NSG 3060 **Colorado State University** **1726**
Experimental measurement of thermal energy charge-transfer cross-sections of interest in rare-gas metal-vapor lasers

Period	Obligations	
03/01/75-09/30/78	FY79:	TOTAL: $87,805
Prin Invest	*NASA Tech Officer*	*CASE Category*
Collins, G. J.	LERC/Chubb, D. L. LERC/Michels, C. J.	13-Physics

NSG 3086 **Colorado State University** **1727**
Industrial ion source technology

Period	Obligations	
11/15/75-12/14/79	FY79: $34,982	TOTAL: $180,247
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Kaufman, H. R. Wilbur, P. J.	LERC/Mirtich, M. J. LERC/Banks, B. A.	13-Physics

NSG 3127 **Colorado State University** **1728**
Effects of turbulence on laminar separation on aerodynamic surfaces such as airfoils blading

Period	*Obligations*	
10/01/76-01/15/80	FY79: $68,999	TOTAL: $188,231
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sadeh, W. Z.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3145 **Colorado State University** **1729**
Laboratory simulation of irradiation induced dielectric breakdown in spacecraft charging

Period	*Obligations*	
04/01/77-09/30/79	FY79:	TOTAL: $95,490
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Yadlowsky, E. J.	LERC/Aron, P. R.	13-Physics
Churchill, R. J.		

NSG 3167 **Colorado State University** **1730**
Amorphous silicon by neutralized ion beam sputtering

Period	*Obligations*	
11/01/77-05/01/79	FY79:	TOTAL: $32,380
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Sites, J. R.	LERC/Sater, B. L.	13-Physics
Greenberg, A. S.	LERC/Banks, B. A.	

NSG 3196 **Colorado State University** **1731**
Space environmental effects on high voltage solar arrays

Period	*Obligations*	
05/15/78-05/14/80	FY79: $39,978	TOTAL: $79,309
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Kaufman, H. R.	LERC/Grier, N. T.	13-Physics
Yadlowsky, E. J.	LERC/Stevens, N. J.	

NSG 5073 **Colorado State University** **1732**
Project NOWCAST (short term forecasting of weather)

Period	*Obligations*	
12/01/75-12/31/78	FY79:	TOTAL: $157,648
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Marlatt, W. E.	GSFC/Neil, E. A.	31-Atmos Sci

NSG 5258 **Colorado State University** **1733**
Tropical cyclone intensities from satellite microwave data

Period	*Obligations*	
04/01/78-03/31/80	FY79: $42,083	TOTAL: $56,897
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonderHaar, T. H.	GSFC/Rodgers, E. B.	31-Atmos Sci
Kidder, S. Q.		

NSG 5259 **Colorado State University** **1734**
Numerical simulation of Vertical Temperature Profile Radiometer (VTPR) temperature retrievals in a severe storm environment

Period	*Obligations*	
04/01/78-03/31/79	FY79:	TOTAL: $31,914
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
VonderHaar, T. H.	GSFC/Arking, A.	31-Atmos Sci
Hillger, D. W.		

NSG 5340 **Colorado State University** **1735**
Atmospheric variability and air-sea interaction

Period	*Obligations*	
04/01/79-03/31/80	FY79: $20,000	TOTAL: $20,000
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Reiter, E. R.	GSFC/Arking, A.	31-Atmos Sci
	GSFC/Weinman, J. A.	

NSG 5341 **Colorado State University** **1736**
Research of satellite inferences of convective storm intensity

Period	*Obligations*	
05/01/79-04/30/80	FY79: $65,921	TOTAL: $65,921
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cotton, W. R.	GSFC/Heymsfield, G. M.	31-Atmos Sci
Tripoli, G. J.		
Reynolds, D. W.		

NSG 5352 **Colorado State University** **1737**
Study of the global positioning system for maritime concepts

Period	*Obligations*	
06/01/79-05/31/80	FY79: $54,910	TOTAL: $54,910
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Parkenson, B. W.	GSFC/Taylor, R. E.	45-Elec Engr
Winn, C. B.		

NSG 5357 **Colorado State University** **1738**
Initial studies of middle and upper tropospheric stratiform clouds

Period	*Obligations*	
06/01/79-05/31/80	FY79: $63,649	TOTAL: $63,649
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Cox, S. K.	GSFC/Curran, R. J.	31-Atmos Sci

NSG 9045 **Colorado State University** **1739**
Effects of heavy ions on optic tissues

Period	*Obligations*	
10/01/76-12/31/79	FY79: $49,500	TOTAL: $174,500
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lett, J. T.	JSC/Hoffman, R. A.	59-Life Sci, NEC

NAS 9-15276 **Fort Lewis College** **1740**
Development of a winter wheat adjustable calendar model

Period	*Obligations*	
02/15/77-12/31/79	FY79:	TOTAL: $51,653
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Baker, J. R.	JSC/Browne, I. D.	13-Physics

NAS 2-9477 **University of Colorado - Boulder** **1741**
Pioneer/Venus data analysis of the orbiter ultraviolet spectrometer experiment

Period	*Obligations*	
08/30/77-11/30/79	FY79: $290,000	TOTAL: $443,154
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Stewart, I. A.	ARC/Hall, C. F.	19-Phys Sci, NEC
Barth, C. A.	ARC/Porter, D. L.	
Hord, C. W		

NAS 5-11405 **University of Colorado - Boulder** **1742**
University of Colorado ultraviolet nitric oxide experiment for atmosphere Explorer

Period	Obligations	
03/17/71-09/30/80	FY79: $14,857	TOTAL: $1,065,642
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barth, C. A.	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-22409 **University of Colorado - Boulder** **1743**
Reduction and analysis of data from the OSO-1 high resolution ultraviolet spectrometer experiment

Period	Obligations	
06/26/75-06/30/80	FY79: $348,091	TOTAL: $1,865,338
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barth, C. A.	GSFC/Gemmell, J. D.	31-Atmos Sci

NAS 5-22833 **University of Colorado - Boulder** **1744**
Theoretical calculations of spectral features in the expanding envelopes of early-type stars

Period	Obligations	
11/03/75-07/01/80	FY79: $16,600	TOTAL: $83,380
Prin Invest	*NASA Tech Officer*	*CASE Category*
Conti, P. S.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23274 **University of Colorado - Boulder** **1745**
Development of models for physical properties of stellar chromospheres

Period	Obligations	
08/01/73-09/30/80	FY79: $40,225	TOTAL: $129,753
Prin Invest	*NASA Tech Officer*	*CASE Category*
Linsky, J. L.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23808 **University of Colorado - Boulder** **1746**
AE-E backscatter ultraviolet experiment short term data reduction and analysis

Period	Obligations	
11/22/76-09/30/79	FY79:	TOTAL: $92,656
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stewart, A. I.	GSFC/Rice, C. F.	31-Atmos Sci
	GSFC/Kupperian, J. E., Jr.	

NAS 5-25887 **University of Colorado - Boulder** **1747**
Nutation and polar motion of the earth LAGEOS number three

Period	Obligations	
09/25/79-12/24/80	FY79: $26,745	TOTAL: $26,745
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, M. L.	GSFC/Stephanides, C. C.	31-Atmos Sci

NAS 8-31958 **University of Colorado - Boulder** **1748**
Study of geophysical fluid dynamics with electro-hydrodynamics polarization forces

Period	Obligations	
03/26/76-08/31/81	FY79: $65,000	TOTAL: $230,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Toomre, D. J.	MSFC/Jones, C. T.	39-Env Sci, NEC
Hart, J. F.	MSFC/Smith, J. M.	

NAS 8-33084 **University of Colorado - Boulder** **1749**
A study of stellar coronae using the HEAO-A spacecraft

Period	Obligations	
06/16/78-06/15/79	FY79:	TOTAL: $9,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Linsky, J. L.	MSFC/Dailey, C. C.	11-Astronomy
Ayres, T. R.		

NAS 8-33333 **University of Colorado - Boulder** **1750**
A coordinated X-ray, optical and microwave study of the flare stars Proxima Centauri, YZ Canis Minoris and UV Ceti

Period	Obligations	
02/15/79-08/14/80	FY79: $5,440	TOTAL: $5,440
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haisch, B. M.	MSFC/Jones, J. B., Jr.	11-Astronomy
Linsky, J. L.		
Slee, O. B.		

NAS 8-33338 **University of Colorado - Boulder** **1751**
Soft X-ray spectroscopy of Hercules X-1

Period	Obligations	
02/16/79-02/15/80	FY79: $9,000	TOTAL: $9,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCray, R.	MSFC/Jones, J. B., Jr.	11-Astronomy
Boynton, P.		
Shull, J. M.		

NAS 8-33342 **University of Colorado - Boulder** **1752**
A coordinated X-ray and ultraviolet study of stellar coronae, transition regions and chromospheres

Period	Obligations	
02/16/79-02/15/80	FY79: $6,560	TOTAL: $6,560
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ayres, T. R.	MSFC/Jones, J. B., Jr.	11-Astronomy
Linsky, J. L.		

NASW 3103 **University of Colorado - Boulder** **1753**
Earth dynamics summer workshop on the application of space techniques to geodynamics

Period	Obligations	
09/27/77-12/01/77	FY79:	TOTAL: $18,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wyss, M.	HQ-ER/Murphy, J. P.	32-Geological Sci
Smith, M. L.		

NGL 06-003-052 **University of Colorado - Boulder** **1754**
Theoretical and experimental research program in physics of planetary atmospheres

Period	Obligations	
06/28/66-06/30/80	FY79:	TOTAL: $4,248,467
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barth, C. A.	HQ-SL/Brunk, W. E.	31-Atmos Sci
	HQ-SL/Quaide, W. L.	

NGL 06-003-057 **University of Colorado - Boulder** **1755**
Basic research in solar physics

Period	Obligations	
09/05/67-09/30/79	FY79: $70,000	TOTAL: $1,063,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Linsky, J. L.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 06-003-200 **University of Colorado - Boulder** **1756**
Application of space technology to practical problems such as those currently facing the mountain sections of the State of Colorado

Period	Obligations	
07/11/72-04/30/82	FY79: $100,000	TOTAL: $825,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ives, J. D.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 06-003-127 **University of Colorado - Boulder** **1757**
Data reduction-coordinated experiments

Period	Obligations	
08/18/69-09/30/80	FY79:	TOTAL: $996,906
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barth, C. A.	HQ-SL/Murphy, R. E. HQ-ET/Boyce, J. M.	31-Atmos Sci

NGR 06-003-176 **University of Colorado - Boulder** **1758**
Rocket research program in stellar ultraviolet astronomy

Period	Obligations	
12/29/71-06/30/79	FY79:	TOTAL: $353,246
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lillie, C. F.	GSFC/Bissell, E. E. HQ-SC/Rosendhal, J. D.	11-Astronomy

NGR 06-003-179 **University of Colorado - Boulder** **1759**
OAO-II data analysis program

Period	Obligations	
06/07/71-09/30/78	FY79:	TOTAL: $55,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lillie, C. F.	HQ-SC/Roman, N. G.	11-Astronomy

NSG 1489 **University of Colorado - Boulder** **1760**
Research in models covering microprocessor arrays for finite element structural analysis

Period	Obligations	
01/15/78-01/15/80	FY79: $70,000	TOTAL: $124,485
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jordan, H. .	LARC/Loendorf, D. D.	49-Engr, NEC

NSG 1638 **University of Colorado - Boulder** **1761**
Flight software requirements and design support system

Period	Obligations	
07/18/79-01/17/80	FY79: $20,987	TOTAL: $20,987
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riddle, W. E.	LARC/Senn, E. H.	41-Aero Engr
Osterweil, L. J.	LARC/Voigt, S. J.	

NSG 2248 **University of Colorado - Boulder** **1762**
Heterogeneous chemistry: Association reactions, cluster formation, and surface phenomena

Period	Obligations	
07/01/77-06/30/80	FY79: $52,000	TOTAL: $130,595
Prin Invest	*NASA Tech Officer*	*CASE Category*
Castleman, A. W.	ARC/Whitten, R. C.	12-Chemistry

NSG 3181 **University of Colorado - Boulder** **1763**
Effect of contraction on turbulence

Period	Obligations	
01/16/78-03/20/80	FY79: $40,000	TOTAL: $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Uberoi, M. S.	LERC/Groeneweg, J. F.	41-Aero Engr

NSG 5103 **University of Colorado - Boulder** **1764**
Rocket research in the ultraviolet airglow and aurora of planetary atmospheres

Period	Obligations	
02/01/76-03/31/80	FY79: $199,825	TOTAL: $749,811
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barth, C. A.	GSFC/Bissell, E. E. HQ-SL/Murphy, R. E.	19-Phys Sci, NEC

NSG 5153 **University of Colorado - Boulder** **1765**
Research of observed and theoretical variations of atmospheric ozone

Period	Obligations	
01/17/77-01/31/80	FY79: $70,280	TOTAL: $206,165
Prin Invest	*NASA Tech Officer*	*CASE Category*
London, J.	GSFC/Reber, C. A.	31-Atmos Sci

NSG 5178 **University of Colorado - Boulder** **1766**
Rocket research in solar ultraviolet spectroscopy

Period	Obligations	
06/01/77-12/10/79	FY79: $148,113	TOTAL: $388,590
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rottman, G. T. Chipman, E. G. Orrall, F. Q.	GSFC/Bissell, E. E. HQ-ST/Bohlin, J. D.	13-Physics

NSG 5211 **University of Colorado - Boulder** **1767**
A study of the flare star Proxima Centauri

Period	Obligations	
10/01/77-09/30/78	FY79:	TOTAL: $1,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Linsky, J. L.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5246 **University of Colorado - Boulder** **1768**
Analysis of ultraviolet spectrometric data from Copernicus

Period	Obligations	
03/01/78-02/28/79	FY79:	TOTAL: $13,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5300 **University of Colorado - Boulder** **1769**
Research of stellar wind velocity in alpha cam using ultraviolet data from the International Ultraviolet Explorer (IUE)

Period	Obligations	
09/15/78-10/31/79	FY79: $4,000	TOTAL: $9,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	GSFC/Boggess, A.	11-Astronomy

NSG 5303 **University of Colorado - Boulder** **1770**
Ultraviolet measurements with high spectral resolution

Period	Obligations	
09/15/78-09/14/80	FY79: $259,809	TOTAL: $260,436
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	GSFC/Bissell, E. E.	11-Astronomy
McClintock, W. E.	HQ-SC/Rosendhal, J. D.	

NSG 5318 **University of Colorado - Boulder** **1771**
Supergranulation velocity fields and their relation to magnetically active regions

Period	Obligations	
01/15/79-01/14/80	FY79: $4,561	TOTAL: $4,561
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gebbie, K. B.	GSFC/Donley, J. L.	31-Atmos Sci
Toomre, D. J.		
Simon, G. W.		

NSG 5355 **University of Colorado - Boulder** **1772**
Analysis of interstellar and circumstellar absorption line profiles

Period	Obligations	
06/01/79-05/31/80	FY79: $14,605	TOTAL: $14,605
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5365 **University of Colorado - Boulder** **1773**
Studies for atomic intersystem lines in interstellar gas and stellar winds

Period	Obligations	
06/01/79-05/31/80	FY79: $3,580	TOTAL: $3,580
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shull, J. M.	GSFC/Boggess, A.	11-Astronomy

NSG 5372 **University of Colorado - Boulder** **1774**
Theoretical studies of odd nitrogen in the mesosphere and lower thermosphere

Period	Obligations	
06/01/79-02/29/80	FY79: $28,000	TOTAL: $28,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rusch, D. W.	GSFC/Reed, E. I.	31-Atmos Sci

NSG 7128 **University of Colorado - Boulder** **1775**
Studies of X-ray ultraviolet and optical emission from galactic X-ray sources

Period	Obligations	
03/01/75-05/31/80	FY79: $76,000	TOTAL: $139,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCray, R.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 7130 **University of Colorado - Boulder** **1776**
OSO-I guest investigator program

Period	Obligations	
04/01/75-09/30/79	FY79: $10,000	TOTAL: $166,286
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hansen, E. R.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7165 **University of Colorado - Boulder** **1777**
Theoretical studies of the solar corona and chromosphere

Period	Obligations	
07/01/75-09/30/79	FY79:	TOTAL: $128,987
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chipman, E. G.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7231 **University of Colorado - Boulder** **1778**
A rocket program to measure minor neutral species in the earth's atmosphere from 30 km to 110 km

Period	Obligations	
04/01/76-08/31/79	FY79: $99,999	TOTAL: $300,006
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thomas, R. J.	HQ-ST/Kakar, R. K.	31-Atmos Sci
	HQ-ST/Tilford, S. G.	

NSG 7287 **University of Colorado - Boulder** **1779**
Study of the solar corona using radio observation

Period	Obligations	
07/01/76-09/30/79	FY79: $48,000	TOTAL: $92,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dulk, G. A.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7291 **University of Colorado - Boulder** **1780**
Research in solar physics with emphasis on empirical non-equilibrium thermodynamics

Period	Obligations	
09/01/76-12/31/79	FY79: $26,000	TOTAL: $76,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thomas, R. N.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7319 **University of Colorado - Boulder** **1781**
Nutation and polar motion of the earth

Period	Obligations	
03/01/77-09/30/79	FY79	TOTAL: $84,610
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, M. L.	HQ-SL/Flinn, E. A.	32-Geological Sci

NSG 7344 **University of Colorado - Boulder** **1782**
Construction of a three-wavelength electromagnetic distance-measuring system

Period	Obligations	
05/01/77-04/30/79	FY79:	TOTAL: $100,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Levine, J.	HQ-SL/Strickland, A. T.	13-Physics

NSG 7430 **University of Colorado - Boulder** **1783**
Theoretical calculations of spectral features in the expanding envelopes of early-type stars

Period	Obligations	
03/01/78-02/29/80	FY79:	TOTAL: $21,646
Prin Invest	*NASA Tech Officer*	*CASE Category*
Conti, P. S.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7459 **University of Colorado - Boulder** **1784**
Development and test of multi-anode microchannel array detector system

Period	Obligations	
06/01/78-05/30/80	FY79: $291,515	TOTAL: $497,659
Prin Invest	*NASA Tech Officer*	*CASE Category*
Timothy, J. G.	HQ-SC/Roman, N. G. HQ-SC/Weiler, E. J.	13-Physics

NSG 7460 **University of Colorado - Boulder** **1785**
Basic research in stellar & solar physics

Period	Obligations	
06/21/78-06/20/79	FY79:	TOTAL: $14,760
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thomas, R.	HQ-SC/Rosendhal, J. D.	13-Physics

NSG 7477 **University of Colorado - Boulder** **1786**
High-resolution spectrophotometric observations of interstellar absorption lines

Period	Obligations	
07/01/78-06/31/79	FY79:	TOTAL: $24,413
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7507 **University of Colorado - Boulder** **1787**
X-ray emission, electron acceleration, and related flare problems

Period	Obligations	
10/01/78-09/30/79	FY79: $45,000	TOTAL: $45,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, D. F.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7511 **University of Colorado - Boulder** **1788**
Basic research in solar physics. Energy transport in the solar envelope and atmosphere

Period	Obligations	
10/01/78-09/30/79	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gebbie, K. B.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7559 **University of Colorado - Boulder** **1789**
Measurement of solar spectral irradiances at wavelengths between 40 and 3100 angstroms

Period	Obligations	
03/01/79-12/31/79	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Timothy, J. G.	HQ-ST/Kakar, R. K. HQ-ST/Seals, R. K., Jr.	31-Atmos Sci

NSG 7584 **University of Colorado - Boulder** **1790**
Mechanisms of deformation and failure appropriate to lunar conditions

Period	Obligations	
05/01/79-01/31/80	FY79: $75,000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spetzler, H. A.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7626 **University of Colorado - Boulder** **1791**
High resolution spectrophotometric observations of interstellar absorption lines

Period	Obligations	
08/01/79-07/31/80	FY79: $25,909	TOTAL: $25,909
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snow, T. P., Jr.	HQ-SC/Weiler, E. J. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7637 **University of Colorado - Boulder** **1792**
Accuracy of gravitational physics tests using ranges to the inner planets

Period	Obligations	
08/01/79-07/31/80	FY79: $17,302	TOTAL: $17,302
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ashby, N.	HQ-SL/Roman, N. G. HQ-SL/Weiler, E. J.	11-Astronomy

NSG 9036 **University of Colorado - Boulder** **1793**
Correlation of strength with gravity and velocity in lunar rock under simulated conditions

Period	Obligations	
11/01/75-09/30/79	FY79: $25,000	TOTAL: $289,464
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spetzler, H. A.	JSC/Harris, J. W.	32-Geological Sci

NAS 1-15775 **University of Colorado - Denver** **1794**
Perform computation of postbuckling loads and deflections in shell structures

Period	Obligations	
04/16/79-05/30/80	FY79: $19,880	TOTAL: $19,880
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thurston, G. A.	LARC/Housner, J. M. LARC/Anderson, M. S.	41-Aero Engr

NSG 5394 **University of Colorado - Denver** **1795**
International ultraviolet experiment observations of Mars

Period	Obligations	
07/01/79-06/30/80	FY79: $7,600	TOTAL: $7,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lane, A. L.	GSFC/Boggess, A.	11-Astronomy

NAS 1-14929 **University of Denver** **1796**
Stratospheric aerosol and gas experiment

Period	Obligations	
07/18/77-09/30/79	FY79: $20,000	TOTAL: $65,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Murcray, D. G.	LARC/McMaster, L. R. LARC/McCormick, M. P.	31-Atmos Sci

NAS 2-10158 **University of Denver** **1797**
Airborne measurements of minor gas constituents of the stratosphere

Period	Obligations	
02/01/79-01/31/82	FY79: $143,700	TOTAL: $143,700

Prin Invest	NASA Tech Officer	CASE Category
Murcray, D. G.	ARC/Munoz, R. M.	31-Atmos Sci
Goldman, A.	ARC/Margozzi, A. P.	
Williams, W. J.		

NAS 5-25097 **University of Denver** **1798**
Stratospheric molecular spectral parameter study

Period	Obligations	
06/21/78-06/20/80	FY79: $21,965	TOTAL: $46,965

Prin Invest	NASA Tech Officer	CASE Category
Goldman, A.	GSFC/Kunde, V. G.	31-Atmos Sci

NAS 5-25862 **University of Denver** **1799**
Measurement of X-rays in the mesosphere

Period	Obligations	
09/19/79-03/02/81	FY79: $23,895	TOTAL: $23,895

Prin Invest	NASA Tech Officer	CASE Category
Barcus, J.	GSFC/Goldberg, R.	13-Physics
Sutton, J.		

NAS 9-15469 **University of Denver** **1800**
Operational bioinstrumentation system

Period	Obligations	
01/01/78-01/01/80	FY79: $19,913	TOTAL: $221,390

Prin Invest	NASA Tech Officer	CASE Category
Venditti, F. P.	JSC/[illegible]czkowski, S. M.	46-Mech Engr

NASW 3113 **University of Denver** **1801**
Collection and analysis of information relating to technology transfer and application

Period	Obligations	
02/01/78-04/30/79	FY79: $105,000	TOTAL: $430,000

Prin Invest	NASA Tech Officer	CASE Category
Johnson, F. D.	HQ-ET/Ault, L. A.	99-Multi-Discip

NCA 2-205901 **University of Denver** **1802**
Spectroscopy of minor constituents in the earth's stratosphere

Period	Obligations	
03/01/79-02/29/80	FY79: $6,270	TOTAL: $6,270

Prin Invest	NASA Tech Officer	CASE Category
Bonomo, F.	ARC/Valero, F. P.	12-Chemistry

NSG 1405 **University of Denver** **1803**
Theoretical simulations of solar spectra in the middle ultraviolet and visible for atmospheric trace constituents measurements

Period	Obligations	
03/15/77-05/14/80	FY79: $36,494	TOTAL: $114,517

Prin Invest	NASA Tech Officer	CASE Category
Goldman, A.	LARC/Goad, J. H., Jr.	31-Atmos Sci
Murcray, D. G.	LARC/McCormick, M. P.	

NSG 1432 **University of Denver** **1804**
Ground monitoring of atmospheric constituents by high resolution infrared solar spectroscopy

Period	Obligations	
07/11/77-11/10/79	FY79:	TOTAL: $159,874

Prin Invest	NASA Tech Officer	CASE Category
Murcray, D. G.	LARC/Orr, H. D., III	39-Env Sci, NEC
	LARC/Russell, J. M., III	

NSG 1439 **University of Denver** **1805**
An attempt to measure stratospheric constituents by means of solar occultation measurements in region 0.300um-0.310um

Period	Obligations	
07/21/77-07/20/79	FY79:	TOTAL. $35,452

Prin Invest	NASA Tech Officer	CASE Category
Murcray, D. G.	LARC/McCormick, M. P.	31-Atmos Sci
	LARC/Goad, J. H., Jr.	

NSG 1557 **University of Denver** **1806**
Balloon-borne spectrometer measurements of UV-visible solar limb extinction

Period	Obligations	
08/15/78-11/14/79	FY79:	TOTAL: $20,018

Prin Invest	NASA Tech Officer	CASE Category
Murcray, D. G.	LARC/Goad, J. H., Jr.	31-Atmos Sci
Goldman, A.		
Williams, W. J.		

NSG 5135 **University of Denver** **1807**
Research of ultraviolet light and spectrum variations of twelve and sixteen lacertae

Period	Obligations	
11/15/76-11/14/77	FY79:	TOTAL: $9,908

Prin Invest	NASA Tech Officer	CASE Category
Everhart, E.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5367 **University of Denver** **1808**
Velocity fields and spectrum peculiarities in Beta Cephei stars

Period	Obligations	
06/01/79-05/31/80	FY79: $16,100	TOTAL: $16,100

Prin Invest	NASA Tech Officer	CASE Category
Lesh, J. R.	GSFC/Boggess, A.	11-Astronomy

NSG 7271 **University of Denver** **1809**
An investigation of the variability in the stratospheric dust layer as related to the Fuego volcanic event

Period	Obligations	
09/01/76-09/30/79	FY79:	TOTAL: $94,094

Prin Invest	NASA Tech Officer	CASE Category
Murcray, D. G.	HQ-ST/Kakar, R. K	31-Atmos Sci
	HQ-ST/Tilford, S. G.	

COLORADO (Continued)

NSG 806 **University of Southern Colorado** **1810**
Environmental stress cracking of polymers
Period 10/01/76-02/16/80 *Obligations* FY79: TOTAL: $47,863
Prin Invest Mahan, K. I. *NASA Tech Officer* KSC/Bryan, C. J. *CASE Category* 12-Chemistry

NSG 2048 **University of Southern Colorado** **1811**
Technology research for strapdown inertial experiments
Period 09/15/74-10/31/79 *Obligations* FY79: $49,900 TOTAL: $310,399
Prin Invest Jenkins, R.
Carestia, R. A. *NASA Tech Officer* ARC/Hruby, R. J. *CASE Category* 41-Aero Engr

NSG 9051 **University of Southern Colorado** **1812**
Electron microprobe study of lunar and planetary zoned plagioclase feldspars
Period 02/01/77-03/31/80 *Obligations* FY79: $25,441 TOTAL: $76,529
Prin Invest Smith, R. K. *NASA Tech Officer* JSC/Lofgren, G. *CASE Category* 19-Phys Sci, NEC

CONNECTICUT

NCC 5 6 **Fairfield University** **1813**
Measurement of hydroxyl temperature in the upper atmosphere
Period 09/01/79-03/31/80 *Obligations* FY79: $8,000 TOTAL: $8,000
Prin Invest McElaney, J. H. *NASA Tech Officer* GSFC/Heath, D. F. *CASE Category* 31-Atmos Sci

NGR 07-010-002 **Fairfield University** **1814**
Investigation of energy deposition processes in the upper atmosphere, and the interaction between the mesosphere and the thermosphere
Period 04/24/68-03/31/79 *Obligations* FY79: TOTAL: $64,431
Prin Invest McElaney, J. H.
Khadgavi, A. *NASA Tech Officer* GSFC/Heath, D. F. *CASE Category* 31-Atmos Sci

NASW 3191 **University of Connecticut** **1815**
Operation of an industrial applications center
Period 01/01/78-12/31/79 *Obligations* FY79: $354,762 TOTAL: $724,762
Prin Invest Unavailable *NASA Tech Officer* HQ-ET/Bivins, R. J. *CASE Category* 99-Multi-Discip

NSG 3238 **University of Connecticut** **1816**
Turbine endwall two-cylinder program
Period 01/02/79-01/01/82 *Obligations* FY79: $99,410 TOTAL: $99,410
Prin Invest Langston, L. S. *NASA Tech Officer* LERC/Goldman, L. J. *CASE Category* 46-Mech Engr

NSG 5075 **University of Connecticut** **1817**
Modeling the terrestrial hydrology of the global atmosphere
Period 08/17/75-02/29/80 *Obligations* FY79: $66,052 TOTAL: $217,860
Prin Invest Cooper, A. R.
Lin, J. D. *NASA Tech Officer* GSFC/Halem, M. *CASE Category* 31-Atmos Sci

NSG 5346 **University of Connecticut** **1818**
Hydro-meteorological modeling of soil moisture and interactive moisture transport processes
Period 05/01/79-04/30/80 *Obligations* FY79: $40,340 TOTAL: $40,340
Prin Invest Lin, J. D.
Bock, P. *NASA Tech Officer* GSFC/Halem, M. *CASE Category* 31-Atmos Sci

NSG 7450 **University of Connecticut** **1819**
Factors affecting assimilatory nitrate reduction by prokaryotes
Period 06/01/78-06/30/80 *Obligations* FY79: $37,862 TOTAL: $72,251
Prin Invest Leadbetter, E. R. *NASA Tech Officer* HQ-SB/Young, R. S. *CASE Category* 51-Biological Sci

NAS 2-10338 **Yale University** **1820**
Cosmos 1979 experiment: Bone modeling/remodeling in the rat mandible
Period 09/01/79-08/31/80 *Obligations* FY79: $5,000 TOTAL: $5,000
Prin Invest Baron, R. *NASA Tech Officer* ARC/Souza, K. A.
ARC/Heinrich, M. R. *CASE Category* 56-Medical Science

NAS 8-33572 **Yale University** **1821**
Experimental test for violations of the equivalence principle by weak interactions
Period 09/05/79-03/04/80 *Obligations* FY79: $7,849 TOTAL: $7,849
Prin Invest Parker, P. D. *NASA Tech Officer* MSFC/Eby, P. B. *CASE Category* 11-Astronomy

NGL 07-004-005 **Yale University** **1822**
Low-power, low-speed data storage and processing equipment
Period 01/01/71-11/30/81 *Obligations* FY79: $60,120 TOTAL: $896,619
Prin Invest Barker, R. C. *NASA Tech Officer* GSFC/Pritchard, J. A. *CASE Category* 45-Elec Engr

NGL 07-004-043 **Yale University** **1823**
Chemical reactions in the electron-volt region
Period 10/26/65-09/30/79 *Obligations* FY79: $4,000 TOTAL: $501,744
Prin Invest Cross, R. J., Jr. *NASA Tech Officer* HQ-SL/Murphy, R. E.
HQ-SL/Brunk, W. E. *CASE Category* 31-Atmos Sci

CONNECTICUT (Continued)

NSG 1612 **Yale University** **1824**
Study of experiments on condensation of nitrogen by homogeneous nucleation at states modeling those of the national transonic facility

Period	Obligations	
05/15/79-02/14/80	FY79: $13,000	TOTAL: $13,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wegener, P. P.	LARC/Hall, R. M.	41-Aero Engr

NSG 2185 **Yale University** **1825**
Early detection of acute respiratory infections

Period	Obligations	
10/01/76-11/30/79	FY79: $30,000	TOTAL: $95,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Evans, A. S.	ARC/Mandel, A.D.	56-Medical Sciences
Kraus, G.		

NSG 3107 **Yale University** **1826**
Deposition of condensible impurities on surfaces immersed in hot gases

Period	Obligations	
07/15/76-07/14/80	FY79: $30,000	TOTAL: $119,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosner, D. E.	LERC/Fryburg, G. C.	47-Materials Engr
	LERC/Kohl, F. J.	

NSG 3169 **Yale University** **1827**
Experimentation studies of the formation/deposition of sodium sulfate in/from combustion gases

Period	Obligations	
11/15/77-11/15/79	FY79:	TOTAL: $94,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosner, D. E.	LERC/Fryburg, G. C.	12-Chemistry
	LERC/Kohl, F. J.	

NSG 7290 **Yale University** **1828**
Membranes and circadian rhythms in plants

Period	Obligations	
10/01/76-09/30/79	FY79: $50,000	TOTAL: $139,420
Prin Invest	*NASA Tech Officer*	*CASE Category*
Galston, A. W.	HQ-SB/Halstead, T.W	51-Biological Sci
	HQ-SB/Geib, D. S.	

DELAWARE

NAS 6-2820 **University of Delaware** **1829**
Measurement of ocean surface microstructure in a wind generated wave field

Period	Obligations	
03/28/77-11/27/78	FY79:	TOTAL: $13,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, J.	WFC/Huang, N. E.	33-Oceanography
	WFC/Parson, C L.	

NSG 1304 **University of Delaware** **1830**
Damage repair technology in composite materials

Period	Obligations	
05/01/76-04/30/80	FY79: $64,681	TOTAL: $221,656
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pipes, R. B.	LARC/Deaton, J. W.	46-Mech Engr
Wilson, D. W.	LARC/Hoffman, E. L.	

NSG 1409 **University of Delaware** **1831**
Elevated temperature bolted joint test technology in composite materials

Period	Obligations	
04/01/77-05/31/80	FY79: $43,176	TOTAL: $115,040
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pipes, R. B.	LARC/Garcia, R.	42-Astro Engr
Wilson, D. W.	LARC/Cooper, P. A.	

NSG 1433 **University of Delaware** **1832**
Satellite surveillance of coastal environment and monitoring of sludge dump sites

Period	Obligations	
09/01/77-07/31/79	FY79:	TOTAL: $19,892
Prin Invest	*NASA Tech Officer*	*CASE Category*
Klemas, V.	LARC/Bowker, D. E.	39-Env Sci, NEC
Philpot, W.	LARC/Pearson, A. O.	

NSG 1488 **University of Delaware** **1833**
Structural optimization of hat-stiffened panels of composite materials subjected to thermal and in-plane mechanical loads

Period	Obligations	
02/01/78-06/30/79	FY79:	TOTAL: $25,680
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vinson, J. R.	LARC/McWithey, R. R.	42-Astro Engr
	LARC/Cooper, P. A.	

NSG 1513 **University of Delaware** **1834**
Investigation of a vortex model of the turbulent boundary la er burst phenomena

Period	Obligations	
04/01/78-09/30/79	FY79:	TOTAL $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Danberg, J. E.	LARC/Bushnell, D. M.	41-Aero Engr
	LARC/Cary, A. M., Jr.	

NSG 3184 **University of Delaware** **1835**
Heat storage in alloy transformation

Period	Obligations	
07/01/78-08/31/80	FY79: $92,711	TOTAL. $183,783
Prin Invest	*NASA Tech Officer*	*CASE Category*
Birchenall, C. E.	LERC/Vernon, R. W.	47-Materials Engr
Harrison, A. J.		

NSG 3189 **University of Delaware** **1836**
Inlet flow distortion in turbomachinery

Period	Obligations	
04/01/78-11/31/78	FY79:	TOTAL: $25,154
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seidel, B. S.	LERC/Adamczyk, J J	41-Aero Engr

DELAWARE (Continued)

NSG 3270 **University of Delaware** 1837
Effects of distorted inflow entering a fan in a tilt nacelle

Period	Obligations	
05/01/79-05/01/80	FY79: $29,547	TOTAL: $29,547
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Seidel, B. S.	LERC/Farrell, C. A., Jr. LERC/Adamczyk, J. J.	41-Aero Engr

NSG 5144 **University of Delaware** 1838
Ultraviolet studies of heavy-element abundances in stars

Period	Obligations	
12/01/76-11/30/79	FY79:	TOTAL: $1,900
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Shipman, H. L.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

DISTRICT OF COLUMBIA

NGR 09-005-063 **The Catholic University of America** 1839
Interaction of the solar wind with the moon

Period	Obligations	
04/15/69-05/31/80	FY79: $33,000	TOTAL: $267,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whang, Y. C.	HQ-ST/Wiskerchen, M. J. HQ-ST/Schmerling, E. R.	13-Physics

NSG 5066 **The Catholic University of America** 1840
Research of solar hard X-rays and gamma-rays

Period	Obligations	
05/01/75-06/30/80	FY79: $15,181	TOTAL: $88,594
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Werntz, C.	GSFC/Dennis, B. R.	13-Physics

NSG 5111 **The Catholic University of America** 1841
Research of properties of material in the submillimeter wave region

Period	Obligations	
09/01/76-08/31/80	FY79:	TOTAL: $70,647
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kelley, G. L. Meister, R.	GSFC/McAvoy, N. GSFC/McElroy, J. H.	13-Physics

NSG 5173 **The Catholic University of America** 1842
Atom-molecule reactions of chemical importance in the stratosphere

Period	Obligations	
06/01/77-05/31/80	FY79: $56,210	TOTAL: $124,186
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hunt, J. B. Michael, J. V.	GSFC/Payne, W. A.	12-Chemistry

NSG 7422 **The Catholic University of America** 1843
Expansion of the solar wind from coronal holes

Period	Obligations	
04/01/78-03/31/80	FY79: $40,000	TOTAL: $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whang, Y. C.	HQ-ST/Bohlin, J. D.	13-Physics

NAS 1-14605 **George Washington University** 1844
Experimental and analytical engineering and applied science support of Langley Research Center programs

Period	Obligations	
09/02/76-09/01/81	FY79: $43,805	TOTAL: $173,133
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H. Whitesides, J. L.	LARC/Duberg, J. E. LARC/Erickson, W. D.	41-Aero Engr

NAS 5-24431 **George Washington University** 1845
Concatenated coding system

Period	Obligations	
02/22/78-08/31/79	FY79:	TOTAL: $21,658
Prin Invest	*NASA Tech Officer*	*CASE Category*
Helgert, H. J.	GSFC/Rende, J. V. GSFC/Laios, S. C.	45-Elec Engr

NASW 3165 **George Washington University** 1846
Scientific communication in planetary biology and bioscience

Period	Obligations	
04/17/78-06/15/80	FY79: $49,900	TOTAL: $97,977
Prin Invest	*NASA Tech Officer*	*CASE Category*
Waters, E.	HQ-SB/Halstead, T. W.	59-Life Sci, NEC

NCC 1 1 **George Washington University** 1847
Data reduction techniques for a Pressure Modulator Radiometer (PMR)

Period	Obligations	
04/01/79-03/31/80	FY79: $52,952	TOTAL: $52,952
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H. Barkstrom, B. R.	LARC/Parr, H. D., III LARC/Teichle, H. G., Jr.	31-Atmos Sci

NCC 1 14 **George Washington University** 1848
Aeroacoustics research program in Joint Institute for Advancement of Flight Services (JIAFS)

Period	Obligations	
05/15/79-05/14/80	FY79: $89,211	TOTAL: $89,211
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Margeolis, K.	41-Aero Engr

NCC 1 19 **George Washington University** 1849
A research program in atmospheric science

Period	Obligations	
07/01/79-05/31/80	FY79: $93,095	TOTAL: $93,095
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Callis, L. B., Jr. LARC/Tolson, R. H.	31-Atmos Sci

NCC 1 24 **George Washington University** **1850**
Programs of research in flight sciences

Period	Obligations	
08/15/79-08/14/80	FY79: $118,791	TOTAL: $118,791

Prin. Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Bobbitt, P. J.	41-Aero Engr
	LARC/Pierpont, P. K.	

NCC 1 27 **George Washington University** **1851**
Cooperative graduate program in the flight sciences

Period	Obligations	
08/15/79-08/14/80	FY79: $53,319	TOTAL: $53,319

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Erickson, W. D.	41-Aero Engr

NGL 09-010-053 **George Washington University** **1852**
Research in space-related areas in engineering and applied science

Period	Obligations	
12/18/68-08/31/79	FY79:	TOTAL: $1,150,000

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Duberg, J. E.	49-Engr, NEC
	LARC/Erickson, W. D.	

NGR 09-010-074 **George Washington University** **1853**
Programs of research in flight sciences

Period	Obligations	
04/01/71-07/31/80	FY79:	TOTAL: $1,187,084

Prin. Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Bobbitt, P. J.	41-Aero Engr
	LARC/Mulac, R. W.	

NGR 09-010-078 **George Washington University** **1854**
Research programs in structures and dynamics

Period	Obligations	
01/06/72-11/30/79	FY79: $171,000	TOTAL: $1,302,423

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Anderson, R. A.	41-Aero Engr
	LARC/McComb, H. G., Jr.	

NGR 09-010-085 **George Washington University** **1855**
Aircraft noise reduction research

Period	Obligations	
02/21/73-12/31/79	FY79: $119,222	TOTAL: $690,128

Prin Invest	NASA Tech. Officer	CASE Category
Liebowitz, H.	LARC/Margeolis, K.	41-Aero Engr
	LARC/Morgan, H. G.	

NGR 09-010-096 **George Washington University** **1856**
Research program in microwave remote sensing

Period	Obligations	
09/01/73-11/30/79	FY79: $8,584	TOTAL: $174,639

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Croswell, W. F.	45-Elec Engr
	LARC/Schrader, J. H.	

NSG 1026 **George Washington University** **1857**
A graduate research program in environmental modeling

Period	Obligations	
03/21/74-12/31/79	FY79: $81,584	TOTAL: $629,374

Prin Invest	NASA Tech Officer	CASE Category
Rogerson, A. C.	LARC/Callis, L. B., Jr.	31-Atmos Sci
Brown, N. B., Jr.	LARC/Tolson, R. H.	

NSG 1110 **George Washington University** **1858**
Antenna and wave propagation applied to avionics systems

Period	Obligations	
10/01/74-12/31/79	FY79: $10,463	TOTAL: $159,194

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Croswell, W. F.	45-Elec Engr
	LARC/Gilreath, M. C.	

NSG 1155 **George Washington University** **1859**
Studies related to materials flight sciences

Period	Obligations	
03/03/75-12/31/79	FY79: $146,309	TOTAL: $638,433

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Swann, R. T.	47-Materials Engr
Esterling, D. M.		

NSG 1161 **George Washington University** **1860**
Research in flight dynamics

Period	Obligations	
06/01/75-11/30/79	FY79: $44,996	TOTAL: $169,981

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Suit, W. T.	41-Aero Engr
	LARC/Queijo, M. J.	

NSG 1216 **George Washington University** **1861**
Research in atmospheric science

Period	Obligations	
09/01/75-06/15/79	FY79:	TOTAL: $151,585

Prin Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Callis, L. B., Jr.	31-Atmos Sci

NSG 1251 **George Washington University** **1862**
Severe storms research

Period	Obligations	
10/01/75-12/31/79	FY79:	TOTAL: $138,512

Prin Invest	NASA Tech Officer	CASE Category
Rogerson, A. C	LARC/Costen, R. C.	31-Atmos Sci
Brown, N. B., Jr.	LARC/Young, G. R.	

NSG 1289 **George Washington University** **1863**
Research program in improved fracture toughness determination for aircraft structural materials

Period	Obligations	
03/01/76-12/31/80	FY79: $69,486	TOTAL: $214,464

Prin. Invest	NASA Tech Officer	CASE Category
Liebowitz, H.	LARC/Roderick, G. L.	
Jones, D. L.		47-Materials Engr
	LARC/Whitcomb, J. D.	

NSG 1449 **George Washington University** **1864**
Analysis of three-dimensional stresses near fastener holes in laminated composites

Period	Obligations	
09/01/77-11/13/79	FY79:	TOTAL: $73,672
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Crews, J. H., Jr.	47-Materials Engr
	LARC/Everett, R. A., Jr.	

NSG 1474 **George Washington University** **1865**
Acoustic analysis of the propfan

Period	Obligations	
12/01/77-11/30/79	FY79: $38,237	TOTAL: $67,684
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Greene, G. C.	13-Physics
Fasassat, F.		

NSG 1508 **George Washington University** **1866**
Core graphics system for raster graphics displays

Period	Obligations	
03/15/78-03/31/80	FY79: $41,281	TOTAL: $59,011
Prin Invest	*NASA Tech Officer*	*CASE Category*
Foley, J. D.	LARC/Harris, J. L.	21-Mathematics

NSG 1555 **George Washington University** **1867**
Studies of radiative transfer in the earth's atmosphere with emphasis on the inference of the radiation budget

Period	Obligations	
08/01/78-07/31/80	FY79: $41,868	TOTAL: $64,931
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Smith, G. L.	31-Atmos Sci
Barkstrom, B. R.	LARC/Suttles, J. T.	

NSG 1556 **George Washington University** **1868**
Graphite fiber risk assessment

Period	Obligations	
08/04/78-06/30/80	FY79: $99,359	TOTAL: $198,418
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gross, D.	LARC/Elber, W.	21-Mathematics
Soland, R. M.	LARC/Huston, R. J.	
Miller, D. R.		

NSG 1585 **George Washington University** **1869**
Research program in laminar flow control

Period	Obligations	
11/15/78-11/14/79	FY79: $62,863	TOTAL: $62,863
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liebowitz, H.	LARC/Kemp, W. B., Jr.	41-Aero Engr
	LARC/Bobbitt, P. J.	

NSG 1604 **George Washington University** **1870**
Determination of load sequence effects on the degradation and failure of composite materials

Period	Obligations	
03/16/79-03/15/80	FY79: $49,997	TOTAL: $49,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yang, J. N.	LARC/O'Brien, T. K.	47-Materials Engr
Jones, D. L.	LARC/Roderick, G. L.	

NSG 3130 **George Washington University** **1871**
Videoconferencing for Congress: An experimental application of the communications technology satellite

Period	Obligations	
11/01/76-06/01/79	FY79:	TOTAL: $146,048
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wood, F. B.	LERC/Jackson, H. D.	99-Multi-Discip
Coates, V. T.		

NSG 5109 **George Washington University** **1872**
Decoding and performance of error correcting codes

Period	Obligations	
07/16/76-08/31/89	FY79: $29,960	TOTAL: $102,414
Prin Invest	*NASA Tech Officer*	*CASE Category*
Helgert, H. J.	GSFC/Morakis, J. C.	49-Engr, NEC

NSG 5288 **George Washington University** **1873**
Comparison of passive and active microwave remote sensing

Period	Obligations	
08/01/78-12/31/79	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lang, R. H.	GSFC/LeVine, D. M.	45-Elec Engr

NASW 3152 **Georgetown University** **1874**
Potential impacts of space utilization

Period	Obligations	
04/01/78-05/01/79	FY79:	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cheston, P. S.	HQ-MT/Puttkamer, J.	99-Multi-Discip

NAS 5-23799 **Howard University** **1875**
Quality assurance system in clinical practice settings

Period	Obligations	
12/07/76-02/07/80	FY79: $54,300	TOTAL: $89,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chang, P.	GSFC/Alterescu, S.	56-Medical Sciences
	KSC/Chang, P.	

NAS 5-24242 **Howard University** **1876**
Study of aerodynamics for sounding rockets

Period	Obligations	
07/01/77-09/01/80	FY79: $40,000	TOTAL: $117,877
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B.	GSFC/Barrowman, J. S.	41-Aero Engr
	GSFC/Mayo, E. E.	

NAS 5-24251 **Howard University** **1877**
Study of flexible body interaction

Period	Obligations	
08/08/77-04/08/80	FY79:	TOTAL: $19,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Choudhury, A. K.	GSFC/Hui, P. S.	49-Engr, NEC

NAS 5-24422 **Howard University** **1878**
Recorder tape guidance and drive mechanism analysis

Period	Obligations	
01/16/78-08/31/79	FY79:	TOTAL: $24,662
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bords, G.	GSFC/Hayes, J. M GSFC/Paroby, W.	46-Mech Engr

NAS 5-25185 **Howard University** **1879**
Study of tektites and other space related glasses

Period	Obligations	
08/17/78-01/17/80	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thorpe, A. M.	GSFC/O'Keefe, J. A.	39-Env Sci, NEC

NCA 5-29 **Howard University** **1880**
Goddard introduction to engineering careers

Period	Obligations	
06/01/78-06/30/80	FY79: $27,180	TOTAL: $27,180
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cox, E. L.	GSFC/Chapman, J. W.	49-Engr, NEC

NCA 5-91 **Howard University** **1881**
Prefreshmen and cooperative education program

Period	Obligations	
06/01/78-06/30/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cox, E. L.	GSFC/Chapman, J. W.	49-Engr, NEC

NGL 09-011-017 **Howard University** **1882**
Study of neurohumoral control systems operations in adjustment of ventricular performance

Period	Obligations	
04/25/68-01/14/81	FY79: $25,000	TOTAL: $967,398
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cothran, L. N.	ARC/Sandler, H.	56-Medical Sciences

NGL 09-011-046 **Howard University** **1883**
Investigation of radiation detectors for environmental trace elements

Period	Obligations	
04/25/72-03/31/78	FY79:	TOTAL: $33,131
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ferguson, G. A.	HQ-LU/Pohly, J. G.	39-Env Sci, NEC

NGR 09-011-057 **Howard University** **1884**
Electron spectroscopy

Period	Obligations	
04/01/74-04/30/80	FY79: $2,600	TOTAL: $34,840
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tsang, T.	GSFC/Nava, D. F.	13 Physics

NGT 09-011-060 **Howard University** **1885**
Summer faculty fellowship program in research

Period	Obligations	
01/01/78-03/31/79	FY79:	TOTAL: $139,450
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fan, D. N.	HQ-LU/Carter, C. H.	99-Multi-Discip

NSG 1320 **Howard University** **1886**
Graduate research program in advanced aerospace structures

Period	Obligations	
06/29/76-04/30/80	FY79: $48,500	TOTAL: $111,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jones, I. W.	LARC/Horner, G. C. LARC/Card, M. F.	42-Astro Engr

NSG 1414 **Howard University** **1887**
The dynamics and control of large flexible space structures

Period	Obligations	
05/16/77-05/15/80	FY79: $57,244	TOTAL: $142,676
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bainum, P. M. James, P. K. Reddy, A. S.	LARC/Hammer, H. A. LARC/Schy, A. A	49-Engr, NEC

NSG 5071 **Howard University** **1888**
Laser induced photoluminescence studies of primary photochemical production processes of cometary radicals

Period	Obligations	
08/01/75-03/31/80	FY79: $86,647	TOTAL: $231,625
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jackson, W. M.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E	12-Chemistry

NSG 5127 **Howard University** **1889**
Recognition and treatment of coronary heart attacks

Period	Obligations	
10/01/76-01/31/78	FY79:	TOTAL: $28,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fischmann, E. J	GSFC/Friedman, D. S. GSFC/Chen, W.	56-Medical Sciences

NSG 5158 **Howard University** **1890**
Research of microwave semiconductor devices

Period	Obligations	
02/01/77-01/31/80	FY79: $150,000	TOTAL: $449,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cooper, A. R. Bhar, T. N. Chawdhary, R.	GSFC/Alcorn, G. E. GSFC/Lamb, G. M.	13-Physics

NSG 5186 **Howard University** **1891**
Research in space sciences

Period	Obligations	
07/01/77-11/30/79	FY79:	TOTAL: $150,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wallace, W. J.	GSFC/O'Keefe, J. A.	13-Physics
Chung, D.		
Tsang, T.		

NSG 5268 **Howard University** **1892**
Characterization of low intensity X-ray imaging devices

Period	Obligations	
04/15/78-06/14/80	FY79: $25,015	TOTAL: $48,694
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ferguson, G. A.	GSFC/Yin, L. I.	56-Medical Sciences
	GSFC/Trombka, J. I.	

NSG 5295 **Howard University** **1893**
Test for diurnal rainfall variation using Nimbus 5 data

Period	Obligations	
08/01/78-01/31/80	FY79:	TOTAL: $45,826
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gill, T. L.	GSFC/Laughlin, C. R.	21-Mathematics

NSG 5336 **Howard University** **1894**
Low cost terminals using remotely generated cross-correlation references

Period	Obligations	
02/01/79-01/31/80	FY79: $57,606	TOTAL: $57,606
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sennott, J. W.	GSFC/Taylor, R. E.	45-Elec Engr
Choudhury, A. K		

NSG 5378 **Howard University** **1895**
Clinical applications of the lexiscope

Period	Obligations	
07/01/79-06/30/80	FY79: $13,724	TOTAL: $13,724
Prin Invest	*NASA Tech Officer*	*CASE Category*
Press, H. C., Jr.	GSFC/Yin, L. I.	56-Medical Sciences
	GSFC/Trombka, J. I.	

NSG 7378 **Howard University** **1896**
Photodissociative excitation detection of parent molecules in comets

Period	Obligations	
10/15/77-10/14/78	FY79:	TOTAL: $47,018
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jackson, W. M.	HQ-SL/Donn, B.	12-Chemistry

NSG 7624 **Howard University** **1897**
Eigenvalue/eigenvector assignment in linear systems

Period	Obligations	
08/01/79-07/31/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Choudhury, A. K.	HQ-RT/Whiting, E. E.	45-Elec Eng
	LARC/Taylor, L. W.	

NSG 9010 **Howard University** **1898**
Theoretical evaluation of linear Kalman filtering techniques for advanced mission state determination

Period	Obligations	
07/01/74-01/31/80	FY79:	TOTAL: $30,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Choudhury, A. K.	JSC/Savely, R. T.	45-Elec Engr

NGR 09-053-003 **Univ of District of Columbia-Harvard Ga** **1899**
Investigation of problems associated with solid encapsulation of high voltage electronic assemblies

Period	Obligations	
04/15/74-08/31/80	FY79:	TOTAL: $111,474
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, E. L.	GSFC/Ruitberg, A. P.	39-Env Sci, NEC
	GSFC/Bever, R. S.	

NGR 09-050-003 **Univ of District of Columbia-Mt Vernon** **1900**
Fundamental and analytical investigations of mechanisms and phenomena related to spacecraft electrochemical devices

Period	Obligations	
10/07/69-08/31/80	FY79:	TOTAL: $144,472
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nottingham, W. C.	GSFC/Webster, W.H., Jr.	11-Astronomy
	GSFC/Ford, F. E.	

NGR 09-050-019 **Univ of District of Columbia-Mt Vernon** **1901**
Determination of heavy metals in sediments and benthic species in relation to nuclear power plant operation

Period	Obligations	
02/18/74-05/31/80	FY79: $58,266	TOTAL: $190,549
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phelps, H. L.	GSFC/Gross, F. C.	39-Env Sci, NEC

NSG 5122 **Univ of District of Columbia-Mt Vernon** **1902**
Research in orbit determination by method of least squares and Kalman filter

Period	Obligations	
08/01/76-11/30/79	FY79.	TOTAL: $25,529
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bakshi, J. S.	GSFC/Fuchs, A. J.	21-Mathematics

NSG 5192 **Univ of District of Columbia-Mt Vernon** **1903**
Excitation cross section measurements of atmospheric interest

Period	Obligations	
08/01/77-08/31/80	FY79: $48,703	TOTAL: $155,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morgan, H. D.	GSFC/Mentall, J. E.	13-Physics

NCA 5-95 **Univ of District of Columbia-Van Ness** **1904**
Study of the evolution of solar active regions

Period	Obligations	
06/01/79-08/15/79	FY79: $3,860	TOTAL: $3,860
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kasten, R.	GSFC/Hobbs, R. W.	11-Astronomy

NSG 5290 **Univ of District of Columbia-Van Ness** **1905**
Measurement of bi-directional reflected spectra and correlation to agronomic parameters

Period	*Obligations*	
08/01/78-11/30/79	FY79:	TOTAL: $26,444
Prin Invest	*NASA Tech Officer*	*CASE Category*
Watlington, R. A.	GSFC/Chappelle, E. W.	19-Phys Sci, NEC

FLORIDA

NAS 1-15724 **Embry-Riddle Aeronautical University** **1906**
Development of training materials and concepts for terminal configured vehicle research programs

Period	*Obligations*	
02/22/79-07/21/79	FY79: $14,666	TOTAL: $14,666
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gandelman, J. H.	LARC/Houck, J. A.	41-Aero Engr
Connolly, T. J.	LARC/Bowles, R. L.	
Brachhold, A. F.		

NAS 5-25165 **Florida A&M University** **1907**
Medical application for computer technology

Period	*Obligations*	
08/15/78-02/14/80	FY79:	TOTAL: $48,317
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fresh, F. A.	GSFC/Alterescu, S.	56-Medical Sciences
	KSC/Buchanan, P.	

NCA 2-230701 **Florida A&M University** **1908**
Use of campus facilities and services by NASA to support research in chronopharmacology

Period	*Obligations*	
08/01/77-07/31/78	FY79:	TOTAL: $25,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Walker, C. A.	ARC/Winget, C. M.	61-Biol Aspects

NSG 901 **Florida A&M University** **1909**
Electron-impact excitation of molecular nitrogen

Period	*Obligations*	
09/12/74-09/30/78	FY79:	TOTAL: $118,416
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jones, H. J.	HQ-LU/Pohly, J. G.	13-Physics
	JPL/Trajmar, S.	

NSG 2029 **Florida A&M University** **1910**
Study of influence of amines on diurnal toxicity of stimulants & depressants

Period	*Obligations*	
07/01/74-09/30/80	FY79: $120,000	TOTAL: $288,058
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Stronach, C. E.	ARC/Winget, C. M.	59-Life Sci, NEC

NSG 2183 **Florida A&M University** **1911**
Regulation of the adrenal cortex function during stress

Period	*Obligations*	
09/01/76-09/30/80	FY79: $79,663	TOTAL: $148,952
Prin Invest	*NASA Tech Officer*	*CASE Category*
Soliman, K. F.	ARC/Winget, C. M.	59-Life Sci, NEC

NSG 2311 **Florida A&M University** **1912**
A model system for studies on liver metabolism in space

Period	*Obligations*	
04/01/78-03/31/80	FY79: $28,720	TOTAL: $58,640
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tolbert, M. E.	ARC/Klein, H. P.	51-Biological Sci

NSG 5307 **Florida A&M University** **1913**
Electron-impact excitation of molecular nitrogen

Period	*Obligations*	
11/15/78-11/14/80	FY79: $110,434	TOTAL: $110,434
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jones, H. W.	GSFC/Temkin, A.	13-Physics
Neatherford, C. A.		
Jain, B. L.		

NAS10-9461 **Florida Institute of Technology** **1914**
Acetylacetone, mmH reaction byproducts, and portable scrubbing aspirator study

Period	*Obligations*	
08/14/78-08/13/79	FY79:	TOTAL: $19,858
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thomas, J. J.	KSC/Howard, F. S.	43-Chem Engr

NAS 1-9693 **Florida State University** **1915**
Participation in the science planning for the Viking 1975 missions in the area of meteorology

Period	*Obligations*	
03/23/70-01/31/79	FY79:	TOTAL: $462,139
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hess, S. K.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	32-Geological Sci

NAS 1-14930 **Florida State University** **1916**
Science support for the stratospheric aerosol and gas experiment

Period	*Obligations*	
06/22/77-09/30/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Craig, R. A.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NGR 10-004-056 **Florida State University** **191**
Infrared absorption from 0.8 to 1.5 microns of Nh3, Ch4 and CO2

Period	*Obligations*	
03/25/69-01/31/79	FY79: $18,000	TOTAL: $281,963
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hunt, R. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 7337 **Florida State University** **1918**
Rock-inhabiting microorganisms from hot and cold deserts: Adaptations to extreme environments

Period	Obligations	
03/15/77-03/14/80	FY79: $79,995	TOTAL: $204,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Friedmann, E. I.	HQ-SB/Young, R. S.	54-Env Biology
Friedmann, R. O.		

NSG 7473 **Florida State University** **1919**
Laboratory determination of infrared absorption line parameters for molecules of importance in upper atmospheric research

Period	Obligations	
07/01/78-06/30/80	FY79: $70,000	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hunt, R. H.	HQ-EB/Kakar, R. K.	31-Atmos Sci
	HQ-EB/Seals, R. K., Jr.	

NSG 7629 **Florida State University** **1920**
Meteorology studies of Mars

Period	Obligations	
03/01/79-09/30/79	FY79: $33,000	TOTAL: $33,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hess, S. K.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NASW 3060 **State University System of Florida** **1921**
Operation of a state technology application center

Period	Obligations	
01/01/77-12/31/79	FY79: $106,000	TOTAL: $331,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-ET/Dolby, W.	99-Multi-Discip

NAS 8-32835 **The University of Central Florida** **1922**
Boundary integral fracture mechanics code

Period	Obligations	
02/27/78-03/25/80	FY79: $15,000	TOTAL: $24,515
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carroll, W. E.	MSFC/Bianca, C.	47-Materials Engr
	MSFC/Frederick, P. W.	

NAS 8-33071 **The University of Central Florida** **1923**
Study of cloud cover modeling

Period	Obligations	
05/30/78-09/30/79	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Somerville, P. N.	MSFC/Smith, O. E.	31-Atmos Sci
	MSFC/Brown, S. C.	

NAS10-8986 **The University of Central Florida** **1924**
Base-line studies for environmentally monitoring effects of space transportation systems

Period	Obligations	
05/28/76-09/21/79	FY79: $285,774	TOTAL: $1,073,352
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vickers, D. H.	KSC/Buchanan, P.	39-Env Sci, NEC
Stout, I. J.	KSC/Knott, W. M.	
Madsen, B. C.		

NAS10-9455 **The University of Central Florida** **1925**
Fiber optics pulse dispersion study

Period	Obligations	
07/24/78-12/23/79	FY79: $19,980	TOTAL: $39,957
Prin Invest	*NASA Tech Officer*	*CASE Category*
Riad, S. M.	KSC/Springer, D. A.	49-Engr, NEC
Riad, A.	KSC/Padgett, M. E.	

NAS 2-9976 **University of Florida** **1926**
Experiment implementation of a lightning and radio emission detector

Period	Obligations	
05/31/78-03/31/82	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lanzerotti, L. J.	ARC/Wilhelmi, A. J.	31-Atmos Sci
Uman, M. A.	ARC/Tischler, E. T.	
Krider, E. P.		

NAS 5-22908 **University of Florida** **1927**
Nimbus-G experiment team for solar back-scattered ultraviolet and total ozone mapping system

Period	Obligations	
12/19/75-10/01/80	FY79: 516	TOTAL: $208,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Green, A. E.	GSFC/Heath, D. F.	49-Engr, NEC
	GSFC/Nelsen, E. D.	

NAS 8-20247 **University of Florida** **1928**
Study of age deterioration of gasket materials installed in simulated launch vehicle hardware

Period	Obligations	
06/28/65-06/30/79	FY79:	TOTAL: $43,055
Prin Invest	*NASA Tech Officer*	*CASE Category*
Patterson, E. P.	MSFC/Schell, J. T.	12-Chemistry
	MSFC/Wood, T. E.	

NAS 9-15114 **University of Florida** **1929**
Influence of clouds on UV-B penetration of the earth's surface

Period	Obligations	
09/01/76-09/30/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Green, A. E.	JSC/Nachtwey, D. S.	56-Medical Sciences

NAS10-8920 **University of Florida** **1930**
Models to predict earth-air interface temperature regimes during freeze conditions

Period	Obligations	
12/02/75-05/07/80	FY79: $60,524	TOTAL: $263,515
Prin Invest	*NASA Tech Officer*	*CASE Category*
Manvi, R.	KSC/Pope, C. D.	39-Env Sci, NEC

NAS10-9168 **University of Florida** **1931**
Satellite freeze forecast system

Period	Obligations	
05/13/77-07/24/80	FY79: $65,000	TOTAL: $264,230
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gerber, J. F. Martsolf, J. D.	KSC/Pope, C. D.	39-Env Sci, NEC

NAS10-9378 **University of Florida** **1932**
Study of processing analysis of lidar and data for accessing launch/landing hazard due to thunderstorms

Period	Obligations	
04/17/78-10/16/79	FY79: $5,000	TOTAL: $29,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heasley, J. N. Uman, M. A.	KSC/Jafferis, W. KSC/Toft, P. D.	45-Elec Engr

NAS10-9466 **University of Florida** **1933**
Evaluation of remote sensing techniques

Period	Obligations	
10/05/78-10/05/79	FY79: $5,758	TOTAL: $5,758
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arvanitis, L. G.	KSC/Bland, R. A. KSC/Barnett, U. R.	39-Env Sci, NEC

NAS10-9611 **University of Florida** **1934**
Application of satellite freeze technology to other parts of the U S

Period	Obligations	
05/04/79-05/03/80	FY79: $47,999	TOTAL: $47,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gerber, J. F.	KSC/Pope, C. D.	31-Atmos Sci

NAS10-9666 **University of Florida** **1935**
Color infrared applications to citiculture

Period	Obligations	
07/19/79-01/18/80	FY79: $12,500	TOTAL: $12,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blazquez, C. H.	KSC/Horn, F. W.	39-Env Sci, NEC

NAS13-106 **University of Florida** **1936**
Conducting short courses in remote sensing

Period	Obligations	
01/08/79-01/07/80	FY79: $24,161	TOTAL: $24,161
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cross, C.	NSTL/Atwell, B. H.	32-Geological Sci

NGL 10-005-008 **University of Florida** **1937**
Theoretical atmospheric physics

Period	Obligations	
06/04/64-04/30/80	FY79:	TOTAL: $666,460
Prin Invest	*NASA Tech Officer*	*CASE Category*
Green, A. S.	HQ-SL/Donn, B. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGL 10-005-089 **University of Florida** **1938**
Experimental investigation of a uranium plasma

Period	Obligations	
01/30/68-12/31/78	FY79:	TOTAL: $778,795
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schneider, R. T.	HQ-RR/Thom, K.	13-Physics

NGR 10-005-169 **University of Florida** **1939**
Lightning studies

Period	Obligations	
01/15/73-04/13/80	FY79: $5,000	TOTAL: $74,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Uman, M. A.	KSC/Jafferis, W.	31-Atmos Sci

NGR 10-005-182 **University of Florida** **1940**
Fundamental studies on electrolyte matrix processing

Period	Obligations	
06/26/73-01/01/80	FY79:	TOTAL: $102,667
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, R. D., Jr.	LERC/Sheibley, D. W.	43-Chem Engr

NSG 1425 **University of Florida** **1941**
Study of the electronic properties in the electron and proton irradiated GaAlAs solar cell materials

Period	Obligations	
09/01/77-08/31/80	FY79: $40,000	TOTAL: $120,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Li, S. S.	LARC/Walker, G. H LARC/Conway, E. J.	45-Elec Engr

NSG 1586 **University of Florida** **1942**
Research on radiation induced laser plasmas

Period	Obligations	
01/01/79-12/31/79	FY79 $99,235	TOTAL $99,235
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schneider, R. T.	LARC/Hohl, F.	13-Physics

NSG 1600 **University of Florida** **1943**
The photochemistry of tropospheric CO and NoX and the impact of anthropogenic emissions

Period	Obligations	
04/01/79-03/31/80	FY79. $59,077	TOTAL: $59,077
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chameides, W. L.	LARC/Reichle, H G , Jr.	31-Atmos Sci

NSG 2120 **University of Florida** **1944**
Investigation on the flow about general fuselage shapes at high angles of attack

Period	Obligations	
09/15/75-10/30/79	FY79: $17,264	TOTAL: $150,681
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clarkson, M. H.	ARC/Malcolm, G. N. ARC/Chapman, G T	41-Aero Engr

NSG 2288 — **University of Florida** — **1945**
A jet in a crossflow

Period	Obligations	
01/01/78-11/30/80	FY79: $85,988	TOTAL: $110,988

Prin Invest	NASA Tech Officer	CASE Category
Fearn, R. L.	ARC/Aoyagi, K. ARC/Koenig, D. G.	41-Aero Engr

NSG 3018 — **University of Florida** — **1946**
Silicon PN junction solar cells

Period	Obligations	
06/24/74-02/29/80	FY79:	TOTAL: $266,983

Prin Invest	NASA Tech Officer	CASE Category
Lindholm, F. A. Neugroschel, A.	LERC/Godlewski, M. P. LERC/Brandhorst, H. W., Jr	45-Elec Engr

NSG 3254 — **University of Florida** — **1947**
Mechanisms of devitrification of grain boundary glassy phases in silicon nitride materials

Period	Obligations	
03/26/79-03/25/80	FY79: $40,000	TOTAL: $40,000

Prin Invest	NASA Tech Officer	CASE Category
Hench, L. L.	LERC/Dutta, S.	47-Materials Engr

NSG 3273 — **University of Florida** — **1948**
Evaluation of ion beam sputtered bioglass coatings of prosthetic devices

Period	Obligations	
07/01/79-06/30/80	FY79: $9,740	TOTAL: $9,740

Prin Invest	NASA Tech Officer	CASE Category
Hench, L. L	LERC/Sater, B. L.	56-Medical Sciences

NSG 7143 — **University of Florida** — **1949**
Analysis of Jupiter data from radio astronomy experiment spacecraft

Period	Obligations	
06/01/75-02/28/78	FY79	TOTAL: $46,079

Prin Invest	NASA Tech Officer	CASE Category
Carr, T. D.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7235 — **University of Florida** — **1950**
Use of remote sensing in solving Florida's geological and coastal engineering problems

Period	Obligations	
07/01/76-06/30/82	FY79: $100,000	TOTAL: $400,000

Prin Invest	NASA Tech Officer	CASE Category
Ruth, B. E.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 7299 — **University of Florida** — **1951**
Basic research relevant to a CW-nuclear pumped laser

Period	Obligations	
01/01/77-03/31/79	FY79:	TOTAL: $187,833

Prin Invest	NASA Tech Officer	CASE Category
Schneider, R. T.	HQ-RR/Thom, K. LARC/Hohl, F.	13-Physics

NAS 5-22963 — **University of Miami** — **1952**
Nimbus G coastal zone color scanner sensor experiment

Period	Obligations	
02/02/76-10/01/80	FY79: $28,369	TOTAL: $110,365

Prin Invest	NASA Tech Officer	CASE Category
Gordon, H. R.	GSFC/Nelsen, E. D.	31-Atmos Sci

NAS 5-25374 — **University of Miami** — **1953**
Data Systems Test (DST) evaluation and data sets

Period	Obligations	
01/15/79-08/14/80	FY79: $60,466	TOTAL: $60,466

Prin Invest	NASA Tech Officer	CASE Category
Krause, E. B Geller, M. A.	GSFC/Greaves, J. R. GSFC/Stetina, F. L.	31-Atmos Sci

NAS 8-32898 — **University of Miami** — **1954**
Numerical study of baroclinic instability

Period	Obligations	
06/02/78-06/14/79	FY79: $9,765	TOTAL: $25,748

Prin Invest	NASA Tech Officer	CASE Category
Geisler, J. E.	MSFC/Fowlis, W. W MSFC/Fichtl, G. H.	31-Atmos Sci

NAS 8-33558 — **University of Miami** — **1955**
Numerical study of baroclinic instability

Period	Obligations	
09/01/79-11/30/79	FY79: $7,000	TOTAL: $7,000

Prin Invest	NASA Tech Officer	CASE Category
Geisler, J. E.	MSFC/Fowlis, W. W MSFC/Fichtl, G. H.	31-Atmos Sci

NAS 9-15473 — **University of Miami** — **1956**
Study of sodium homeostasis and renin-aldosterone during water immersion

Period	Obligations	
11/21/77-10/31/79	FY79: $40,000	TOTAL: $65,000

Prin Invest	NASA Tech Officer	CASE Category
Epstein, M.	JSC/Huntoon, C. L	56-Medical Sciences

NAS10-9410 — **University of Miami** — **1957**
Three-dimensional thermal pollution mathematical model

Period	Obligations	
06/06/78-06/05/80	FY79: $94,692	TOTAL: $189,643

Prin Invest	NASA Tech Officer	CASE Category
Lee, S. S. Sengupta, S	KSC/Bland, R. A. KSC/Barnett, U. R	46-Mech Engr

NCA 2-438801 — **University of Miami** — **1958**
Influence of weightlessness on biochemical aging of flight muscle in drosophila melanogaster

Period	Obligations	
03/01/78-02/29/80	FY79: $18,700	TOTAL: $32,200

Prin Invest	NASA Tech Officer	CASE Category
Ono, K. Varner, J. R.	ARC/Miquel, J.	51-Biological Sci

FLORIDA (Continued)

NGR 10-007-008 — **University of Miami** — **1959**
Research in the Institute of Molecular Evolution in the school of Environmental and Planetary Sciences

Period	Obligations	
06/09/64-09/30/80	FY79: $65,000	TOTAL: $2,522,040
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fox, S. W.	HQ-SB/Young, R. S.	12-Chemistry

NSG 1283 — **University of Miami** — **1960**
Effects of environmental variables on the crack initiation stages of the corrosion fatigue of high strength aluminum alloys

Period	Obligations	
03/01/76-06/30/80	FY79: $17,204	TOTAL: $108,383
Prin Invest	*NASA Tech Officer*	*CASE Category*
Poteat, L. E.	LARC/Lisagor, W. B. LARC/Ransone, P. O.	47-Materials Engr

NSG 1436 — **University of Miami** — **1961**
Development of Boolean calculus and its application

Period	Obligations	
08/15/77-10/14/80	FY79: $22,700	TOTAL: $59,798
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tapia, M. A.	LARC/Tucker, J. H.	21-Mathematics

NSG 5342 — **University of Miami** — **1962**
Tropical disturbances in relation to general circulation modeling

Period	Obligations	
05/01/79-04/30/80	FY79: $62,221	TOTAL: $62,221
Prin Invest	*NASA Tech Officer*	*CASE Category*
Estoque, M. A.	GSFC/Halem, M.	31-Atmos Sci

NSG 5344 — **University of Miami** — **1963**
Research of ocean fronts and applications to Atlantic bluefish and tuna utilization and management

Period	Obligations	
04/04/79-04/03/80	FY79: $79,197	TOTAL: $79,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, F. Maul, G. A.	GSFC/Mueller, J. L.	33-Oceanography

NSG 7309 — **University of Miami** — **1964**
Cosmogenic production rates in chondritic meteorites

Period	Obligations	
02/01/77-07/31/78	FY79:	TOTAL: $34,190
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fisher, D. E.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7510 — **University of Miami** — **1965**
Freezing brines: A Martian regolith model

Period	Obligations	
12/01/78-08/31/79	FY79: $10,585	TOTAL: $10,585
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brass, G. B.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 1487 — **University of South Florida** — **1966**
Multispectral sensors and the discrimination of sources

Period	Obligations	
01/16/78-01/15/80	FY79: $11,000	TOTAL: $33,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tsokos, C. P.	LARC/Park, S. K.	21-Mathematics

NAS 9-15417 — **University of West Florida** — **1967**
Advanced dosimetry concepts

Period	Obligations	
10/01/77-03/31/80	FY79: $10,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schaefer, H. J.	JSC/Barnes, C. M.	59-Life Sci, NEC

GEORGIA

NSG 8019 — **Atlanta University** — **1968**
A study of the redox photo-chemistry of a number of iron complexes

Period	Obligations	
09/01/74-05/31/80	FY79:	TOTAL: $99,679
Prin Invest	*NASA Tech Officer*	*CASE Category*
ed, J. L. Johnson, J.	MSFC/Kent, M. I.	12-Chemistry

NSG 2143 — **Clark College** — **1969**
Aerosol formation and the space shuttle program

Period	Obligations	
04/15/76-07/31/80	FY79: $29,872	TOTAL: $100,087
Prin Invest	*NASA Tech Officer*	*CASE Category*
Veluri, V. R Utley, H. B.	ARC/Whitten, R. C. ARC/Toon, O. B.	12-Chemistry

NSG 7207 — **Clark College** — **1970**
Study of impurity states in quasi one-dimensional systems

Period	Obligations	
12/01/76-08/31/79	FY79:	TOTAL: $23,224
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sinha, O. P.	HQ-LU/Pohly, J. G. JPL/Somoano, R.	13 Physics

NGL 11-001-009 — **Emory University** — **1971**
Study of cardiovascular adaptation during long-term weightlessness

Period	Obligations	
05/12/65-06/30/82	FY79: $35,000	TOTAL: $627,198
Prin Invest	*NASA Tech Officer*	*CASE Category*
Popovic, V. P.	ARC/Holton, E. M.	51-Biological Sci

NGR 11-001-016 — **Emory University** — **1972**
Histopathological & histochemical study of subhuman primates

Period	Obligations	
10/01/63-02/29/80	FY79: $90,000	TOTAL: $1,035,748
Prin Invest	*NASA Tech Officer*	*CASE Category*
King, F. A.	ARC/Sandler, H.	56-Medical Sciences

NGR 11-001-045 **Emory University** **1973**
Vestibular influence on sleep in non-human primates

Period	Obligations	
10/07/71-12/31/79	FY79 $70,000	TOTAL $510,383
Prin Invest	*NASA Tech Officer*	*CASE Category*
Perachio, A. A.	ARC/Daunton, N. G.	59-Life Sci, NEC

NSG 735 **Fort Valley State College** **1974**
Nitrogen fixation as an adjunct to wastewater purification systems using water hyacinths

Period	Obligations	
07/17/79-07/16/80	FY79: $29,923	TOTAL: $29,923
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rogerson, A. C.	NSTL/Wolverton, B. C.	
Brown, N. B., Jr		39-Env Sci, NEC

DEN 3-73 **Georgia Institute of Technology** **1975**
Flat plate photovoltaic system costs study

Period	Obligations	
09/21/78-08/20/79	FY79 $4,000	TOTAL $38,122
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zimmer, R. P.	LERC/Hein, G. F.	45-Elec Engr

NAS 1-14351 **Georgia Institute of Technology** **1976**
Benefit assessment of pollution monitoring satellites

Period	Obligations	
02/26/76-09/05/79	FY79:	TOTAL $172,339
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zimmer, R. P.	LARC/Lawrence, G. F.	31-Atmos Sci
Sassone, P.	LARC/Rarer, J. L.	
Haffer, S. C.		

NAS 1-14654 **Georgia Institute of Technology** **1977**
Investigation of the effects of long duration exposure on active optical system components

Period	Obligations	
10/14/76-08/13/78	FY79:	TOTAL $197,823
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blue, M. D.	LARC/O'Neal, R. L.	45-Elec Engr
Gallagher, J. J.	LARC/Battista, J. D.	
Shackelford, R. G.		

NAS 1-14947 **Georgia Institute of Technology** **1978**
Data systems study for retrieving remote sensing stratospheric pollution monitoring data from satellite, airborne, and surface platforms

Period	Obligations	
06/01/77-06/30/78	FY79:	TOTAL: $74,157
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilkins, R. D.	LARC/Hall, J. B., Jr.	99-Multi-Discip
Zimmer, R. P.	LARC/Sullivan, E. M.	

NAS 1-15158 **Georgia Institute of Technology** **1979**
A study to interpret the surface pressure measurements at the tip of a model helicopter rotor in hover

Period	Obligations	
11/01/77-07/31/79	FY79	TOTAL $29,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gray, R. B.	LARC/Young, W. H., Jr.	41-Aero Engr
McMahon, H. M.	LARC/Mantay, W. R.	

NAS 1-15370 **Georgia Institute of Technology** **1980**
Holographic data storage crystals experiment for the Long Duration Exposure Facility (LDEF), phases I and II

Period	Obligations	
04/21/78-10/20/79	FY79 $13,838	TOTAL $24,838
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gaylord, T. K.	LARC/O'Neal, R. L.	45-Elec Engr
Cullen, W. R.	LARC/Clark, L. G.	

NAS 3-20110 **Georgia Institute of Technology** **1981**
Study of millimeter wave satellite concepts

Period	Obligations	
06/01/76-03/31/79	FY79	TOTAL $127,148
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zimmer, R. P.	LERC/Stevens, G. H.	42-Astro Engr

NAS 5-23710 **Georgia Institute of Technology** **1982**
Aircraft radiometer system for project Storm Fury

Period	Obligations	
09/21/76-02/28/80	FY79 $197,197	TOTAL $453,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schuchardt, J. M.	GSFC/King, J. L.	45-Elec Engr

NAS 5-24148 **Georgia Institute of Technology** **1983**
Thunderstorm research International project 1977

Period	Obligations	
05/04/77-06/04/79	FY79: $27,000	TOTAL $46,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilson, C. S.	GSFC/LeMone, D. M.	31-Atmos Sci
Wilson, B. J.		

NAS 5-25817 **Georgia Institute of Technology** **1984**
Study of Nimbus 7 applications investigations from priority 1 listing

Period	Obligations	
08/20/79-02/19/81	FY79 $68,113	TOTAL $68,113
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cunnold, D. M.	GSFC/Slajna, E. F.	39-Env Sci, NEC

NAS 8-31990 **Georgia Institute of Technology** **1985**
Digital analysis of LANDSAT data

Period	Obligations	
06/25/76-11/30/77	FY79	TOTAL $18,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Faust, C. E.	MSFC/Downs, S. [illegible]	
	MSFC/Jensko, J.	32-Geo[illegible]

NAS 8-32897 **Georgia Institute of Technology** **1986**
Study-low latitude winds for orbital reentry

Period	Obligations	
06/02/78-06/01/79	FY79:	TOTAL: $40 000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Justus, C. G.	MSFC/Smith, O E.	31-Atmos Sci
	MSFC/Johnson, D.	

NAS 8-33093 **Georgia Institute of Technology** **1987**
Applications of acoustics in the measurement of coal slab thicknesses

Period	Obligations	
07/31/78-10/31/79	FY79:	TOTAL: $87,636
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pierce, A. D	MSFC/Reed, B.	49-Engr, NEC
Mills, J. M.	MSFC/Randall, J. D.	
Madden, J., Jr.		

NAS 8-33438 **Georgia Institute of Technology** **1988**
Quantitative analysis of metallurgical specimen

Period	Obligations	
06/04/79-06/03/80	FY79: $10,969	TOTAL: $10,969
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brown, J. L	MSFC/Johnston, M. H	
	MSFC/Parr, R. A.	47-Materials Engr

NAS 8-33605 **Georgia Institute of Technology** **1989**
High accuracy radiation efficiency measurement techniques. Study is related to satellite power systems

Period	Obligations	
09/27/79-02/12/80	FY79: $19,928	TOTAL: $19,928
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kozakoff, D. J.	MSFC/Inman, R A.	45-Elec Engr
	MSFC/Finnell, W	

NAS13-84 **Georgia Institute of Technology** **1990**
Transfer of IMGRID software from Cyber 74 system to the Univac 1108 and implementation of the linear feature selection software

Period	Obligations	
04/06/78-04/05/79	FY79:	TOTAL $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Faust, N. L	NSTL/Pearson, R	22-Computer Science

NCC 2 9 **Georgia Institute of Technology** **1991**
Three-dimensional simulation of the Jovian circulation

Period	Obligations	
07/01/79-06/30/80	FY79: $12,969	TOTAL: $12,969
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alyea, F N.	ARC/Young, R. E.	31-Atmos Sci

NGL 11-002-004 **Georgia Institute of Technology** **1992**
Theoretical and experimental research program in geophysics with emphasis on upper atmosphere chemical release studies

Period	Obligations	
09/27/62-05/31/80	FY79:	TOTAL: $815,075
Prin Invest	*NASA Tech Officer*	*CASE Category*
Edwards, H. D	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 1493 **Georgia Institute of Technology** **1993**
Science support for solar occultation experiments with the Nimbus-G/SAM II and AEM-B/Sage spacecraft sensors

Period	Obligations	
01/16/78-10/15/80	FY79: $167,407	TOTAL: $224,399
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grams, G. W.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P	

NSG 1592 **Georgia Institute of Technology** **1994**
Analysis and design of pendulum vibration absorbers for helicopters

Period	Obligations	
01/15/79-01/14/80	FY79 $44,984	TOTAL $44,984
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pierce, G A.	LARC/Lee, B L.	41-Aero Engr
	LARC/Hammond, C E	

NSG 1643 **Georgia Institute of Technology** **1995**
Ozone transport in the lower stratosphere and the ozone relationship

Period	Obligations	
08/01/79-07/31/80	FY79 $20,000	TOTAL $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cunnold, D M	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M P.	

NSG 2306 **Georgia Institute of Technology** **1996**
Light-scattering calculations for the nephelometer experiment on the 1981/1982 Jupiter orbiter-probe mission

Period	Obligations	
03/01/78-02/28/80	FY79 $13,934	TOTAL $27,797
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grams, G. W.	ARC/Ragent, B	31-Atmos Sci
	ARC/Pollack, J B	

NSG 2323 **Georgia Institute of Technology** **1997**
Chronology integration analyses for closed life support systems applicable to space habitats

Period	Obligations	
06/01/78-12/31/79	FY79 $170,000	TOTAL $235,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carden, J L	ARC/MacElroy, R D	59-Life Sci, NEC

NSG 2356 **Georgia Institute of Technology** **1998**
Development of molded, coated fabric joints

Period	Obligations	
12/01/78-08/31/80	FY79: $84,308	TOTAL: $84,308
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Olson, L. H.	ARC/Vykukal, H. C.	49-Engr, NEC
Freeston, W. D.	ARC/Webbon, B. W.	

NSG 2363 **Georgia Institute of Technology** **1999**
In-situ measurements of optical properties of stratospheric aerosols using NASA U-2 aircraft

Period	Obligations	
02/01/79-11/30/79	FY79: $49,957	TOTAL: $49,957
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Grams, G. W.	ARC/Pollack, J. B.	31-Atmos Sci

NSG 3036 **Georgia Institute of Technology** **2000**
Acoustic properties of turbofan inlets

Period	Obligations	
09/01/74-10/31/81	FY79: $66,279	TOTAL: $134,633
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Zinn, B. T.	LERC/Baumeister, K. J.	41-Aero Engr
Sigman, R. K.	LERC/Rice, E. J	

NSG 3052 **Georgia Institute of Technology** **2001**
Experimental determination of rocket injector response factors under reactive conditions

Period	Obligations	
03/01/75-02/28/79	FY79:	TOTAL: $212,558
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Korkan, K. D.	LERC/Priem, R. J.	42-Astro Engr
Petrie, S. L.		

NSG 3106 **Georgia Institute of Technology** **2002**
Surface temperatures and glassy state investigations in tribology

Period	Obligations	
05/15/76-07/01/80	FY79: $39,954	TOTAL: $119,983
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Winer, W. O.	LERC/Jones, W. R., Jr	46-Mech Engr
Bair, S.		

NSG 3228 **Georgia Institute of Technology** **2003**
A study of poultry plant noise characteristics and potential noise control techniques

Period	Obligations	
10/01/78-12/31/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Cassonova, R. A.	LERC/Feiler, C. E.	13-Physics

NSG 3260 **Georgia Institute of Technology** **2004**
A viscous-inviscid interactive procedure for rotational flow in cascades of two-dimensional airfoils of arbitrary shape

Period	Obligations	
03/15/79-03/15/80	FY79: $21,889	TOTAL: $21,889
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Johnston, W. A.	LERC/Sockol, P. M	41-Aero Engr

NSG 3297 **Georgia Institute of Technology** **2005**
Foreign labor and capital costs for the manufacture of balance of system components

Period	Obligations	
08/15/79-12/14/79	FY79: $22,308	TOTAL: $22,308
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Jacobson, J. E	LERC/Scudder, L. R.	72-Economics
Hammond, R. W.		
James, B. E.		

NSG 3307 **Georgia Institute of Technology** **2006**
A new numerical approach for compressible viscous flows

Period	Obligations	
09/10/79-09/09/80	FY79: $45,678	TOTAL: $45,678
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Wu, J.	LERC/McFarland, E. R	41-Aero Engr
	LERC/Sockol, P. M.	

NSG 5012 **Georgia Institute of Technology** **2007**
Research in millimeter wave techniques

Period	Obligations	
06/15/74-01/31/80	FY79: $35,000	TOTAL: $586,434
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Forsythe, R. E.	GSFC/King, J. L.	45-Elec Engr
	GSFC/Shiue, J. C.	

NSG 5082 **Georgia Institute of Technology** **2008**
Permittivity of sea water at millimeter wavelengths

Period	Obligations	
10/01/75 05/15/78	FY79:	TOTAL: $61,971
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Dees, J. W.	GSFC/King, J. L.	31-Atmos Sci

NSG 5220 **Georgia Institute of Technology** **2009**
Meteorological measurements by synthetic radar

Period	Obligations	
02/01/78-01/31/79	FY79	TOTAL: $50,315
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Metcalf, J. I	GSFC/Atlas, D	31-Atmos Sci
Trebits, R. N.		
Piper, S. O.		

NSG 7069 **Georgia Institute of Technology** **2010**
Photocatalytic synthesis on planetary surfaces; molecular bases for the adaptation of halophilic microorganisms

Period	Obligations	
09/15/74-09/30/80	FY79: $18,318	TOTAL: $72,766
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Hubbard, J. S.	HQ-SB/Young, R. S	51-Biological Sci

NAS 5-23571 **Morehouse College** **2011**
Application of medical information management system for medical record keeping

Period	Obligations	
06/09/76-12/08/79	FY79:	TOTAL: $72,865
Prin Invest	*NASA Tech Officer*	*CASE Category*
Margolis, S.	GSFC/Alterescu, S.	56-Medical Sciences
Norris, T. E.	GSFC/Friedman, D. S.	
Sullivan, L. W.		

NGT 11-008-004 **Morehouse College** **2012**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/74-05/31/79	FY79:	TOTAL: $31,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hall, J. H.	HQ-LU/Pohly, J. G.	99-Multi-Discip
	HQ-U/Jenkins, H. G.	

NSG 7652 **Morehouse College** **2013**
The matrix-isolation infrared-laser-Raman study of the molecular structure of chlorine nitrate

Period	Obligations	
09/30/79-09/30/80	FY79: $45,000	TOTAL: $45,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hall, J. H.	HQ-LU/Pohly, J. G.	12-Chemistry
	JPL/Watson, R. T.	

NSG 8043 **Morehouse College** **2014**
A comprehensive examination of ion acoustic waves in multi-ion component plasmas

Period	Obligations	
09/15/76-09/14/79	FY79:	TOTAL: $22,786
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turner, J. M.	MSFC/Burch, J. L.	13-Physics

NSG 8027 **Morris Brown College** **2015**
Increasing adhesion of paracyclophane polymers to epoxy glass laminate surfaces

Period	Obligations	
06/01/75-01/31/78	FY79:	TOTAL: $35,472
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maxwell, A.	MSFC/Patterson, W. J.	12-Chemistry
	MSFC/Kent, M. I.	

NAS 8-30619 **North Georgia College** **2016**
Correlation studies of remote sensing and fine beetle infestation

Period	Obligations	
04/09/74-06/30/78	FY79	TOTAL: $17,232
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biesbrock, J. A.	MSFC/Downs, S. W., Jr.	
	MSFC/Paludan, C. T.	51-Biological Sci

NSG 803 **Savannah State College** **2017**
Toxic elements and organic degradation products in aquatic bodies and sediments around KSC

Period	Obligations	
09/23/74-09/22/79	FY79:	TOTAL: $110,289
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ghuman, G. S.	KSC/Perkins, E. E	39-Env Sci, NEC
Menon, M. P.		
Emeh, C. O.		

NSG 8048 **Savannah State College** **2018**
Research study of edge enhancement of multispectral imagery

Period	Obligations	
02/15/77-08/31/78	FY79	TOTAL: $27,987
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wenner, D. B.	MSFC/Jayroe, R. R., Jr.	45-Elec Engr
	MSFC/Kent, M. I.	

NGT 11-013-001 **Spelman College** **2019**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/74-05/31/78	FY79.	TOTAL: $31,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Falconer, E.	HQ-LU/Pohly, J. G.	99-Multi-Discip
	HQ-U/Jenkins, H. G	

NASW 2948 **University of Georgia** **2020**
Operation of the computer software management information center

Period	Obligations	
07/01/76-06/30/79	FY79.	TOTAL: $142,026
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-ET/Harrison, J. O	99-Multi-Discip

NASW 3247 **University of Georgia** **2021**
Operation of Comic

Period	Obligations	
05/01/79-04/30/80	FY79 $372,000	TOTAL $372,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hale, H.	HQ-ET/Harrison, J. O.	
		22-Computer Science

NAS13-121 **University of Georgia** **2022**
Investigation studies to apply LANDSAT technology to assess the structure and potential waste assimilation capability of wetlands located along the Savanah River from Augusta to Savanah

Period	Obligations	
06/01/79-05/31/80	FY79. $20,671	TOTAL $20,671
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cooley, J. E.	NSTL/Butera, M. K.	32-Geological Sci
Odum, E. P.		

GEORGIA (Continued)

NAS13-123 **University of Georgia** **2023**
Conduct short courses in remote sensing

Period	Obligations	
05/18/79-05/31/80	FY79: $19,946	TOTAL: $19,946
Prin Invest	*NASA Tech Officer*	*CASE Category*
Welch, R.	NSTL/Atwell, B. H.	32-Geological Sci

NGR 11-003-037 **University of Georgia** **2024**
Interpretation of stratigraphy and geologic mapping of Mars from Mariner/Mars 1971 television pictures

Period	Obligations	
05/24/72-04/14/79	FY79:	TOTAL: $79,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Howard, J. H.	HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7433 **University of Georgia** **2025**
Irradiation effects on the surface of the Moon, Mercury, Asteroids, and other airless solar system bodies due to solar high energy particles and cosmic rays

Period	Obligations	
03/01/78-02/28/80	FY79: $24,656	TOTAL: $40,677
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wenner, D. B.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7539 **University of Georgia** **2026**
Comparative analysis of terrestrial and Martian labyrinth terrains

Period	Obligations	
03/01/79-02/28/80	FY79 $14,650	TOTAL: $14,650
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brook, G.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

HAWAII

NAS 5-25181 **University of Hawaii** **2027**
Modifications to and operations and maintenance of the lunar laser observatory at the University of Hawaii in support of various satellite missions

Period	Obligations	
08/09/78-09/30/79	FY79 $157,010	TOTAL $257,010
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cushman, S. F.	GSFC/White, W. W.	11-Astronomy
Jefferies, J. T.	GSFC/Davis, J. B.	

NAS 5-25376 **University of Hawaii** **2028**
Data system test evaluation of global data sets

Period	Obligations	
01/23/79-02/22/80	FY79: $54,775	TOTAL: $54,775
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sadler, J. C.	GSFC/Greaves, J. R.	31-Atmos Sci
	GSFC/Stetina, F. L.	

NAS 5-25378 **University of Hawaii** **2029**
Data systems test evaluation and data sets

Period	Obligations	
12/05/78-01/04/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Murakami, T.	GSFC/Greaves, J. R.	31-Atmos Sci
	GSFC/Stetina, F. L.	

NAS 8-33219 **University of Hawaii** **2030**
The modeling of the solar upper photoshpere and lower chromosphere based upon ATM data

Period	Obligations	
03/01/79-02/29/80	FY79: $65,796	TOTAL: $65,796
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heasley, J. N.	MSFC/DeLoach, A. C.	13-Physics

NASW 2326 **University of Hawaii** **2031**
Design development and fabrication of research equipment

Period	Obligations	
06/22/72-12/30/77	FY79:	TOTAL: $360,049
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-SL/Strickland, A. T.	11-Astronomy

NASW 2801 **University of Hawaii** **2032**
Construction of the three meter infrared telescope facility at Mauna Kea, Hawaii

Period	Obligations	
06/01/75-07/01/79	FY79:	TOTAL: $7,666,455
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-BX/Weir, J. F.	11-Astronomy
	HQ-SL/Brunk, W. E.	

NASW 3159 **University of Hawaii** **2033**
Provision of support during the preparatory stage for operation of the NASA infrared telescope facility

Period	Obligations	
01/01/78-09/30/79	FY79: $389,172	TOTAL: $480,464
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NGL 12-001-011 **University of Hawaii** **2034**
Research in coronal and chromospheric physics

Period	Obligations	
11/16/64-09/30/79	FY79: $233,000	TOTAL $4,092,234
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-ST/Boulin, J. D.	11-Astronomy

NGL 12-001-042 **University of Hawaii** **2035**
Performance and capabilities of terrestrial organisms in extreme and unusually gaseous and liquid environments

Period	Obligations	
04/14/67-12/31/77	FY79:	TOTAL: $451,378
Prin Invest	*NASA Tech Officer*	*CASE Category*
Siegel, S. M.	HQ-SB/Young, R. S.	51-Biological Sci

HAWAII (Continued)

NGL 12-001-057 **University of Hawaii** **2036**
Research in planetary studies

Period	Obligations	
05/21/68-06/30/81	FY79: $510,000	TOTAL: $4,071,472
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 12-001-075 **University of Hawaii** **2037**
Research in solar ultraviolet spectroscopy

Period	Obligations	
12/09/69-12/31/78	FY79:	TOTAL: $1,950,421
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	GSFC/Bissell, E. E.	11-Astronomy
	HQ-ST/Bohlin, J. D.	

NGR 12-001-109 **University of Hawaii** **2038**
N-heterocyclic compounds role in chemical evolution distribution in meteorites ancient sediments and as products of spark discharge reactions

Period	Obligations	
06/26/72-05/14/80	FY79: $37,600	TOTAL: $264,375
Prin Invest	*NASA Tech Officer*	*CASE Category*
Folsome, C. E.	HQ-SB/Young, R. S.	12-Chemistry

NGR 12-001-127 **University of Hawaii** **2039**
Operation of the Haleakala Lunar Ranging Observatory

Period	Obligations	
06/01/73-10/31/79	FY79: $325,000	TOTAL: $1,912,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	GSFC/White, W. W.	32-Geological Sci
Cushman, S. F.	HQ-ER/Flinn, E. A.	

NSG 5159 **University of Hawaii** **2040**
Determination of highly reflective cloud frequencies over the tropical oceans

Period	Obligations	
02/14/77-01/15/79	FY79:	TOTAL: $17,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ramage, C. S.	GSFC/Theon, J. S.	31-Atmos Sci

NSG 5203 **University of Hawaii** **2041**
Geochemical data synthesis and analyses

Period	Obligations	
12/01/77-01/31/79	FY79:	TOTAL: $30,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whilpotts, J. A.	GSFC/Nava, D. F.	32-Geological Sci

NSG 5231 **University of Hawaii** **2042**
Determination of cosmic abundance of boron

Period	Obligations	
02/19/78-02/18/79	FY79:	TOTAL: $5,457
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boesgarrd, A. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5317 **University of Hawaii** **2043**
Ground based solar observations for the Solar Maximum Mission (SMM)

Period	Obligations	
01/15/79-01/14/80	FY79: $22,117	TOTAL: $22,117
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	GSFC/Donley, J. L.	31-Atmos Sci
Orrall, F. Q.		

NSG 5326 **University of Hawaii** **2044**
Investigation of flare protons in the sun's atmosphere

Period	Obligations	
02/01/79-01/31/80	FY79: $2,581	TOTAL: $2,581
Prin Invest	*NASA Tech Officer*	*CASE Category*
Orrall, F. Q.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 7179 **University of Hawaii** **2045**
Crustal deformation observations

Period	Obligations	
10/20/75-12/31/79	FY79: $245,607	TOTAL: $591,472
Prin Invest	*NASA Tech Officer*	*CASE Category*
Berg, E.	HQ-SL/Finley, C. J.	19-Phys Sci, NEC
Sutton, G. H.	HQ-ER/Flinn, E. A.	
Laurila, S. H.		

NSG 7310 **University of Hawaii** **2046**
Spectroscopy of asteroids

Period	Obligations	
01/01/77-01/31/79	FY79:	TOTAL: $62,786
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 7312 **University of Hawaii** **2047**
Remote compositional mapping of the lunar surface

Period	Obligations	
02/01/77-01/31/80	FY79: $190,000	TOTAL: $751,112
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7323 **University of Hawaii** **2048**
Research in planetary astronomy

Period	Obligations	
02/01/77-01/31/80	FY79: $108,000	TOTAL: $240,292
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7403 **University of Hawaii** **2049**
Study of physical processes affecting water ice on outer solar system objects

Period	Obligations	
12/01/77-05/31/80	FY79: $23,626	TOTAL: $43,326
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kafotos, M.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

HAWAII (Continued)

NSG 7423 **University of Hawaii** **2050**
Analysis of depth profiles of cosmic ray products in rocks

Period	Obligations	
03/01/78-10/31/79	FY79:	TOTAL: $9,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Russ, G. P.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7443 **University of Hawaii** **2051**
Mineralogy of the surfaces of Mercury and Mars

Period	Obligations	
02/01/78-04/30/79	FY79:	TOTAL: $40,048
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7462 **University of Hawaii** **2052**
An investigation of the mineralogy and petrology of meteorite parent bodies utilizing reflectance spectrosopy

Period	Obligations	
07/15/78-02/29/80	FY79:	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gaffey, M. J.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7536 **University of Hawaii** **2053**
Research in ultraviolet spectroscopy

Period	Obligations	
11/01/78-10/31/80	FY79: $100,000	TOTAL: $100,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferies, J. T.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7590 **University of Hawaii** **2054**
Mars surface unit definition characterization

Period	Obligations	
03/01/79-02/29/80	FY79: $64,854	TOTAL: $64,854
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Quaide, W. L.	31-Atmos Sci

NSG 7597 **University of Hawaii** **2055**
Geophysics and thermal evolution of small planetary objects

Period	Obligations	
05/01/79-04/30/80	FY79: $30,446	TOTAL: $30,446
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gaffey, M. J.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7633 **University of Hawaii** **2056**
Thermophysics of satellites and asteroids

Period	Obligations	
07/01/79-06/30/80	FY79: $12,142	TOTAL: $12,142
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morrison, D.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	13-Physics

NSG 9071 **University of Hawaii** **2057**
Geochemistry of lunar and planetary processes

Period	Obligations	
07/15/78-09/30/79	FY79:	TOTAL: $28,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Philpotts, J. A.	JSC/Harris, J. W.	32-Geological Sci

IDAHO

NSG 2367 **University of Idaho** **2058**
Perfluoroether triazine elastomers

Period	Obligations	
03/01/79-02/28/80	FY79: $9,800	TOTAL: $9,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Korus, R. A.	ARC/Roscher, R. W. ARC/Parker, J. A.	12-Chemistry

ILLINOIS

NSG 3030 **Chicago State University** **2059**
The restoration of obliterated serial numbers by ultrasonically cavitated water

Period	Obligations	
07/01/74-08/31/79	FY79:	TOTAL: $89,725
Prin Invest	*NASA Tech Officer*	*CASE Category*
Treptow, R. S.	LERC/Young, S. G.	99-Multi-Discip

NSG 1266 **Illinois Institute of Technology** **2060**
Automated sizing of aerospace structures under multiple constraints

Period	Obligations	
12/01/75-10/31/79	FY79:	TOTAL: $148,610
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haftka, R. T.	LARC/Adelman, H. M.	41-Aero Engr

NSG 1591 **Illinois Institute of Technology** **2061**
Management of turbulent flow structures in boundary layers aimed at drag reduction

Period	Obligations	
01/15/79-01/14/80	FY79: $40,122	TOTAL: $40,122
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagib, H. M.	LARC/Hefner, J. N. LARC/Bushnell, D. M.	41-Aero Engr

NSG 3220 **Illinois Institute of Technology** **2062**
Management of turbulence and vorticity in contracting flows with applications to simulations of flight fan noise

Period	Obligations	
09/15/78-09/15/80	FY79: $67,040	TOTAL: $117,340
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagib, H. M. Wigeland, R. A.	LERC/Groeneweg, J. F.	41-Aero Engr

NAS 3-21261 **Northwestern University** **2063**
Measurement of film thickness in face seals
Period *Obligations*
07/14/78-10/13/78 FY79: TOTAL: $9,666
Prin Invest. *NASA Tech Officer* *CASE Category*
Burton, R. A. LERC/Ludwig, L. P. 46-Mech Engr

NAS 8-33010 **Northwestern University** **2064**
Research in galactic and extragalactic astronomy HEAO-1
Period *Obligations*
06/01/78-09/30/80 FY79: $5,800 TOTAL: $38,383
Prin Invest *NASA Tech Officer* *CASE Category*
Ulmer, M. P. MSFC/Jones, J. B., Jr. 11-Astronomy

NAS 8-33354 **Northwestern University** **2065**
Observations of Abell cluster
Period *Obligations*
07/15/79-07/14/80 FY79: $7,000 TOTAL: $7,000
Prin Invest *NASA Tech Officer* *CASE Category*
Ulmer, M. P. MSFC/Jones, J. B., Jr. 11-Astronomy

NGL 14-007-04 **Northwestern University** **2066**
A study of celestial objects of high angular momenta
Period *Obligations*
02/18/66-04/30/78 FY79: TOTAL: $265,251
Prin Invest *NASA Tech Officer* *CASE Category*
Huang, S. S. HQ-SC/Roman, N. G 11-Astronomy
HQ-SC/Rosendhal, J. D.

NGT 14-007-780 **Northwestern University** **2067**
Pre-cooperative engineering education program
Period *Obligations*
10/01/77-09/30/79 FY79: TOTAL: $14,765
Prin Invest *NASA Tech Officer* *CASE Category*
Ingersoll, D. HQ-LU/Pohly, J. G. 49-Engr, NEC
LERC/Allen, R. P.

NSG 2149 **Northwestern University** **2068**
Technological and economic factors affecting the retirement dates of commercial jet aircraft
Period *Obligations*
04/01/76-01/01/80 FY79: $7,578 TOTAL: $53,182
Prin Invest *NASA Tech Officer* *CASE Category*
Spencer, F. A. ARC/Anderson, J. L. 41-Aero Engr
ARC/Jones, J. L.

NSG 2328 **Northwestern University** **2069**
Impact of international noise abatement regulations on the U.S. aircraft manufacturing and air carrier industries
Period *Obligations*
05/15/78-12/31/79 FY79: $18,400 TOTAL: $40,700
Prin Invest *NASA Tech Officer* *CASE Category*
Spencer, F. A. ARC/Anderson, J. L. 41-Aero Engr
ARC/Faye, A. E.

NSG 3039 **Northwestern University** **2070**
Investigation of interaction of turbine blade tips and labyrinth seals with housings of jet engines and gas turbines
Period *Obligations*
09/16/74-12/31/78 FY79: TOTAL: $133,270
Prin Invest *NASA Tech Officer* *CASE Category*
Burton, R. A. LERC/Ludwig, L. P. 47-Materials Engr

NSG 3143 **Northwestern University** **2071**
Dynamic load and lubrication of spiral bevel gears
Period *Obligations*
03/15/77-10/15/80 FY79: $34,842 TOTAL: $103,637
Prin Invest *NASA Tech Officer* *CASE Category*
Cheng, H. S. LERC/Coy, J. J. 46-Mech Engr
LERC/Zaretsky, E. V.

NSG 3149 **Northwestern University** **2072**
Effects of debris dents and furrows on elastohydrodynamic lubrication
Period *Obligations*
05/01/77-04/30/79 FY79: TOTAL: $16,775
Prin Invest *NASA Tech Officer* *CASE Category*
Cheng, H. S. LERC/Wedeven, L. D. 46-Mech Engr

NSG 7394 **Southern Illinois University - Carbondale** **2073**
Blue-green algae studies
Period *Obligations*
12/01/77-02/28/79 FY79. TOTAL: $31,708
Prin Invest *NASA Tech Officer* *CASE Category*
Yopp, J. H. HQ-SB/Young, R. S. 51-Biological Sci

NAS 2-6551 **University of Chicago** **2074**
Pioneer F/G charged particle experiment data analysis
Period *Obligations*
08/09/71-09/30/79 FY79: $244,620 TOTAL: $1,669,361
Prin Invest *NASA Tech Officer* *CASE Category*
Simpson, J. A. ARC/Hall, C. F. 11-Astronomy
ARC/Porter, D. L.

NAS 5-11067 **University of Chicago** **2075**
IMP-H&J solar flare and isotope experiment
Period *Obligations*
06/11/68-11/30/79 FY79: $196,000 TOTAL: $2,227,304
Prin Invest *NASA Tech Officer* *CASE Category*
Simpson, J. A. GSFC/Davis, M. A. 13-Physics

NAS 5-20674 **University of Chicago** **2076**
Quasi ray electrons experiment for ISEE-C heliocentric orbit
Period *Obligations*
10/24/74-12/31/81 FY79: $213,448 TOTAL: $1,158,418
Prin Invest *NASA Tech Officer* *CASE Category*
Meyer, P. GSFC/Gallagher, W. F. 13-Physics
GSFC/Davis, M. A.

NAS 5-24430 **University of Chicago** **2077**
Design, develop, fabricate and test a scientific instrument for an experiment to measure cosmic ray isotopes
Period 12/01/77-09/30/83 *Obligations* FY79: $416,316 TOTAL: $1,216,316
Prin Invest Simpson, J. A. *NASA Tech Officer* GSFC/Davis, M. A. *CASE Categor* 13-Physics

NAS 8-32828 **University of Chicago** **2078**
Elemental composition and energy spectra of cosmic ray nuclei
Period 10/28/77-11/15/82 *Obligations* FY79: $1,163,318 TOTAL: $2,099,103
Prin Invest Meyer, P.; Muller, D. *NASA Tech Officer* MSFC/Guynes, B. V.; MSFC/Ise, R. *CASE Categor* 31-Atmos Sci

NAS 8-33350 **University of Chicago** **2079**
Guest investigator effort on the high energy astronomy observatory C-2
Period 05/30/79-05/29/80 *Obligations* FY79: $25,000 TOTAL: $25,000
Prin Invest Meyer, P. *NASA Tech Officer* MSFC/Jones, J. B., Jr. *CASE Categor* 11-Astronomy

NCA 2-108901 **University of Chicago** **2080**
Photometric performance of airborne infrared telescopes
Period 11/01/78-06/15/79 *Obligations* FY79: $11,880 TOTAL: $11,880
Prin Invest Harper, D. A., Jr. *NASA Tech Officer* ARC/Erickson, E. F.; ARC/Haughney, L. C. *CASE Categor* 11-Astronomy

NCA 2-108902 **University of Chicago** **2081**
Numerical experiments in galactic dynamics and planetary formation
Period 11/15/78-11/14/80 *Obligations* FY79: $7,700 TOTAL: $7,700
Prin Invest Miller, R. H.; Arnett, W. D. *NASA Tech Officer* ARC/Smith, B. F. *CASE Categor* 11-Astronomy

NGL 14-001-001 **University of Chicago** **2082**
Investigation of effects of solar wind in interplanetary space
Period 08/01/60-12/31/80 *Obligations* FY79: $29,700 TOTAL: $1,179,072
Prin Invest Parker, E. N. *NASA Tech Officer* HQ-SC/Kaluzienski, L. J.; HQ-SC/Opp, A. G. *CASE Categor* 11-Astronomy

NGL 14-001-005 **University of Chicago** **2083**
High altitude balloon investigations on composition, energy spectrum & intensity of primary cosmic radiation at high & intermediate geomagnetic latitudes
Period 05/01/61-10/31/79 *Obligations* FY79: $430,000 TOTAL: $5,935,258
Prin Invest Meyer, P. *NASA Tech Officer* HQ-SC/Opp, A. G. *CASE Categor* 11-Astronomy

NGL 14-001-006 **University of Chicago** **2084**
Experimental and theoretical studies of energetic particles and electrodynamical processes in interplanetary space and in vicinity of planets
Period 08/01/61-12/31/79 *Obligations* FY79: $440,000 TOTAL: $6,452,396
Prin Invest Simpson, J. A. *NASA Tech Officer* HQ-SL/Kaluzienski, L. J.; HQ-SC/Opp, A. G. *CASE Categor* 11-Astronomy

NGL 14-001-010 **University of Chicago** **2085**
Research and investigation of origin, age and composition of meteorites
Period 03/11/63-03/31/81 *Obligations* FY79: $85,660 TOTAL: $1,634,173
Prin Invest Anders, E.; Lewis, R. S. *NASA Tech Officer* HQ-SL/French, B. M.; HQ-SL/Quaide, W. L. *CASE Categor* 32-Geological Sci

NGL 14-001-167 **University of Chicago** **2086**
Lunar sample analysis
Period 03/29/72-01/31/81 *Obligations* FY79: $91,960 TOTAL: $1,588,350
Prin Invest Anders, E. *NASA Tech Officer* JSC/Harris, J. W. *CASE Categor* 13-Physics

NGL 14-001-169 **University of Chicago** **2087**
Lunar sample analysis
Period 01/19/71-01/31/81 *Obligations* FY79: $73,006 TOTAL: $866,298
Prin Invest Clayton, R. N. *NASA Tech Officer* JSC/Harris, J. W. *CASE Categor* 12-Chemistry

NGL 14-001-171 **University of Chicago** **2088**
Lunar sample analysis
Period 01/19/71-01/31/81 *Obligations* FY79: TOTAL: $619,383
Prin Invest Smith, J. V. *NASA Tech Officer* JSC/Harris, J. W *CASE Categor* 13-Physics

NGL 14-001-258 **University of Chicago** **2089**
Advanced technical developments in support of scientific experiments in space
Period 06/[illegible]/73-03/31/80 *Obligations* FY79: $250,000 TOTAL: $1,550,000
Prin Invest Simpson, J. A. *NASA Tech Officer* HQ-SP/Tate, F. *CASE Categor* 99-Multi-Discip

NGR 14-001-008 **University of Chicago** **2090**
Meteorological interpretation of satellite radiation data
Period 09/01/70-10/31/79 *Obligations* FY79: $75,000 TOTAL: $1,447,000
Prin Invest Fujita, T. T. *NASA Tech Officer* HQ-EB/Dodge, J. C. *CASE Categor* 31-Atmos Sci

NGR 14-001-135 University of Chicago 2091
Feasibility of the alpha scattering technique for Martian surface analysis

Period	Obligations	
02/25/69-01/31/80	FY79: $22,000	TOTAL: $731,844
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turkevich, A. L.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NGR 14-001-147 University of Chicago 2092
Interferometric high-resolution spectroscopy of optical interstellar lines

Period	Obligations	
03/18/70-12/31/78	FY79: $31,161	TOTAL: $262,769
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hobbs, L. M.	HQ-SC/Rosendhal, J. D.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 14-001-194 University of Chicago 2093
Quantitative spectroscopy of planetary atmospheres

Period	Obligations	
07/20/71-04/14/79	FY79:	TOTAL: $190,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clayton, R. N.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 14-001-225 University of Chicago 2094
Physiology of the vestibular system of the squirrel monkey

Period	Obligations	
05/12/67-11/30/79	FY79: $45,000	TOTAL: $422,893
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goldberg, J. M.	ARC/Daunton, N. G.	51-Biological Sci

NGR 14-001-227 University of Chicago 2095
Photometry of galactic and extragalactic far infrared sources using the 91 5 cm airborne infrared telescope

Period	Obligations	
02/27/73-03/31/80	FY79: $122,302	TOTAL: $560,565
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harper, D. A., Jr.	ARC/Haughney, L. C.	11-Astronomy

NGR 14-001-249 University of Chicago 2096
Physical properties of solar nebula as deduced from chondrites

Period	Obligations	
05/14/73-03/31/81	FY79: $64,484	TOTAL: $636,940
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grossman, L.	HQ-SL/French, B. M.	32-Geological Sci
Davis, A. M.	HQ-SL/Quaide, W. L.	

NSG 5202 University of Chicago 2097
Study of interstellar clouds containing atomic and molecular constituents

Period	Obligations	
09/01/77-08/31/79	FY79:	TOTAL: $12,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, J. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5291 University of Chicago 2098
Molecular hydrogen experimentation with Copernicus

Period	Obligations	
07/15/78-07/14/79	FY79:	TOTAL: $3,796
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, J. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5311 University of Chicago 2099
Ultraviolet observations of Copernicus data

Period	Obligations	
12/15/78-12/14/79	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, J. A.	GSFC/Kupperian, J. E., Jr	11-Astronomy

NSG 5402 University of Chicago 2100
Research of precipitation growth in convective clouds

Period	Obligations	
08/01/79-07/31/80	FY79: $26,474	TOTAL: $26,474
Prin Invest	*NASA Tech Officer*	*CASE Category*
Srivastava, R. C.	GSFC/Adler, R. F.	31-Atmos Sci

NSG 5405 University of Chicago 2101
Observations of interstellar lines in stars toward the north polar spur

Period	Obligations	
09/15/79-09/14/80	FY79 $12,000	TOTAL: $12,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frisch, P. C.	GSFC/Boggess, A.	11-Astronomy

NSG 7212 University of Chicago 2102
Nuclear astrophysics effects in meteoritic and lunar material

Period	Obligations	
03/01/76-02/29/80	FY79 $48,675	TOTAL: $157,241
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schramm, D. N.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7303 University of Chicago 2103
Applications of electron microscopy in molecular exobiology and extraterrestrial research

Period	Obligations	
12/01/76-07/31/80	FY79:	TOTAL: $105,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moran, H. F.	HQ-SB/Larson, C. A.	51-Biological Sci
	HQ-SB/Winter, D. L.	

NSG 7356 University of Chicago 2104
Balloon-borne spectroscopy of stratospheric constituents

Period	Obligations	
06/01/77-12/31/79	FY79:	TOTAL: $142,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kaplan, L. D.	HQ-ST/Seals, R. K., Jr.	31-Atmos Sci
	HQ-ST/Tilford, S. G.	

NSG 7464 **University of Chicago** **2105**
Studies of the energy spectrum of cosmic ray electrons
Period *Obligations*
07/01/78-03/31/80 FY79: $117,300 TOTAL: $160,332
Prin Invest *NASA Tech Officer* *CASE Category*
Muller, D. HQ-SC/Kaluzienski, L. J. 31-Atmos Sci
HQ-SC/Opp, A. G.

NSG 7532 **University of Chicago** **2106**
Chemical analysis by alpha particle techniques on a cometary mission
Period *Obligations*
01/01/79-12/31/79 FY79: $98,000 TOTAL: $98,000
Prin Invest *NASA Tech Officer* *CASE Category*
Turkevich, A. L. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. M.

NSG 7550 **University of Chicago** **2107**
Ion and electron microprobe analyses of meteoritic minerals
Period *Obligations*
02/01/79-01/31/80 FY79: $54,000 TOTAL: $54,000
Prin Invest *NASA Tech Officer* *CASE Category*
Smith, J. V. HQ-SL/French, B. M. 32-Geological Sci
HQ-SL/Quaide, W. L.

NAS 8-32993 **University of Illinois - Chicago Circle** **2108**
Spacelab experiment definition relating to basic soil behavior and dynamic properties
Period *Obligations*
04/01/78-02/28/79 FY79: TOTAL: $10,000
Prin Invest *NASA Tech Officer* *CASE Category*
Silver, M. L. MSFC/Costes, N. C. 44-Civil Engr
MSFC/Campbell, W.

NCA 2-330901 **University of Illinois - Chicago Circle** **2109**
Adapting a general radiative transfer program to atmospheric problems
Period *Obligations*
01/01/79-12/31/79 FY79: $11,000 TOTAL: $11,000
Prin Invest *NASA Tech Officer* *CASE Category*
Cogley, A. C. ARC/Pollack, J. B. 49-Engr, NEC
Bergstrom, R. W

NSG 1150 **University of Illinois - Chicago Circle** **2110**
A kinetic-theory approach to turbulent mixing and combustion
Period *Obligations*
03/01/75-12/31/79 FY79: TOTAL: $123,915
Prin Invest *NASA Tech Officer* *CASE Category*
Chung, P. M LARC/Evans, J. S. 41-Aero Engr
LARC/Beach, H. L., Jr.

NSG 7247 **University of Illinois - Chicago Circle** **2111**
Inverse problems in physics and geophysics
Period *Obligations*
07/01/76-12/31/78 FY79: TOTAL: $48,000
Prin Invest *NASA Tech Officer* *CASE Category*
Barcilon, V. HQ-RT/Randolph, L. P. 21-Mathematics
JPL/Chahine, M.

NAS 1-14731 **University of Illinois - Urbana** **2112**
Investigation of predictive display symbology for terminal configured vehicle
Period *Obligations*
12/20/76-05/15/79 FY79: $12,866 TOTAL: $116,218
Prin Invest *NASA Tech Officer* *CASE Category*
Jensen, R. S. LARC/Salmirs, S. 41-Aero Engr
LARC/Kurbjun, M. C.

NAS 5-24275 **University of Illinois - Urbana** **2113**
Application and design refinement of the massively parallel processing computer
Period *Obligations*
09/12/77-08/19/80 FY79: TOTAL: $115,000
Prin Invest *NASA Tech Officer* *CASE Category*
Slotnick, D. L. GSFC/Schaefer, D. H. 45-Elec Engr

NAS 5-25062 **University of Illinois - Urbana** **2114**
Study of antenna diffraction problems
Period *Obligations*
06/23/78-02/01/81 FY79: $85,086 TOTAL: $129,229
Prin Invest *NASA Tech Officer* *CASE Category*
Mittra, R. GSFC/Keating, T., Jr. 45-Elec Engr
Lee, S.

NAS 9-15328 **University of Illinois - Urbana** **2115**
Definition of Spacelab I experiment on effects of prolonged weightlessness on the humoral response in humans
Period *Obligations*
07/15/77-07/01/81 FY79 TOTAL: $47,738
Prin Invest *NASA Tech Officer* *CASE Category*
Voss, E. W. JSC/Chassay, C. E. 59-Life Sci, NEC

NGL 14-005-140 **University of Illinois - Urbana** **2116**
Research on fluid dynamic and heat transfer problems of modern air breathing propulsive systems
Period *Obligations*
05/23/69-05/31/79 FY79: TOTAL: $257,661
Prin Invest *NASA Tech Officer* *CASE Category*
Chow, W. L. LERC/Bober, L. J. 41-Aero Engr

NGR 14-005-176 **University of Illinois - Urbana** **2117**
Investigation of the atmosphere of Jupiter by studying the ammonia feature at a wavelength of 1.26 cm
Period *Obligations*
05/22/72-12/31/79 FY79: $13,672 TOTAL: $64,109
Prin Invest *NASA Tech Officer* *CASE Category*
Dickel, J. R. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Murphy, R. E.

NGR 14-005-181 **University of Illinois - Urbana** **2118**
Rocket studies of the lower ionosphere
Period *Obligations*
08/01/71-10/31/79 FY79: $450,000 TOTAL: $3,584,817
Prin Invest *NASA Tech Officer* *CASE Category*
Bowhill, S. A. WFC/Gray, J. W 19-Phys Sci, NEC
WFC/Pless, R. H.

NGR 14-005-200 **University of Illinois - Urbana** **2119**
Studies of discharge mechanisms occurring in high pressure gases with applications to high efficiency high power lasers

Period	Obligations	
04/06/73-11/30/78	FY79:	TOTAL: $189,860
Prin Invest	*NASA Tech Officer*	*CASE Category*
Verdeyen, J. T.	LERC/Dunning, J. W., Jr.	13-Physics
Cherrington, B. E.		

NSG 1434 **University of Illinois - Urbana** **2120**
Development of methods for predicting and measuring distribution patterns of aerial sprays

Period	Obligations	
06/21/77-10/20/78	FY79:	TOTAL: $73,379
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ormsbee, A. I.	LARC/Jordan, F. L.	41-Aero Engr
Sivier, K. R.		

NSG 1471 **University of Illinois - Urbana** **2121**
Mechanisms and methodologies for the design and construction of communicating concurrent processes in real-time environments

Period	Obligations	
11/15/77-11/14/80	FY79: $109,252	TOTAL: $174,422
Prin Invest	*NASA Tech Officer*	*CASE Category*
Campbell, R. H.	LARC/Foudriat, E. C.	21-Mathematics
Belford, G.	LARC/Will, R. W.	

NSG 1547 **University of Illinois - Urbana** **2122**
An experimental investigation of 235Uf6 fission produced plasmas

Period	Obligations	
07/01/78-06/30/80	FY79: $40,000	TOTAL: $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miley, G. H.	LARC/Hohl, F.	13-Physics

NSG 1609 **University of Illinois - Urbana** **2123**
Lasing characteristics of gas mixtures involving Uf6 application to nuclear pumping of lasers

Period	Obligations	
04/15/79-04/14/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Verdeyen, J. T.	LARC/Hohl, F.	13-Physics
Eden, J. G.		

NSG 2119 **University of Illinois - Urbana** **2124**
Pilot interaction with automated airborne decision making systems

Period	Obligations	
11/01/75-08/20/80	FY79: $64,100	TOTAL: $176,898
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, W. B.	ARC/Palmer, E. A.	99-Multi-Discip
	ARC/Wempe, T. E.	

NSG 3043 **University of Illinois - Urbana** **2125**
The effect of a zero g environment on flammability limits as determined using a standard flammability tube apparatus

Period	Obligations	
05/21/75-06/30/79	FY79:	TOTAL: $75,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strehlow, R. A.	LERC/Cochran, T. H.	43-Chem Engr

NSG 3098 **University of Illinois - Urbana** **2126**
Transient dynamic analysis of high-speed lightly loaded cylindrical roller bearings

Period	Obligations	
06/06/76-10/05/78	FY79:	TOTAL: $21,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Conry, T. F.	LERC/Scribbe, H. W.	46-Mech Engr

NSG 3293 **University of Illinois - Urbana** **2127**
The effect of a zero g environment on flammability limits as determined using a standard flammability tube apparatus

Period	Obligations	
08/21/79-08/20/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Strehlow, R. A.	LERC/Cochran, T. H.	13-Physics

NSG 5049 **University of Illinois - Urbana** **2128**
Effects of atmospheric refraction and turbulence on the accuracy of laser systems

Period	Obligations	
02/01/75-03/31/80	FY79: $30,810	TOTAL: $171,080
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ghia, K. N.	GSFC/Abshire, J. B.	45-Elec Engr
Ghia, U.	GSFC/Fitzmaurice, M. W.	

NSG 5213 **University of Illinois - Urbana** **2129**
Studies of the transport of nitric oxide using AE satellite data

Period	Obligations	
10/01/77-07/31/80	FY79: $23,000	TOTAL: $47,957
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sechrist, C. F., Jr.	GSFC/Spencer, N. W.	13-Physics

NSG 5278 **University of Illinois - Urbana** **2130**
Search for spectra of interstellar molecules against hot stars

Period	Obligations	
06/15/78-12/14/79	FY79:	TOTAL: $13,513
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snyder, L. E.	GSFC/Donn, B. D.	11-Astronomy
	GSFC/Stief, L. J.	

NSG 5294 **University of Illinois - Urbana** **2131**
Copernicus satellite observations

Period	Obligations	
08/01/78-07/31/80	FY79:	TOTAL: $6,823
Prin Invest	*NASA Tech Officer*	*CASE Category*
Crutcher, R. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

ILLINOIS (Continued)

NSG 5319 **University of Illinois - Urbana** **2132**
Theoretical studies of the solar corona, solar maximum mission

Period	Obligations	
01/15/79-01/14/81	FY79: $41,568	TOTAL: $41,568
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mouschovias, T. C.	GSFC/Donley, J. L	31-Atmos Sci

NSG 7044 **University of Illinois - Urbana** **2133**
Evolution of the cell and the translation process

Period	Obligations	
06/01/74-05/31/80	FY79: $75,060	TOTAL: $297,360
Prin Invest	*NASA Tech Officer*	*CASE Category*
Woese, C. R.	HQ-SB/Young, R. S.	12-Chemistry

NSG 7506 **University of Illinois - Urbana** **2134**
Studies of upper-atmosphere motions by UHF

Period	Obligations	
10/01/78-09/30/79	FY79: $7[illegible]000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bowhill, S. A.	HQ-ST/Seals, R. K., Jr. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7598 **University of Illinois - Urbana** **2135**
Observing compact objects workshop

Period	Obligations	
02/01/79-09/30/79	FY79: $7,143	TOTAL: $7,143
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pines, D. Lamb, F.	HQ-SC/Opp, A. G.	11-Astronomy

INDIANA

NAS 5-22987 **Indiana University - Bloomington** **2136**
Digital techniques applied to surface photometry of low contrast astronomical objects

Period	Obligations	
02/11/76-08/31/80	FY79: $14,311	TOTAL: $59,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burkhead, M. S.	GSFC/Hobbs, R. W.	11-Astronomy

NAS 8-33087 **Indiana University - Bloomington** **2137**
Correlated ground base observations in support of the HEAO-1 X-ray observatory

Period	Obligations	
06/01/78-07/26/80	FY79: $15,152	TOTAL: $45,129
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mufson, S. L. Wisniewski, W. Z. Johnson, H. L.	MSFC/Dabney, C. C.	11-Astronomy

NGR 15-003-118 **Indiana University - Bloomington** **2138**
Application of ultra-high sensitivity isotope ratio mass spectrometry to organic geochemistry and cosmochemistry

Period	Obligations	
06/20/72-05/31/80	FY79: $78,500	TOTAL: $555,466
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hayes, J. M.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7389 **Indiana University - Bloomington** **2139**
Development of gas extraction systems needed to prepare geologic samples for sulfur and oxygen isotopic analysis

Period	Obligations	
11/01/77-09/30/79	FY79:	TOTAL: $9,190
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ripley, E. M.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7520 **Indiana University - Bloomington** **2140**
Origin and evolution of sulfur in an archean volcano-sedimentary sequence, North Central Minnesota

Period	Obligations	
01/01/79-12/31/79	FY79: $12,144	TOTAL: $12,144
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ripley, E. M	HQ-SB/Young, R. S.	32-Geological Sci

NSG 9072 **Indiana University - Bloomington** **2141**
Investigation of regolith evolution through a petrographic and electronprobe analysis of soil samples

Period	Obligations	
07/14/78-07/13/80	FY79: $9,000	TOTAL: $18,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Basu, A.	JSC/McKay, D. S.	32-Geological Sci

NSG 9077 **Indiana University - Bloomington** **2142**
Characterization and evolution of Apollo 15 drill core soils, and the origin of green glass vitrophyres

Period	Obligations	
07/15/79-07/14/80	FY79: $21,000	TOTAL: $21,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Basu, A.	JSC/Harris, J. W.	32-Geological Sci

NSG 3183 **Indiana Univ.-Purdue U. at Indianapolis** **2143**
Numerical solution of the compressible boundary layer equations with viscous-inviscid interaction

Period	Obligations	
01/16/78-01/16/80	FY79: $23,288	TOTAL: $38,475
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bodonyi, R. J.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3294 **Indiana Univ.-Purdue U. at Indianapolis** **2144**
Finite element analysis of transonic flow through a cascade of airfoils using a self-adaptive mesh

Period	Obligations	
08/01/79-07/31/80	FY79: $56,411	TOTAL: $56,411
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ecer, A.	LERC/Chima, R. U.	41-Aero Engr

NAS 5-22816 **Purdue University** **2145**
Utility of correlation techniques on gravity and magnetic interpretation study

Period	Obligations	
11/24/75-08/31/78	FY79:	TOTAL: $48,489

Prin Invest	NASA Tech Officer	CASE Category
Hinze, A. J.	GSFC/Langel, R. A.	32-Geological Sci
Braile, L. W.		

NAS 5-24462 **Purdue University** **2146**
Earth resources data processing remote terminal support

Period	Obligations	
02/23/78-12/22/79	FY79: $7,712	TOTAL: $26,052

Prin Invest	NASA Tech Officer	CASE Category
Phillips, T. L.	GSFC/Gordon, F., Jr.	
Schwingendorf, S. K.		22-Computer Science

NAS 5-25030 **Purdue University** **2147**
Lithospheric models of the North American continent utilizing surface and satellite geophysical data

Period	Obligations	
05/04/78-01/04/80	FY79:	TOTAL: $60,000

Prin Invest	NASA Tech Officer	CASE Category
Hinze, W. J.	GSFC/Langel, R. A.	32-Geological Sci
Braile, L. W.		

NAS 6-2695 **Purdue University** **2148**
Services in support of a remote Laesys Terminal Flight Center

Period	Obligations	
11/15/75-04/30/79	FY79:	TOTAL: $35,186

Prin Invest	NASA Tech Officer	CASE Category
Phillips, T. L.	WFC/Maurer, H. E.	39-Env Sci, NEC
Schwingendorf, S. K.	WFC/Hancock, D. W.	

NAS 9-15081 **Purdue University** **2149**
Technical coordination and implementation of remote sensing experiments for analogous vegetative areas in the United States and the Soviet Union

Period	Obligations	
08/01/76-11/15/79	FY79: $99,857	TOTAL: $311,557

Prin Invest	NASA Tech Officer	CASE Category
Bauer, M. E.	JSC/McEwen, M. C.	39-Env Sci, NEC

NAS 9-15325 **Purdue University** **2150**
Develop an operational forest resource information system

Period	Obligations	
10/01/77-09/30/80	FY79: $275,000	TOTAL: $590,000

Prin Invest	NASA Tech Officer	CASE Category
Mroczynski, R.	JSC/Joosten, R. L.	39-Env Sci, NEC

NAS 9-15466 **Purdue University** **2151**
Remote sensing of agriculture, earth resources and man's environment

Period	Obligations	
12/01/77-11/30/79	FY79: $1,750,045	TOTAL: $2,902,009

Prin Invest	NASA Tech Officer	CASE Category
Landgrebe, D. A.	JSC/Erickson, J. D.	39-Env Sci, NEC

NAS 9-15508 **Purdue University** **2152**
Digital processing of LANDSAT (MSS) and topographic data to improve capabilities for computerized mapping of forest cover types

Period	Obligations	
12/16/77-01/15/80	FY79: $108,386	TOTAL: $200,549

Prin Invest	NASA Tech Officer	CASE Category
Hoffer, R. M.	JSC/Amsbury, D. L.	39-Env Sci, NEC

NAS 9-15889 **Purdue University** **2153**
Evaluation of Side Looking Airborne Radar (SLAR) and simulated thematic mapper Multi-Spectral Scanner (MSS) data for forest cover mapping using computer aided analysis techniques

Period	Obligations	
05/21/79-11/30/79	FY79: $63,775	TOTAL: $63,775

Prin Invest	NASA Tech Officer	CASE Category
Hoffer, R. M.	JSC/Amsbury, D. L.	32-Geological Sci

NCC 5 21 **Purdue University** **2154**
Lithospheric models of the North American continent derived from seismic refraction and surface wave studies

Period	Obligations	
07/01/79-06/30/80	FY79: $41,855	TOTAL: $41,855

Prin Invest	NASA Tech Officer	CASE Category
Braile, L. W	GSFC/Allenby, R. J.	32-Geological Sci

NGL 15-005-140 **Purdue University** **2155**
Origin of chondrites from relationships between fourteen key trace elements

Period	Obligations	
06/21/71-02/28/80	FY79: $65,000	TOTAL: $493,437

Prin Invest	NASA Tech Officer	CASE Category
Lipschutz, M. E.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NGL 15-005-186 **Purdue University** **2156**
Application of remote sensing technology to solution of problems in management of resources

Period	Obligations	
06/19/73-05/31/80	FY79	TOTAL: $1,195,000

Prin Invest	NASA Tech Officer	CASE Category
Weismiller, R. A.	HQ-ET/Vitale, J. A	39-Env Sci, NEC

NGT 15-005-790 **Purdue University** **2157**
Pre-cooperative engineering education program

Period	Obligations	
08/01/79-07/31/80	FY79: $3,474	TOTAL: $3,474

Prin Invest	NASA Tech Officer	CASE Category
Holec, D. E.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	LERC/Allen, R. P.	

NSG 1635 **Purdue University** **2158**
Multiple level techniques for computational fluid dynamics

Period	Obligations	
08/20/79-05/21/80	FY79: $27,905	TOTAL: $27,905

Prin Invest	NASA Tech Officer	CASE Category
McCarthy, D. R	LARC/Swanson, R. C.	41-Aero Engr
	LARC/Klunker, B. E.	

NSG 2192 **Purdue University** **2159**
Joint cooperative program in computer graphics
Period *Obligations*
11/01/76-01/31/80 FY79: $70,000 TOTAL: $210,000
Prin Invest *NASA Tech Officer* *CASE Category*
Anderson, D. C. ARC/Gregory, T. J 41-Aero Engr
White, P. R

NSG 2401 **Purdue University** **2160**
Plant diversity to support humans in a controlled ecology life support system ground-based demonstrator
Period *Obligations*
09/01/79-05/30/80 FY79: $38,000 TOTAL: $38,000
Prin Invest *NASA Tech Officer* *CASE Category*
Hoff, J. E. ARC/Zeitman, B. B. 59-Life Sci, NEC
Howe, J. M. ARC/Merek, E. L

NSG 2404 **Purdue University** **2161**
Higher plant species selection criteria for a closed ecological life support system. Photosynthetic and nutritional aspects
Period *Obligations*
09/01/79-05/31/80 FY79: $40,000 TOTAL: $40,000
Prin Invest *NASA Tech Officer* *CASE Category*
Mitchell, C. A. ARC/Zill, L. P. 59-Life Sci, NEC

NSG 3071 **Purdue University** **2162**
Gas film cooling of turbine vane surfaces
Period *Obligations*
09/01/75-06/30/80 FY79: TOTAL: $53,067
Prin Invest *NASA Tech Officer* *CASE Category*
L'Ecuyer, M. R. LERC/Davidson, H. W. 41-Aero Engr

NSG 3105 **Purdue University** **2163**
Expanding capabilities of NASA computer programs for fluid flow computations in turbomachinery
Period *Obligations*
06/01/76-06/01/80 FY79: TOTAL: $56,131
Prin Invest *NASA Tech Officer* *CASE Category*
Meinke, W. J LERC/Katsanis, T 41-Aero Engr
Ragsdell, K. M.

NSG 3119 **Purdue University** **2164**
An adaptive controller for an aircraft gas turbine propulsion system
Period *Obligations*
09/01/76-08/31/79 FY79: TOTAL: $28,319
Prin Invest *NASA Tech Officer* *CASE Category*
Leonard, R. G LERC/Lehtinen, B. 41-Aero Engr

NSG 3135 **Purdue University** **2165**
Aerodynamics parameters affecting turbopropeller performance
Period *Obligations*
01/15/77-09/15/80 FY79: $87,390 TOTAL: $188,857
Prin Invest *NASA Tech Officer* *CASE Category*
Sullivan, J. P. LERC/Serafini, J. S 41-Aero Engr

NSG 3185 **Purdue University** **2166**
Analytical and experimental study on impact damage of laminated composites
Period *Obligations*
10/31/77-02/29/80 FY79: $50,931 TOTAL: $95,186
Prin Invest *NASA Tech Officer* *CASE Category*
Sun, C. T. LERC/Chamis, C. C 41-Aero Engr

NSG 3213 **Purdue University** **2167**
Fuel sprays in high-speed air flows
Period *Obligations*
09/01/78-08/31/80 FY79: $51,018 TOTAL: $151,015
Prin Invest *NASA Tech Officer* *CASE Category*
Lefebvre, A. H LERC/Cooper, L. P. 41-Aero Engr
Skifstad, J. G

NSG 3237 **Purdue University** **2168**
Analysis and simulation of wind energy systems
Period *Obligations*
12/01/78-11/30/79 FY79: $49,870 TOTAL: $49,870
Prin Invest *NASA Tech Officer* *CASE Category*
Krause, P. C LERC/Gilbert, L. J 45-Elec Engr

NSG 3258 **Purdue University** **2169**
Atomization of broad-specification aircraft fuels
Period *Obligations*
05/15/79-04/30/80 FY79: $47,507 TOTAL: $47,507
Prin Invest *NASA Tech Officer* *CASE Category*
Shifstad, J. G. LERC/Heggard, J. B 46 Mech Engr
Lefebvre, A. H

NSG 3285 **Purdue University** **2170**
Three-dimensional aerodynamic of turbomachines
Period *Obligations*
07/01/79-06/30/80 FY79: $117,569 TOTAL: $117,569
Prin Invest *NASA Tech Officer* *CASE Category*
Fleeter, S LERC/Boldman, D. R 41-Aero Engr

NSG 4003 **Purdue University** **2171**
Handling and ride qualities of large flexible control-configured aircraft
Period *Obligations*
01/01/75-06/30/79 FY79: TOTAL: $140,796
Prin Invest *NASA Tech Officer* *CASE Category*
Laver, J. A DFRC/Berry, D. T 41-Aero Engr
DFRC/Cazier, F. W

NSG 5414 **Purdue University** **2172**
A quantitative applications-oriented evaluation of thematic mapper design specifications
Period *Obligations*
10/01/79-09/30/80 FY79: $50,977 TOTAL: $50,977
Prin Invest *NASA Tech Officer* *CASE Category*
Swain, P. H GSFC/Gordon, F., Jr 99-Multi-Discip
Landgrebe, D. A

INDIANA (Continued)

NSG 7167 **Purdue University** **2173**
High-time resolution photometry of flare stars simultaneous with X-ray satellite observations

Period	Obligations	
10/01/75-03/31/80	FY79: $8,033	TOTAL: $30,648
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moffett, T. J.	HQ-SC/Rosendhal, J. D.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7278 **Purdue University** **2174**
Characterization and elucidation of the mechanism of mechanical stress inhibition of plant growth

Period	Obligations	
10/01/76-09/30/79	FY79: $30,000	TOTAL: $88,476
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mitchell, C. A.	HQ-SB/Halstead, T. W.	51-Biological Sci
	HQ-SB/Geib, D. S.	

NAS 3-21018 **University of Notre Dame** **2175**
Feasibility study of liquid pool burning in reduced gravity

Period	Obligations	
07/28/77-05/10/79	FY79:	TOTAL: $45,648
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kanury, M.	LERC/Haggard, J. B.	11-Astronomy

NSG 1419 **University of Notre Dame** **2176**
Structure of separated flow regions occurring near the leading edge of air foils including transition

Period	Obligations	
06/01/77-10/31/79	FY79: $25,000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mueller, T. J.	LARC/Somers, D. M.	41-Aero Engr

NSG 2388 **University of Notre Dame** **2177**
Modular theory of inverse systems

Period	Obligations	
06/01/79-12/31/79	FY79: $10,721	TOTAL: $10,721
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sain, M. K.	ARC/Doolin, B. F.	49-Engr, NEC
Wyman, B. F.		

NSG 3048 **University of Notre Dame** **2178**
Alternatives for jet engine control

Period	Obligations	
03/01/75-07/31/80	FY79: $50,000	TOTAL: $173,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sain, M. K.	LERC/Seldner, K.	45-Elec Engr

NSG 3133 **University of Notre Dame** **2179**
Correlation of single stage data to obtain improved models for loss in axial compressors

Period	Obligations	
11/01/76-02/28/79	FY79:	TOTAL: $39,828
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Roberts, W. B.	LERC/Crouse, J. E.	41-Aero Engr
Sloviski, J. A.	LERC/Sandercock, D. M.	

NSG 3182 **University of Notre Dame** **2180**
Investigation of electromagnetic waves on superconducting magnets as mechanism of potential coil damage

Period	Obligations	
01/03/78-11/04/79	FY79:	TOTAL: $16,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gabriel, G. J.	LERC/Burkhart, J. A.	45-Elec Engr
	LERC/Bercaw, R. W.	

NSG 3195 **University of Notre Dame** **2181**
Study of aerodynamic mechanism for noise generated by rotor-stator interaction

Period	Obligations	
05/01/78-04/30/81	FY79:	TOTAL: $103,720
Prin Invest	*NASA Tech Officer*	*CASE Category*
Atassi, H.	LERC/Scott, J. N.	13-Physics
	LERC/Dittmar, J. H.	

IOWA

NAS 8-33013 **Iowa State University** **2182**
Study of the X-ray emission from a strong gamma-ray source

Period	Obligations	
05/02/78-05/01/79	FY79:	TOTAL: $9,794
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lamb, R. C.	MSFC/Dailey, C. C.	11-Astronomy

NAS 8-33334 **Iowa State University** **2183**
Supernova remnants near COS-B gamma ray sources

Period	Obligations	
02/13/79-02/29/80	FY79: $13,671	TOTAL: $13,671
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Lamb, R. C.	MSFC/Jones, J. B., Jr.	11-Astronomy

NCA 2-340802 **Iowa State University** **2184**
Simulation of Martian aeolian phenomena

Period	Obligations	
09/01/78-08/31/80	FY79: $11,660	TOTAL: $23,870
Prin Invest	*NASA Tech Officer*	*CASE Category*
Iversen, J. D.	ARC/Pollack, J. B.	49-Engr, NEC

NCA 2-340901 **Iowa State University** **2185**
Techniques for generating unsteady airfoil flows

Period	Obligations	
10/01/78-10/31/79	FY79:	TOTAL: $12,645
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Cook, W. J.	ARC/Presley, L. L.	46-Mech Engr

C-2

NCA 2-340902 **Iowa State University** **2186**
Theoretical models for the formation of the primordial atmospheres of terrestrial planets, the interiors of Saturn, Uranus, Neptune, and atmospheres of low temperature stars

Period	Obligations	
01/01/79-12/31/79	FY79: $18,249	TOTAL: $18,249
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grossman, A. S.	ARC/Pollack, J. B.	13-Physics
Podolak, M.	ARC/Reynolds, R. T.	

NCC 1 17 **Iowa State University** **2187**
Analysis of flows with shocks

Period	Obligations	
10/01/79-09/30/80	FY79: $34,908	TOTAL: $34,908
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. A.	LARC/Salas, M. D.	41-Aero Engr

NCC 2 19 **Iowa State University** **2188**
Wing/body interference flow investigation

Period	Obligations	
07/01/79-02/28/80	FY79: $43,309	TOTAL: $43,309
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vogel, J. M.	ARC/Hicks, R. M.	41-Aero Engr
James, W. D.	ARC/Corsiglia, V. R.	
Genalo, L. J.		

NCC 2 22 **Iowa State University** **2189**
Wing/nacelle interference flow investigation

Period	Obligations	
09/01/79-10/31/80	FY79: $21,105	TOTAL: $21,105
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nogel, J	HQ-/Corsiglia, V. R.	41-Aero Engr

NGR 16-002-038 **Iowa State University** **2190**
Calculation of viscous compressible flow

Period	Obligations	
10/07/71-07/31/80	FY79: $25,904	TOTAL: $165,163
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tannehill, J. C.	ARC/Rakich, J. V.	41-Aero Engr
	ARC/Marvin, J. G.	

NSG 1372 **Iowa State University** **2191**
Periodic analysis of large space structures

Period	Obligations	
01/01/77-12/31/79	FY79: $25,000	TOTAL: $84,945
Prin Invest	*NASA Tech Officer*	*CASE Category*
McDaniel, T. J.	LARC/Fralich, R. W.	49-Engr, NEC
	LARC/Pinson, L. D.	

NSG 1535 **Iowa State University** **2192**
Analysis of flows with shocks

Period	Obligations	
10/01/78-09/30/79	FY79:	TOTAL: $29,961
Prin. Invest	*NASA Tech Office*	*CASE Category*
Anderson, D. A.	LARC/Salas, M. D.	41-Aero Engr

NSG 1538 **Iowa State University** **2193**
Symbolic solution of linear differential equations

Period	Obligations	
06/01/78-05/31/80	FY79: $7,618	TOTAL: $14,804
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feinberg, R. B.	LARC/Shoosmith, J. N.	21-Mathematics

NSG 1582 **Iowa State University** **2194**
Trailing vortex interaction and decay

Period	Obligations	
12/01/78-09/30/80	FY79: $31,658	TOTAL: $31,658
Prin Invest	*NASA Tech Officer*	*CASE Category*
Iversen, J. D.	LARC/Morris, D. J.	41-Aero Engr

NSG 1605 **Iowa State University** **2195**
Load deflection characteristics of inflated structures

Period	Obligations	
04/01/79-03/31/80	FY79: $25,006	TOTAL: $25,006
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baumgarten, J. R.	LARC/Tanner, J. A.	46-Mech Engr

NSG 2091 **Iowa State University** **2196**
Study of viscous cross-flow effects on cylinders at high Reynolds numbers

Period	Obligations	
07/01/75-11/30/80	FY79: $10,700	TOTAL: $112,544
Prin Invest	*NASA Tech Officer*	*CASE Category*
James, W. D.	ARC/Malcolm, G. N.	41-Aero Engr
	ARC/Chapman, G. T.	

NSG 2257 **Iowa State University** **2197**
Low speed, high lift aerodynamics

Period	Obligations	
09/01/77-10/31/79	FY79:	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
James, W. D.	ARC/Olson, L. E.	41-Aero Engr
	ARC/Corsiglia, V. R.	

NSG 5199 **Iowa State University** **2198**
Search for an X-ray identification of a strong gamma-ray source

Period	Obligations	
08/01/77-04/30/79	FY79:	TOTAL: $11,498
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lamb, R. C.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5339 **Iowa State University** **2199**
Research of extended-range forecasting problems blocking

Period	Obligations	
04/01/79-05/13/80	FY79: $45,245	TOTAL: $45,245
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chen, T.	GSFC/Halem, M.	31-Atmos Sci

NAS 2-6553 **University of Iowa** **2200**
Pioneer F/G data analysis: Jovian charged particles experiment

Period	Obligations	
07/21/71-09/30/80	FY79: $198,575	TOTAL: $860,300
Prin Invest	*NASA Tech Officer*	*CASE Categor*
VanAllen, J. A.	ARC/Hall, C. F.	11-Astronomy
Goertz, C. K.	ARC/Porter, D. L.	

NAS 5-11064 **University of Iowa** **2201**
Low energy electrons and protons experiment for IMP-H&J

Period	Obligations	
05/31/68-09/30/79	FY79:	TOTAL: $840,656
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Frank, L. A.	GSFC/Gemmell, J. D.	13-Physics

NAS 5-11279 **University of Iowa** **2202**
Solar wind plasma wave experiment for the Helios missions

Period	Obligations	
03/30/70-05/15/80	FY79: $5,628	TOTAL: $1,519,773
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Tabakoff, W.	GSFC/Gemmell, J. D.	11-Astronomy
Hamed, A.		

NAS 5-11431 **University of Iowa** **2203**
Ac electric and magnetic fields experiment

Period	Obligations	
05/21/71-03/31/80	FY79:	TOTAL: $650,387
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gurnett, D. A.	GSFC/Davis, M. A.	31-Atmos Sci

NAS 5-20093 **University of Iowa** **2204**
Plasma wave experiment for International Sun-Earth Explorer spacecraft A&B

Period	Obligations	
05/20/74-09/30/80	FY79: $195,523	TOTAL: $1,660,768
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gurnett, D. A.	GSFC/Davis, M. A.	13-Physics

NAS 5-20094 **University of Iowa** **2205**
Magnetospheric and interplanetary plasma for International Sun-Earth Explorer mother & daughter spacecraft

Period	Obligations	
05/20/74-10/31/79	FY79: $259,958	TOTAL: $1,439,600
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Frank, L. A.	GSFC/Davis, M. A.	13-Physics

NAS 5-24293 **University of Iowa** **2206**
Global auroral imaging at visable and ultraviolet wavelengths for the dynamic Explorer

Period	Obligations	
07/26/77-04/28/81	FY79: $109,000	TOTAL: $628,614
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Frank, L. A.	GSFC/Fellerman, K. D.	13-Physics
Ackerson, K. L.	GSFC/Lidston, J. M.	
Carovillano, R. L.		

NAS 5-24294 **University of Iowa** **2207**
Plasma wave experiment for the Dynamic Explorer (DE)

Period	Obligations	
07/26/77-04/28/81	FY79: $242,000	TOTAL: $629,779
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Shawhan, S. D.	GSFC/Fellerman, K. D.	13-Physics
Gurnett, D. A.	GSFC/Lidston, J. M.	

NAS 5-24336 **University of Iowa** **2208**
International Sun-Earth Explorer-A experiment data reduction and analysis

Period	Obligations	
10/11/77-10/10/80	FY79: $7,000	TOTAL: $54,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gurnett, D. A.	GSFC/Heppner, J. P.	13-Physics

NAS 5-25530 **University of Iowa** **2209**
Data reduction and analysis for measurements of low-energy electrons and protons in the earth's magentosphere and the interplanetary medium

Period	Obligations	
10/01/79-10/31/80	FY79: $70,980	TOTAL: $70,980
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Frank, L. A.	GSFC/Gemmell, J. D	13-Physics

NAS 8-32807 **University of Iowa** **2210**
Definition of instruments for an ejectable plasma diagnostics package for Spacelab 2 mission

Period	Obligations	
10/03/77-09/30/82	FY79: $989,593	TOTAL: $1,827,431
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Shawhan, S. D.	MSFC/Guynes, B. V.	31-Atmos Sci
	MSFC/Ise, R.	

NGL 16-001-002 **University of Iowa** **2211**
Theoretical & experimental studies related to particles & fields associated with major bodies of solar system & with interplanetary space

Period	Obligations	
05/23/62-11/30/81	FY79: $265,000	TOTAL: $5,319,196
Prin Invest	*NASA Tech Officer*	*CASE Categor*
VanAllen, J. A.	HQ-ST/Wiskerchen, M. J.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 16-001-043 **University of Iowa** **2212**
Waves in plasmas

Period	Obligations	
03/28/67-11/30/81	FY79: $125,000	TOTAL: $1,014,986
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gurnett, D. A.	HQ-ST/Kaiser, M. L.	13-Physics
	HQ-ST/Schmerling, E. R.	

IOWA (Continued)

NSG 1499 **University of Iowa** **2213**
Effects of misalignment on mechanical behavior of metals in creep

Period 03/01/78-12/31/79 *Obligations* FY79: TOTAL: $29,632
Prin Invest Wu, H. C.
NASA Tech Officer LARC/Rummler, D. R.; LARC/Swann, R. T.
CASE Category 47-Materials Engr

NSG 2300 **University of Iowa** **2214**
Experimental study of trailing edge and near-wake flows

Period 02/01/78-01/31/80 *Obligations* FY79: $51,940 TOTAL: $103,390
Prin Invest Ramaprian, B. R.; Patel, V. C.
NASA Tech Officer ARC/Marvin, J. G.; ARC/Cleary, J. W.
CASE Category 41-Aero Engr

NSG 2327 **University of Iowa** **2215**
Laser manipulation of metallic vapors

Period 08/01/78-07/31/80 *Obligations* FY79: $59,892 TOTAL: $117,768
Prin Invest Stwalley, W. C.; Yang, S. C.; Zemke, W. T.
NASA Tech Officer ARC/Stallcop, J. R.; ARC/McKenzie, R. L.
CASE Category 13-Physics

NSG 3117 **University of Iowa** **2216**
Boundary layer flow transition and separation in inlets of V/STOL and other high performance propulsion system

Period 01/01/77-11/01/79 *Obligations* FY79: $36,918 TOTAL $69,666
Prin Invest Chou, D. C.
NASA Tech Officer LERC/Stockman, N. O.; LERC/Shaw, R. J.
CASE Category 41-Aero Engr

NSG 3305 **University of Iowa** **2217**
Development of finite differential method for internal computational fluid mechanics

Period 09/01/79-08/31/80 *Obligations* FY79: $38,697 TOTAL: $38,697
Prin Invest Chen, C. J.
NASA Tech Officer LERC/Johnson, G. M.
CASE Category 41-Aero Engr

NSG 7412 **University of Iowa** **2218**
Analysis of cometary gas and dust

Period 01/01/78-05/31/79 *Obligations* FY79: TOTAL: $22,255
Prin Invest Neff, J. S.
NASA Tech Officer HQ-SL/Brunk, W. E.; HQ-SL/Quaide, W. L.
CASE Category 11-Astronomy

NSG 7471 **University of Iowa** **2219**
Experiments on spin-aligned atoms

Period 07/01/78-06/30/80 *Obligations* FY79: $69,241 TOTAL: $118,701
Prin Invest Stwalley, W. C.; Webeler, R. W.
NASA Tech Officer HQ-RT/Schwenk, F. C.
CASE Category 13-Physics

NSG 7632 **University of Iowa** **2220**
Investigation of charged particle acceleration mechanisms in space plasmas

Period 07/01/79-09/30/80 *Obligations* FY79: $56,000 TOTAL: $56,000
Prin Invest Joyce, G.
NASA Tech Officer HQ-ST/Hedin, A. E.; HQ-ST/Schmerling, E. R.
CASE Category 19-Phys Sci, NEC

NSG 9060 **University of Iowa** **2221**
Neurocirculatory control mechanisms in humans: Role of cardiopulmonary baroreceptors

Period 08/01/77-07/31/80 *Obligations* FY79: $35,000 TOTAL: $80,899
Prin Invest Abboud, F. M.
NASA Tech Officer JSC/Hull, W. E.
CASE Category 56-Medical Sciences

KANSAS

NAS 9-14899 **Kansas State University** **2222**
Estimated winter wheat yield from crop growth predicted by LANDSAT

Period 03/15/76-07/31/80 *Obligations* FY79: $67,000 TOTAL: $219,734
Prin Invest Kanemasu, E. T.
NASA Tech Officer JSC/Baldwin, R. R.
CASE Category 31-Atmos Sci

NGL 17-001-026 **Kansas State University** **2223**
Infrared laboratory studies of synthetic planetary atmospheres

Period 01/10/67-11/30/79 *Obligations* FY79: $13,000 TOTAL $265,554
Prin Invest Williams, D.
NASA Tech Officer HQ-SL/Murphy, R. E.; HQ-SL/Mitz, M. A
CASE Category 31-Atmos Sci

NSG 7478 **Kansas State University** **2224**
Geologic map of Kuiper quadrangle of Mercury

Period 09/01/77-08/31/78 *Obligations* FY79: $14,002 TOTAL: $14,002
Prin Invest Underwood, J. R., Jr.
NASA Tech Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 7580 **Kansas State University** **2225**
Geology of Libyan desert glass site, S.W. Egypt

Period	Obligations	
03/01/79-02/29/80	FY79: $2,298	TOTAL: $2,298

Prin Invest	NASA Tech Officer	CASE Category
Underwood, J. R., Jr.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7613 **Kansas State University** **2226**
Northern plains of Mars

Period	Obligations	
06/01/79-05/30/80	FY79: $17,603	TOTAL: $17,603

Prin Invest	NASA Tech Officer	CASE Category
Underwood, J. R., Jr.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NAS 1-15770 **University of Kansas** **2227**
Feasibility study for advanced technology integration for general aviation

Period	Obligations	
04/10/79-04/09/80	FY79: $81,985	TOTAL: $81,985

Prin Invest	NASA Tech Officer	CASE Category
Roskam, J. Kohlman, D. L.	LARC/Holmes, B. J.	41-Aero Engr

NAS 5-23777 **University of Kansas** **2228**
Microwave remote sensing of snow

Period	Obligations	
11/23/76-08/09/81	FY79:	TOTAL: $150,085

Prin Invest	NASA Tech Officer	CASE Category
Ulaby, F. T.	GSFC/Rango, A. GSFC/Shive, J.	45-Elec Engr

NAS 5-25807 **University of Kansas** **2229**
Evaluation of the measurement of the microwave back-scatter coefficient with active microwave systems

Period	Obligations	
07/31/79-09/30/80	FY79: $15,000	TOTAL: $15,000

Prin Invest	NASA Tech Officer	CASE Category
Ulaby, F. T.	GSFC/Schmugge, T. J.	31-Atmos Sci

NAS 9-14052 **University of Kansas** **2230**
Joint soil moisture experiment

Period	Obligations	
04/01/74-11/30/79	FY79: $125,000	TOTAL: $699,394

Prin Invest	NASA Tech Officer	CASE Category
Ulaby, F. T.	JSC/Demel, K. J.	39-Env Sci, NEC

NAS 9-15421 **University of Kansas** **2231**
Radar measurements in agricultural applications

Period	Obligations	
10/01/77-01/31/80	FY79: $112,980	TOTAL: $237,980

Prin Invest	NASA Tech Officer	CASE Category
Ulaby, F. T.	JSC/Demel, K. J. JSC/Baldwin, R. R.	31-Atmos Sci

NCC 1 6 **University of Kansas** **2232**
A research program to reduce interior noise in general aviation airplanes

Period	Obligations	
05/01/79-04/30/80	FY79: $74,655	TOTAL: $74,655

Prin Invest	NASA Tech Officer	CASE Category
Roskam, J. Unz, H.	LARC/Stephens, D. G.	41-Aero Engr

NCC 1 18 **University of Kansas** **2233**
Investigation of optimum wing configurations with edge separation

Period	Obligations	
06/15/79-06/14/80	FY79: $29,984	TOTAL: $29,984

Prin Invest	NASA Tech Officer	CASE Category
Lan, C. E. Pao, J. L.	LARC/Campbell, J. F.	41-Aero Engr

NGL 17-004-024 **University of Kansas** **2234**
Research on the applications of satellite remote sensing

Period	Obligations	
04/06/72-03/31/82	FY79: $150,000	TOTAL: $950,000

Prin Invest	NASA Tech Officer	CASE Category
Barr, B. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 1046 **University of Kansas** **2235**
Effects of aeroelasticity on control effectiveness

Period	Obligations	
06/10/74-01/31/80	FY79:	TOTAL: $161,350

Prin Invest	NASA Tech Officer	CASE Category
Roskam, J. Lan, C. E. Mehrotra, S.	LARC/Lamar, J. E. LARC/Polhamus, E. C.	41-Aero Engr

NSG 1281 **University of Kansas** **2236**
Statistical distribution of mechanical properties of graphite-epoxies

Period	Obligations	
07/15/76-12/31/79	FY79: $5,499	TOTAL: $74,939

Prin Invest	NASA Tech Officer	CASE Category
Reese, C. D.	LARC/Howell, W. E. LARC/Dexter, H. B.	47-Materials Engr

NSG 1397 **University of Kansas** **2237**
Remote sensing of oceans

Period	Obligations	
02/15/77-05/31/80	FY79: $117,408	TOTAL: $142,439

Prin Invest	NASA Tech Officer	CASE Category
Moore, R. K.	LARC/Schroeder, L. C. LARC/Jones, W. L.	33-Oceanography

NSG 1537 **University of Kansas** **2238**
Investigation of optimum wing configurations with edge separation

Period	Obligations	
06/15/78-08/31/79	FY79:	TOTAL: $24,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lan, C. E.	LARC/Campbell, J. F.	41-Aero Engr

NSG 1554 **University of Kansas** **2239**
Radar discrimination of oil spills on the sea

Period	Obligations	
07/24/78-12/23/79	FY79:	TOTAL: $38,713
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moore, R. K.	LARC/Croswell, W. F.	45-Elec Engr
Yu, Y. S.	LARC/Fedors, J. C.	

NSG 1574 **University of Kansas** **2240**
Correlation of theoretical prediction with tunnel data and flight data on the Advanced Technology Light Twin Engine (ATLIT) airplane

Period	Obligations	
11/01/78-06/30/80	FY79: $57,505	TOTAL: $57,505
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roskam, J.	LARC/Hassell, J. L., Jr.	41-Aero Engr

NSG 1629 **University of Kansas** **2241**
An investigation of vortex induced aerodynamic characteristics of supersonic cruise configurations

Period	Obligations	
06/16/79-06/15/80	FY79: $20,970	TOTAL: $20,970
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lan, C. E.	LARC/Lamar, J. E.	41-Aero Engr

NSG 1633 **University of Kansas** **2242**
Analysis of performance and handling qualities considerations for wake modification devices on agricultural aircraft

Period	Obligations	
09/01/79-08/31/80	FY79: $26,454	TOTAL: $26,454
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lenzen, K. H.	LARC/Holmes, B. J.	41-Aero Engr

NSG 3290 **University of Kansas** **2243**
Self consistent numerical simulation of plasma insulator interactions in space

Period	Obligations	
08/16/79-08/15/80	FY79: $39,615	TOTAL: $39,615
Prin Invest	*NASA Tech Officer*	*CASE Category*
Armstrong, T. P.	LERC/Hallenback, C. A.	13-Physics
Enoch, J.	LERC/Aron, P. R.	
Wiseman, G. G.		

NSG 4008 **University of Kansas** **2244**
Analysis of structural components for ultra high speed aircraft

Period	Obligations	
05/01/76-04/30/81	FY79:	TOTAL: $40,416
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lenzen, K. H.	DFRC/Jenkins, J. M.	41-Aero Engr

NSG 4017 **University of Kansas** **2245**
Analyze and test the flight control system for the DAST vehicle

Period	Obligations	
06/01/78-12/31/80	FY79:	TOTAL: $53,076
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kotsabasis, A.	DFRC/Edwards, J. W.	41-Aero Engr
Roskam, J.	DFRC/Deets, D. A.	

NSG 4019 **University of Kansas** **2246**
Study of new flight test techniques

Period	Obligations	
01/22/79-01/21/80	FY79: $58,409	TOTAL: $58,409
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roskam, J.	DFRC/Kordes, E. E.	41-Aero Engr
Klein, R. L.	DFRC/Szalai, K. J.	
Kohlman, D. L.		

NSG 4021 **University of Kansas** **2247**
Investigation of drag reduction for tractor trailer vehicles with air deflector and boat tail

Period	Obligations	
01/01/79-08/31/79	FY79: $7,566	TOTAL: $7,566
Prin Invest	*NASA Tech Officer*	*CASE Category*
Muirhead, V. U.	DFRC/Saltzman, E. J.	49-Engr, NEC

NSG 4023 **University of Kansas** **2248**
Drag reduction/delivery truck

Period	Obligations	
07/01/79-06/30/80	FY79: $11,934	TOTAL: $11,934
Prin Invest	*NASA Tech Officer*	*CASE Category*
Muirhead, V. U.	DFRC/Saltzman, E. J.	49-Engr, NEC

NSG 4026 **University of Kansas** **2249**
A system study for the application of distributed processors to flight testing techniques

Period	Obligations	
07/01/79-06/30/80	FY79: $45,812	TOTAL: $45,812
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kelley, G. L.	DFRC/Szalai, K. J.	45-Elec Engr
	DFRC/Abbott, L. W.	

NSG 5335 **University of Kansas** **2250**
Active microwave investigation of snow hydrology

Period	Obligations	
02/01/79-01/31/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ulaby, F. T.	GSFC/Chang, A. T.	32-Geological Sci

NSG 7351 **University of Kansas** **2251**
Structural study of the Kentland, Indiana impact structure

Period	Obligations	
05/17/77-12/31/78	FY79:	TOTAL: $13,169
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanSchmus, W. R.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

KANSAS (Continued)

NCC 1 21 **Wichita State University** **2252**
Weight estimation techniques for hypersonic flight vehicles

Period	Obligations	
09/01/79-05/31/80	FY79: $20,716	TOTAL: $20,716
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cook, E. L	LARC/Watts, J. D. LARC/Jackson, L. R.	41-Aero Engr

NGR 17-003-021 **Wichita State University** **2253**
Experimental studies of flow separation and stalling on two-dimensional airfoils at low speeds, phase I

Period	Obligations	
12/01/73-01/31/79	FY79:	TOTAL: $164,108
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rodgers, E. J. Wentz, W. H., Jr.	LARC/Noonan, K. W. LARC/McGhee, R. J.	41-Aero Engr

NSG 1165 **Wichita State University** **2254**
Computer and wind tunnel development of flaps and control surfaces for advanced technology general aviation airfoils

Period	Obligations	
06/01/75-10/31/79	FY79: $31,149	TOTAL: $246,185
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wentz, W. H., Jr	LARC/McGhee, R. J LARC/Barnwell, R. W.	41-Aero Engr

NSG 1575 **Wichita State University** **2255**
Supersonic burning in separated flow regions

Period	Obligations	
11/01/78-10/31/79	FY79: $26,907	TOTAL: $26,907
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zumwalt, G. W.	LARC/Huber, P. W. LARC/Jones, R. A.	41-Aero Engr

NSG 3186 **Wichita State University** **2256**
Numerical modeling of magnetohydrodynamic channel flow

Period	Obligations	
03/01/78-01/15/80	FY79: $9,900	TOTAL: $19,801
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jordan, K. D.	LERC/Smith, J. M. LERC/Pian, C. C.	21-Mathematics

NSG 3277 **Wichita State University** **2257**
Feasibility studies of spoiler and aileron control systems for large wind turbine

Period	Obligations	
06/01/79-11/30/79	FY79: $25,641	TOTAL: $25,641
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wentz, W. H., Jr. Snyder, M. H. Calhoun, J. T.	LERC/Richards, T. R. LERC/Finnegan, P. M.	41-Aero Engr

KENTUCKY

NSG 801 **Kentucky State University** **2258**
Zoological effects of variations in atmospheric oxygen levels

Period	Obligations	
02/27/74-04/29/80	FY79: $40,551	TOTAL: $219,321
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kloek, G.	KSC/Morrison, J. D.	59-Life Sci, NEC

NAS 9-15452 **University of Kentucky** **2259**
Development of limb volume measuring system

Period	Obligations	
11/01/77-10/31/79	FY79: $24,971	TOTAL: $45,121
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bhagat, P. K.	JSC/Alexander, C.	56-Medical Sciences

NASW 3039 **University of Kentucky** **2260**
Operation of a state technical application program

Period	Obligations	
02/01/77-08/31/80	FY79 $141,558	TOTAL: $491,558
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-ET/Dolby, W	99-Multi-Discip

NSG 1501 **University of Kentucky** **2261**
An algorithm to generate input data from meteorological and space shuttle observations to validate a CH4-Co model

Period	Obligations	
02/01/78-06/30/80	FY79 $39,197	TOTAL: $69,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peters, L. K. Yamanis, J.	LARC/Reichle, H. G., Jr.	31-Atmos Sci

NSG 2318 **University of Kentucky** **2262**
Dynamically imposed oscillating forces for preventing cardiovascular deconditioning

Period	Obligations	
05/01/78-04/30/80	FY79: $60,641	TOTAL: $121,046
Prin Invest	*NASA Tech Officer*	*CASE Category*
Knapp, C. F.	ARC/Sandler, H	56-Medical Sciences

NSG 3114 **University of Kentucky** **2263**
Study effects of buoyancy on flame spreading across beds of solid fuel

Period	Obligations	
07/01/76-09/30/80	FY79: $82,451	TOTAL: $112,234
Prin Invest	*NASA Tech Officer*	*CASE Category*
Altenkirch, R. A. Eichhorn, R.	LERC/Cochran, T. H.	46-Mech Engr

KENTUCKY (Continued)

NAS 8-31233 **University of Louisville** **2264**
Turbopump technology improvements via transient rotordynamics analysis

Period 11/14/74-07/01/80 *Obligations* FY79: $35,993 TOTAL: $158,224
Prin Invest. Childs, D. W.
NASA Tech Officer MSFC/Winder, S. W.; MSFC/Goetz, O. K.
CASE Category 42-Astro Engr

NCA 2-400901 **University of Louisville** **2265**
Susceptibility to infection: Interrelationship of interferon and genetic factors

Period 11/01/78-10/31/80 *Obligations* FY79: $15,000 TOTAL: $15,000
Prin Invest Sonnenfeld, G.
NASA Tech Officer ARC/Mandel, A. D.
CASE Category 56-Medical Sciences

NSG 2325 **University of Louisville** **2266**
Renal function, water and electrolyte balance and intestinal transport in hypokinetic animals

Period 06/01/78-10/30/79 *Obligations* FY79: $30,000 TOTAL: $54,768
Prin Invest Musacchia, X. J.
NASA Tech Officer ARC/Holton, E. M.
CASE Category 51-Biological Sci

NSG 3200 **University of Louisville** **2267**
Dynamic seal testing and analysis for turbopump rotor dynamic stability and synchronous response technology improvements

Period 06/01/78-11/01/80 *Obligations* FY79: $99,993 TOTAL: $134,992
Prin Invest Childs, D. W.; Dressman, J. B.
NASA Tech Officer LERC/Fleming, D. P.; LERC/Ludwig, L. P.
CASE Category 46-Mech Engr

NSG 7441 **University of Louisville** **2268**
Baseline studies on the embryonic development of the mouse cranial sensory systems

Period 02/01/78-04/30/79 *Obligations* FY79: TOTAL: $20,000
Prin Invest Fuller, P. M.
NASA Tech Officer HQ-SB/Halstead, T. W.; HQ-SB/Geib, D. S.
CASE Category 51-Biological Sci

NAS 8-33387 **Western Kentucky University** **2269**
MSFC solar heating and cooling: High Speed Performance (HISPER) code validation

Period 07/02/79-01/01/80 *Obligations* FY79: $15,000 TOTAL: $15,000
Prin Invest Healy, H.
NASA Tech Officer MSFC/Stonemetz, R. E.; MSFC/Elkins, R. F.
CASE Category 31-Atmos Sci

NSG 5238 **Western Kentucky University** **2270**
Ultraviolet observations of high excitation planetary nebulae

Period 02/15/78-05/11/80 *Obligations* FY79: $9,000 TOTAL: $15,813
Prin Invest Hackney, R. L.; Hackney, K. R.
NASA Tech Officer GSFC/Boggess, A.
CASE Category 11-Astronomy

LOUISIANA

NGL 19-001-105 **Louisiana State University - Baton Rouge** **2271**
Interpretation of remote sensing data in the Bayou la Fourche region of South Louisiana

Period 04/06/72-08/15/79 *Obligations* FY79. TOTAL: $425,000
Prin Invest Whitehurst, C. A.
NASA Tech Officer HQ-ET/Vitale, J. A.
CASE Category 39-Env Sci, NEC

NAS 9-9317 **Louisiana State University - Shreveport** **2272**
Study of modulatory effects of solar wind in galactic cosmic rays

Period 04/07/69-06/30/80 *Obligations* FY79: TOTAL: $30,160
Prin Invest Bankston, J. D., Jr.
NASA Tech Officer JSC/Giuli, R. T.
CASE Category 11-Astronomy

NAS 9-15950 **Louisiana State University - Shreveport** **2273**
Development of a new noninvasive method to determine bone integrity in vivo

Period 09/27/79-08/31/80 *Obligations* FY79: $10,000 TOTAL: $10,000
Prin Invest Albright, J. A.; Saha, S.; Anders, F.
NASA Tech Officer JSC/Altchuler, S. I.
CASE Category 56-Medical Sciences

NSG 7542 **Louisiana State University - Shreveport** **2274**
Paleohydrology of Mars

Period 04/01/79-03/31/80 *Obligations* FY79: $30,108 TOTAL: $30,108
Prin Invest Nummedal, D.
NASA Tech Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 7357 **Northeast Louisiana University** **2275**
Mercury geologic mapping: Kuiper quadrangle

Period 06/01/77-12/31/79 *Obligations* FY79: TOTAL: $16,417
Prin Invest Dehon, R. A.
NASA Tech Officer HQ-SL/Dwornik, S. E.; HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 7420 **Northeast Louisiana University** **2276**
Thickness of mare basalts. Western Mare Basin

Period	Obligations	
03/01/78-06/30/79	FY79:	TOTAL: $11,716
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dehon, R. A.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7534 **Northeast Louisiana University** **2277**
Stratigraphy and crater morphology

Period	Obligations	
02/01/79-01/31/80	FY79: $16,061	TOTAL: $16,061
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dehon, R. A.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7628 **Northeast Louisiana University** **2278**
Detection of buried surfaces on Mars

Period	Obligations	
08/01/79-07/31/80	FY79: $7,514	TOTAL: $7,514
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dehon, R. A.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NAS 1-15335 **Southern University - Baton Rouge** **2279**
Atomic oxygen stimulated outgassing experiment for the long duration exposure facility, phase I and II

Period	Obligations	
04/07/78-04/01/80	FY79: $25,426	TOTAL: $50,426
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scott, R. L., Jr.	LARC/O'Neal, R. L. LARC/Carter, D. J.	31-Atmos Sci

NGR 19-005-006 **Southern University - Baton Rouge** **2280**
Research in the many-particle theory of nuclear systems with application to neutron star matter

Period	Obligations	
10/17/72-01/31/79	FY79:	TOTAL: $107,314
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yang, C. H.	JPL/Estabrook, F. B. JPL/Zmuidzinas, J. S.	11-Astronomy

NSG 2041 **Southern University - Baton Rouge** **2281**
Analytical model for the dynamic stress and deformation studies in the left ventricle

Period	Obligations	
08/19/74-10/31/79	FY79:	TOTAL: $99,301
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ray, G.	ARC/Sandler, H.	59-Life Sci, NEC

NSG 8025 **Southern University - Baton Rouge** **2282**
Inhibitor analysis for a solar heating and cooling system

Period	Obligations	
01/02/75-08/15/78	FY79:	TOTAL: $71,572
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tabony, J.	MSFC/Williamson, J. G. MSFC/Kent, M. I.	46-Mech Engr

NSG 8053 **Southern University - Baton Rouge** **2283**
Development of a fault tolerant microprocessor based computer systems for space flight

Period	Obligations	
09/01/77-08/31/79	FY79:	TOTAL: $25,709
Prin Invest	*NASA Tech Officer*	*CASE Category*
Montgomery, V. T.	MSFC/White, J. B. MSFC/Kent, M. I.	45-Elec Engr

NSG 8056 **Southern University - Baton Rouge** **2284**
Research study of determination of particle size in clouds

Period	Obligations	
10/15/77-10/14/78	FY79:	TOTAL: $26,497
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scott, R. L., Jr.	MSFC/Owen, R. B. MSFC/Kent, M. I.	46-Mech Engr

NSG 9030 **Southern University - Baton Rouge** **2285**
State vector update filter for autoland portion of the shuttle landing

Period	Obligations	
09/01/75-12/31/79	FY79:	TOTAL: $69,140
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grewal, G. S.	JSC/Echelkamp, R. E.	45-Elec Engr

NCA 2-800801 **Tulane University** **2286**
Genetic bases for thermophily: Origins of thermal stability and membrane function

Period	Obligations	
11/01/77-10/31/79	FY79: $5,000	TOTAL: $12,301
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, E. J.	ARC/MacElroy, R. D. ARC/Lanyi, J. K.	51-Biological Sci

NSG 2139 **Tulane University** **2287**
Localization and ultrastructural histochemical characterization of the central emetric apparatus related to motion sickness and emetric drugs in the squirrel monkey and dog

Period	Obligations	
03/01/76-02/28/80	FY79: $39,952	TOTAL: $150,445
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brizzee, K. R.	ARC/Mehler, W. R.	59-Life Sci, NEC

NSG 3209 **Tulane University** **2288**
Evaluation of ion textured Al2Q3 surfaces for permanent prosthetic attachment

Period	Obligations	
08/01/78-01/31/80	FY79:	TOTAL: $14,995
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weinstein, A. M. Klawitter, J. J.	LERC/Weigand, A. J. LERC/Banks, B. A.	56-Medical Sciences

NAS 8-33479 **University of New Orleans** **2289**
Photovoltaic gas cell thermal study

Period	Obligations	
05/21/79-02/20/80	FY79: $4,983	TOTAL: $4,983
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Bankston, J. D., Jr.	MSFC/Humphries, W. R. MSFC/Littles, J. W.	46-Mech Engr

NSG 1460 **University of New Orleans** **2290**
Enhancement of appearance potential spectroscopy data by noise removal and deconvolution

Period	Obligations	
10/01/77-08/31/80	FY79: $5,597	TOTAL: $15,847
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ioup, G. E.	LARC/Wood, G. M.	47-Materials Engr

NSG 1648 **University of New Orleans** **2291**
Study on one and two-dimensional filtering and deconvolution algorithms for a streaming array computer

Period	Obligations	
09/01/79-08/31/80	FY79: $18,024	TOTAL: $18,024
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ioup, G. E.	LARC/Lambiotte, J. J., Jr.	21-Mathematics

NGR 19-007-004 **Xavier University - Louisiana** **2292**
The correlation of the 24 hour pattern of rat plasma and adrenal corticosterone with the diurnal variations of certain tissue constituents involved in carbohydrate metabolism

Period	Obligations	
05/07/73-12/31/79	FY79:	TOTAL: $165,247
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ashman, P. U.	ARC/Winget, C. M. ARC/Danellis, J. V.	51-Biological Sci

NSG 1361 **Xavier University - Louisiana** **2293**
Calculation of total cross sections for charge exchange in molecular collisions

Period	Obligations	
01/01/77-12/31/79	FY79:	TOTAL: $35,012
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ioup, J. W.	LARC/Wood, G. M. LARC/Smith, A.	13-Physics

NSG 8050 **Xavier University - Louisiana** **2294**
Solar radiation measurement project

Period	Obligations	
06/02/77-12/31/79	FY79: $25,661	TOTAL: $71,457
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ioup, J. W.	MSFC/Espy, P. N. MSFC/Kent, M. I.	39-Env Sci, NEC

MARYLAND

NGR 21-027-001 **Bowie State College** **2295**
Research in cosmic ray physics

Period	Obligations	
09/01/69-06/30/80	FY79:	TOTAL: $140,428
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, R. P.	GSFC/Kniffen, D. A.	11-Astronomy

NGR 21-027-004 **Bowie State College** **2296**
Research in numerical integration

Period	Obligations	
05/25/71-07/31/80	FY79: $16,376	TOTAL: $111,277
Prin Invest	*NASA Tech Officer*	*CASE Category*
Srivastava, S.	GSFC/Lefferts, E. J.	21-Mathematics

NGR 21-027-010 **Bowie State College** **2297**
Holographic gratings for spectrographic applications study of aberrations

Period	Obligations	
05/14/73-07/31/80	FY79: $16,321	TOTAL: $95,698
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bhatia, M. S.	GSFC/Caruso, A. J. GSFC/Osantowski, J. F.	13-Physics

NGT 21-027-012 **Bowie State College** **2298**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/74-03/31/80	FY79: $32,821	TOTAL: $183,034
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kirksey, C. H.	HQ-LU/Pohly, J. G. GSFC/Mundy, J. R.	99-Multi-Discip

NSG 5009 **Bowie State College** **2299**
Characterization of the physico-chemical properties of polymeric materials for aerospace flights

Period	Obligations	
07/01/74-11/30/79	FY79: $25,575	TOTAL: $110,058
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rock, M.	GSFC/Gross, F. C. GSFC/Colony, J. A.	12-Chemistry

NSG 5416 **Bowie State College** **2300**
Investigation of automatic picture transmission relative to space sciences

Period	Obligations	
10/01/79-09/30/80	FY79: $15,427	TOTAL: $15,427
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kirksey, C. H.	GSFC/Bailey, E. GSFC/Crome, R.	99-Multi-Discip

NSG 5051 **Coppin State College** **2301**
Research on the failure mechanism and other factors leading to reduced cycle life aerospace nickel-cadmium cells

Period	Obligations	
05/01/75-05/31/80	FY79: $45,938	TOTAL: $180,253
Prin Invest	*NASA Tech Officer*	*CASE Category*
McFermott, P. P.	GSFC/Ford, F. E	12-Chemistry
Shaw R.	GSFC/Halpert, G.	

NAS 2-9300 **Johns Hopkins University** **2302**
Study of predictive ecological models useful for the management and conservation of Bearing Sea mammals

Period	Obligations	
06/28/76-12/31/79	FY79: $52,812	TOTAL: $142,645
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ray, G. C.	ARC/Sebesta, P. D.	59-Life Sci, NEC
Wartzok, D.	ARC/Billingham, J.	
Besta, S. E.		

NAS 5-11415 **Johns Hopkins University** **2303**
Atmosphere Explorer photoelectron and energetic particle experiment

Period	Obligations	
08/15/74-09/30/80	FY79: $108,000	TOTAL: $1,451,877
Prin Invest	*NASA Tech Officer*	*CASE Category*
Doering, J. P.	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-23732 **Johns Hopkins University** **2304**
Development of a command system for a fully implantable human tissue stimulator

Period	Obligations	
10/26/76-05/30/80	FY79: $175,000	TOTAL $525,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Long, D.	GSFC/Friedman, D. S.	
Fishell, R. E.		56-Medical Sciences

NAS 5-25358 **Johns Hopkins University** **2305**
Grating facility use

Period	Obligations	
10/01/78-12/31/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fastie, W. G.	GSFC/Fowler, W. S.	13-Physics

NAS 6-2706 **Johns Hopkins University** **2306**
Services and materials necessary to perform theoretical studies in ocean dynamics

Period	Obligations	
01/16/76-02/14/78	FY79:	TOTAL: $148,101
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phillips, O. M.	WFC/Stanley, H. R.	33-Oceanography
	WFC/Huang, N. E.	

NAS 6-2888 **Johns Hopkins University** **2307**
Study of ocean fine structures

Period	Obligations	
03/22/78-03/21/79	FY79:	TOTAL: $50,043
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phillips, O. M.	WFC/Huang, N. E.	33-Oceanography
	WFC/Long, S. R.	

NAS 6-2993 **Johns Hopkins University** **2308**
Study of the ocean fine structures

Period	Obligations	
05/01/79-04/30/80	FY79: $31,693	TOTAL: $31,693
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phillips, O. M.	WFC/Huang, N. E.	33-Oceanography
	WFC/Long, S. R.	

NAS 8-32903 **Johns Hopkins University** **2309**
Scientific investigations in support of the space telescope project

Period	Obligations	
02/01/78-01/31/84	FY79	TOTAL: $151,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fastie, W. G.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 8-33106 **Johns Hopkins University** **2310**
Coronal magnetic structure and the latitude and longitude distribution of energetic charged particles

Period	Obligations	
10/18/78-10/17/79	FY79 $34,000	TOTAL $34,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roelof, E. C.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C	

NCC 5 1 **Johns Hopkins University** **2311**
Interpretation and delineation of the earth's gravity field

Period	Obligations	
04/01/79-03/31/80	FY79 $42,635	TOTAL $42,635
Prin Invest	*NASA Tech Officer*	*CASE Category*
Marsh, B. D	GSFC/Marsh, J. G.	32-Geological Sci

NCC 5 13 **Johns Hopkins University** **2312**
The source of long wavelength crustal magnetic anomalies

Period	Obligations	
05/01/79-04/30/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Marsh, B. D.	GSFC/Taylor, P. T	32-Geological Sci

NCC 5 18 **Johns Hopkins University** **2313**
Research of thermal regime of the upper mantle

Period	Obligations	
06/14/79-06/13/80	FY79: $10,452	TOTAL: $10,452
Prin Invest	*NASA Tech Officer*	*CASE Category*
Marsh, B. D.	GSFC/Langel, R. A.	32-Geological Sci

NGR 21-001-001 **Johns Hopkins University** **2314**
Rocket and laboratory experiments and analysis on ultraviolet spectra of upper atmosphere

Period	Obligations	
08/01/61-02/29/80	FY79: $405,000	TOTAL: $4,970,863

Prin Invest	NASA Tech Officer	CASE Category
Fastie, W. G.	GSFC/Bissell, E. E.	11-Astronomy
Feldman, P. D.	HQ-SC/Roman, N. G.	
Henry, R. C.		

NGR 21-001-111 **Johns Hopkins University** **2315**
Small group performance & effects of contingency management in a programmed environment

Period	Obligations	
03/31/72-10/31/79	FY79: $70,000	TOTAL: $875,794

Prin Invest	NASA Tech Officer	CASE Category
Brady, J. V	ARC/Patton, R. M.	62-Social Aspects
Emurian, H. H.		

NSG 1442 **Johns Hopkins University** **2316**
Aspects of some transient faults in computer based systems

Period	Obligations	
09/15/77-04/14/80	FY79: $45,253	TOTAL: $93,201

Prin Invest	NASA Tech Officer	CASE Category
Masson, G. M.	LARC/Bavuso, S. J.	45-Elec Engr
	LARC/Migneault, G. E.	

NSG 2303 **Johns Hopkins University** **2317**
Experiments on sheared or strained turbulence

Period	Obligations	
02/01/78-10/31/79	FY79:	TOTAL: $57,882

Prin Invest	NASA Tech Officer	CASE Category
Corrsin, S.	ARC/Rubesin, M. W.	41-Aero Engr
	ARC/Marvin, J. G.	

NSG 5090 **Johns Hopkins University** **2318**
Research in earth sciences

Period	Obligations	
01/01/76-03/31/79	FY79:	TOTAL: $142,445

Prin Invest	NASA Tech Officer	CASE Category
Marsh, B. D.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5184 **Johns Hopkins University** **2319**
Research in stellar chromospheres with the Copernicus satellite

Period	Obligations	
07/01/77-06/30/78	FY79:	TOTAL: $11,000

Prin Invest	NASA Tech Officer	CASE Category
Moos, H. W.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5230 **Johns Hopkins University** **2320**
Study of the geneses of tornadoes associated with hurricanes

Period	Obligations	
02/13/78-02/12/79	FY79:	TOTAL: $5,920

Prin Invest	NASA Tech Officer	CASE Category
Moos, H. W.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5255 **Johns Hopkins University** **2321**
Ultraviolet studies of the outer planets

Period	Obligations	
03/15/78-03/14/80	FY79:	TOTAL: $12,000

Prin Invest	NASA Tech Officer	CASE Category
Moos, H. W.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5269 **Johns Hopkins University** **2322**
Research of thermal regime of the upper mantle

Period	Obligations	
04/15/78-07/31/79	FY79	TOTAL: $18,821

Prin Invest	NASA Tech Officer	CASE Category
Marsh, B. D.	GSFC/Langel, R. A.	32-Geological Sci
Didwall, E. M.	GSFC/Mead, G. D.	

NSG 5310 **Johns Hopkins University** **2323**
Study of interstellar matter and chromospheres

Period	Obligations	
12/15/78-12/14/79	FY79: $12,000	TOTAL: $12,000

Prin Invest	NASA Tech Officer	CASE Category
Moos, H. W.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5393 **Johns Hopkins University** **2324**
Studies of the ultraviolet spectra of astronomical sources

Period	Obligations	
07/01/79-10/31/79	FY79: $16,000	TOTAL: $16,000

Prin Invest	NASA Tech Officer	CASE Category
Moos, H. W.	GSFC/Boggess, A.	11-Astronomy
Davidsen, A. F.		
Feldman, P. D.		

NSG 7055 **Johns Hopkins University** **2325**
Satellite data analysis

Period	Obligations	
01/01/74-11/30/79	FY79: $145,000	TOTAL: $379,000

Prin Invest	NASA Tech Officer	CASE Category
Krimigis, S. M.	HQ-ST/Hedin, A. E.	13-Physics
	HQ-ST/Schmerling, E. R.	

NSG 7382 **Johns Hopkins University** **2326**
A study of the feasibility of ultraviolet spectrometry for cometary missions

Period	Obligations	
11/01/77-04/30/79	FY79:	TOTAL: $35,000

Prin Invest	NASA Tech Officer	CASE Category
Feldman, P. D.	HQ-SL/Murphy, R. F.	11-Astronomy
	HQ-SL/Brunk, W. E.	

NSG 7449 **Johns Hopkins University** **2327**
Analysis of X-ray astronomy data

Period	Obligations	
05/15/78-05/14/80	FY79: $41,100	TOTAL: $101,520

Prin Invest	NASA Tech Officer	CASE Category
Davidsen, A. F.	HQ-SC/Kaluzienski, L. J.	11-Astronomy

NAS 5-25120 **Montgomery College** **2328**
Ultraviolet spectra study of normal stars

Period	Obligations	
06/21/78-09/13/78	FY79: $8,000	TOTAL: $8,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Fahey, P. P.	GSFC/Fischel, D.	11-Astronomy
	GSFC/Klinglesmith, D. A.	

NAS 5-23558 **Morgan State University** **2329**
The investigation, identification, analysis and interpretation of new possibilities in transfer technology

Period	Obligations	
06/01/76-03/31/81	FY79: $35,774	TOTAL: $74,364
Prin Invest	**NASA Tech Officer**	**CASE Category**
Taylor, J. H.	GSFC/Friedman, D. S.	49-Engr, NEC

NAS 5-25533 **Morgan State University** **2330**
Conduct a three day symposium on Careers in Science and Engineering at the Morgan State University

Period	Obligations	
03/23/79-06/15/79	FY79: $21,000	TOTAL: $21,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Jerkins, K.	GSFC/Chapman, J. W.	45-Elec Engr

NAS 5-25700 **Morgan State University** **2331**
Ten week summer institute in science and engineering

Period	Obligations	
05/21/79-07/27/79	FY79: $20,747	TOTAL: $20,747
Prin Invest	**NASA Tech Officer**	**CASE Category**
Proctor, N. K.	GSFC/Mundy, J. R.	49-Engr, NEC
	GSFC/Chapman, J. W.	

NGT 21-025-006 **Morgan State University** **2332**
Summer faculty fellowship program

Period	Obligations	
04/16/71-12/31/79	FY79: $46,888	TOTAL: $337,199
Prin Invest	**NASA Tech Officer**	**CASE Category**
Proctor, N. K.	HQ-LU/Pohly, J. G.	19-Phys Sci, NEC
	GSFC/Mundy, J. R.	

NSG 5074 **Morgan State University** **2333**
Research calibration of photographic and spectrographic films

Period	Obligations	
10/01/75-03/31/80	FY79: $21,532	TOTAL: $70,785
Prin Invest	**NASA Tech Officer**	**CASE Category**
Hammond, E. C., Jr.	GSFC/Baker, G. R.	11-Astronomy
	GSFC/Stober, A. L.	

NSG 5401 **Morgan State University** **2334**
Research of high temperature solar converter

Period	Obligations	
08/01/79-07/31/80	FY79: $45,000	TOTAL: $45,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Oliver, F. W.	GSFC/Duncan, C. H.	31-Atmos Sci
Ascher, G.		

NGR 21-002-010 **University of Maryland - Baltimore** **2335**
Theoretical & experimental research on gravitational radiation

Period	Obligations	
06/12/63-09/30/79	FY79: $27,738	TOTAL: $1,005,625
Prin Invest	**NASA Tech Officer**	**CASE Category**
Misner, C. W.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NAS 5-11063 **University of Maryland - College Park** **2336**
Experiment to analyze ions and electrons for IMP-H & J

Period	Obligations	
06/11/68-10/31/79	FY79: $147,646	TOTAL: $2,162,997
Prin Invest	**NASA Tech Officer**	**CASE Category**
Gloeckler, G.	GSFC/Davis, M. A.	13-Physics

NAS 5-20062 **University of Maryland - College Park** **2337**
Low energy charged particles experiment for International Sun-Earth Explorer mother and heliocentric spacecraft

Period	Obligations	
05/02/74-07/30/80	FY79: $4,000	TOTAL: $967,861
Prin Invest	**NASA Tech Officer**	**CASE Category**
Gloeckler, G.	GSFC/Gallagher, W. F.	13-Physics

NAS 5-23237 **University of Maryland - College Park** **2338**
Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch

Period	Obligations	
05/09/73-10/31/81	FY79: $16,000	TOTAL: $76,900
Prin Invest	**NASA Tech Officer**	**CASE Category**
Ponnamperuma, C. A.	GSFC/Conrath, B. J.	13-Physics
	GSFC/Hanel, R. A.	

NAS 5-23457 **University of Maryland - College Park** **2339**
Study of application of a field neutron generator

Period	Obligations	
04/06/76-12/31/79	FY79: $11,200	TOTAL: $34,652
Prin Invest	**NASA Tech Officer**	**CASE Category**
Sommer, S. E.	GSFC/Trombka, J. I.	39-Env Sci, NEC

NAS 5-25132 **University of Maryland - College Park** **2340**
Investigations of diagnostic techniques applicable to pulsed visible dye lasers

Period	Obligations	
08/01/78-05/15/79	FY79:	TOTAL: $19,644
Prin Invest	**NASA Tech Officer**	**CASE Category**
McIlrath, T. J.	GSFC/Caudill, L. O.	49-Engr, NEC
	GSFC/Degnan, J. J.	

NAS 5-25388 **University of Maryland - College Park** **2341**
Study of energetic particle beam injection experiments in ionosphere and magnetosphere

Period	Obligations	
10/17/78-06/30/79	FY79: $20,000	TOTAL: $20,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Papadopoulos, K.	GSFC/Sing, M. L.	13-Physics

NAS 5-25437 **University of Maryland - College Park** **2342**
Feasibility study for fine structure solar energy converter

Period	Obligations	
02/14/79-10/14/80	FY79: $12,441	TOTAL: $12,441
Prin Invest	*NASA Tech Officer*	*CASE Category*
Taylor, L. S.	GSFC/Peake, H. J.	45-Elec Engr

NAS 5-25472 **University of Maryland - College Park** **2343**
International Sun-Earth Explorer 3 data interpretation services

Period	Obligations	
01/29/79-01/29/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coplan, M. A.	GSFC/Ogilvie, K. W.	11-Astronomy

NAS 5-25486 **University of Maryland - College Park** **2344**
Support to the space telescope wide field planetary camera development team

Period	Obligations	
02/01/79-10/31/79	FY79: $30,047	TOTAL: $30,047
Prin Invest	*NASA Tech Officer*	*CASE Category*
Currie, D. G.	GSFC/Sours, W. T.	31-Atmos Sci

NAS 5-25764 **University of Maryland - College Park** **2345**
Research in natural human to machine interfaces for NASA mission operations data systems

Period	Obligations	
06/29/79-06/29/80	FY79: $33,125	TOTAL: $33,125
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Rieger, C. S.	GSFC/Desjardins, R.	99-Multi-Discip
Somet, H.		

NAS 5-25851 **University of Maryland - College Park** **2346**
Conference on The Regional Applications of Remote Sensing Technology

Period	Obligations	
08/22/79-11/21/79	FY79: $22,353	TOTAL: $22,353
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ragan, R. M.	GSFC/Short, N. M.	39-Env Sci, NEC

NAS 8-32148 **University of Maryland - College Park** **2347**
A study to determine the aquatic biological effects on the solid rocket booster

Period	Obligations	
08/10/76-05/15/79	FY79:	TOTAL: $103,041
Prin Invest	*NASA Tech Officer*	*CASE Category*
Colwell, R. R.	MSFC/Scott, F. E.	54-Env Biology
Zachary, A.	MSFC/Miller, T. Y.	

NAS 8-33105 **University of Maryland - College Park** **2348**
A comparative study of meter-decameter bursts with X-ray loops and flaming bright points as observed by the Skylab S-054 experiment

Period	Obligations	
10/12/78-10/11/79	FY79: $32,000	TOTAL: $32,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Rundu, M. R.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C.	

NAS 8-33329 **University of Maryland - College Park** **2349**
HEAO-B observations of distant GSO associated clusters of galaxies

Period	Obligations	
02/14/79-02/13/80	FY79: $8,000	TOTAL: $8,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Scott, J. S.	MSFC/Jones, J. B., Jr.	11-Astronomy
Becker, R. H.		

NAS 8-33346 **University of Maryland - College Park** **2350**
Radio and optical studies of X-ray clusters of galaxies

Period	Obligations	
02/14/79-02/13/80	FY79: $24,356	TOTAL: $24,356
Prin Invest	*NASA Tech Officer*	*CASE Category*
Erickson, W. C.	MSFC/Jones, J. B., Jr.	11-Astronomy
Holman, G. D.		
Matthews, T. A.		

NAS 8-33358 **University of Maryland - College Park** **2351**
An investigation of the relation between Seyfert and other active nuclei galaxies

Period	Obligations	
05/22/79-05/21/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilson, A. S.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 8-33557 **University of Maryland - College Park** **2352**
Construction of a prototype superconducting gravity gradiometer

Period	Obligations	
08/03/79-03/18/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Paik, H. J.	MSFC/Urban, E. W.	13-Physics
Richard, J. P.	MSFC/Shriver, E. L.	

NCA 2-420901 **University of Maryland - College Park** **2353**
Production of specific antibody without specific immunization: Extension to clinically important antigens

Period	Obligations	
01/01/79-12/31/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goldsby, R. A.	ARC/Mandel, A. D.	12-Chemistry

NCA 2-420902 **University of Maryland - College Park** **2354**
Band model analysis of ammonia Y4 fundamental absorption band from 150-293 K

Period	Obligations	
06/15/79-06/14/80	FY79: $7,900	TOTAL: $7,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Khanna, R. K.	ARC/Giver, L. P.	12-Chemistry

NCA 5-20 **University of Maryland - College Park** **2355**
Study of digital image processing of astronomical scenes

Period	Obligations	
05/16/77-05/15/78	FY79:	TOTAL: $15,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Fischel, D.	11-Astronomy
	GSFC/Klinglesmith, D. A.	

NCA 5-24 **University of Maryland - College Park** **2356**
Physics study of planetary nebulae

Period	Obligations	
10/01/77-09/30/78	FY79:	TOTAL: $2,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Currie, D. G.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-26 **University of Maryland - College Park** **2357**
Study of digital image processing of astronomical scenes

Period	Obligations	
05/16/78-05/15/79	FY79: $300	TOTAL: $6,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Klinglesmith, D. A.	11-Astronomy

NCA 5-27 **University of Maryland - College Park** **2358**
Development of software for spectral image processing

Period	Obligations	
03/01/78-03/31/78	FY79:	TOTAL: $1,751
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Klinglesmith, D. A.	11-Astronomy

NCA 5-28 **University of Maryland - College Park** **2359**
Goddard introduction to engineering careers

Period	Obligations	
06/01/78-06/30/80	FY79: $27,505	TOTAL: $27,505
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wockenfuss, W. A.	GSFC/Mundy, J. R.	49-Engr, NEC

NCA 5-65 **University of Maryland - College Park** **2360**
Study of atomic properties of astrophysic ions and atoms

Period	Obligations	
07/01/76-10/01/77	FY79: $952	TOTAL: $7,952
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martin, F. W. Koopman, D. McIlrath, T. J.	GSFC/Kastner, S. O.	13-Physics

NCA 5-79 **University of Maryland - College Park** **2361**
Analysis of high energy X-ray spectrometer data

Period	Obligations	
12/01/77-12/31/78	FY79:	TOTAL: $7,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosenfeld, A.	GSFC/Dennis, B. R.	31-Atmos Sci

NCC 1 25 **University of Maryland - College Park** **2362**
Airborne water vapor lidar experiment

Period	Obligations	
08/01/79-04/30/80	FY79: $41,000	TOTAL: $41,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilkerson, T. D.	LARC/Browell, E. V. LARC/Carter, A. F.	31-Atmos Sci

NCC 5 9 **University of Maryland - College Park** **2363**
Cooperative research in solar and stellar astronomy

Period	Obligations	
04/01/79-04/30/80	FY79: $73,097	TOTAL: $73,097
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tole, J. R. Young, L. R.	GSFC/Hobbs, R. W.	11-Astronomy

NGL 21-002-005 **University of Maryland - College Park** **2364**
Theoretical research on dynamics of astrophysical plasmas including studies of structure of plasma shock waves in solar corona and their possible radio emission

Period	Obligations	
02/01/62-06/30/81	FY79: $127,000	TOTAL: $1,107,493
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, C. S.	HQ-ST/Hedin, A. E. HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NGL 21-002-033 **University of Maryland - College Park** **2365**
Theoretical and experimental studies in space sciences, including consideration of rocket probe and satellites techniques

Period	Obligations	
06/02/64-07/31/81	FY79: $75,951	TOTAL: $3,216,835
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, E. P. Kerr, F. J.	GSFC/Donn, B. D.	31-Atmos Sci

NGR 21-002-066 **University of Maryland - College Park** **2366**
A study of primary cosmic ray electrons, utilizing balloon-borne experiments

Period	Obligations	
11/19/65-11/30/79	FY79: $30,000	TOTAL: $825,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Earl, J. A.	HQ-SC/Kaluzienski, L. J.	11-Astronomy

NGR 21-002-073 **University of Maryland - College Park** **2367**
Experimental and theoretical investigation of plasma radiation

Period	Obligations	
04/26/66-02/29/80	FY79: $65,000	TOTAL: $881,173
Prin Invest	*NASA Tech Officer*	*CASE Category*
Griem, H. R.	HQ-SC/Roman, N. G. HQ-SC/Boggess, N. W.	11-Astronomy

NGR 21-002-096 **University of Maryland - College Park** **2368**
Research in atmospheric physics

Period	Obligations	
06/21/66-06/30/80	FY79: $81,302	TOTAL: $905,186
Prin Invest	*NASA Tech Officer*	*CASE Category*
Matthews, D. L.	GSFC/Hartle, R. E. GSFC/Gagnon, B. D	31-Atmos Sci

NGR 21-002-199 **University of Maryland - College Park** **2369**
Research in solar radio astronomy at short wavelengths

Period	Obligations	
04/11/69-09/30/79	FY79: $73,000	TOTAL: $416,656
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kundu, M. R.	HQ-ST/Bohlin, J. D.	13-Physics

NGR 21-002-224 University of Maryland - College Park 2370
Research on the measurement of the charge and isotopic composition on the primary cosmic rays

Period	Obligations	
07/31/69-02/29/80	FY79: $50,000	TOTAL: $368,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gloeckler, G.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGR 21-002-270 University of Maryland - College Park 2371
Research in mechanical theorem proving

Period	Obligations	
05/18/70-06/30/80	FY79:	TOTAL: $176,661
Prin Invest	*NASA Tech Officer*	*CASE Category*
Minker, J.	HQ-RE/Gevarter, W. B.	21-Mathematics
	JPL/Friedman, L.	

NGR 21-002-291 University of Maryland - College Park 2372
Studies of charged particles in natural and laboratory environments

Period	Obligations	
01/28/71-11/30/79	FY79: $71,000	TOTAL: $327,921
Prin Invest	*NASA Tech Officer*	*CASE Category*
Coplan, M. A.	GSFC/Ogilvie, K. W.	13-Physics
Nousek, J.	GSFC/Hoffman, R. A.	
Pravdo, S.		

NGR 21-002-316 University of Maryland - College Park 2373
Research program in charged particle detector technology

Period	Obligations	
07/01/71-01/14/80	FY79: $575,000	TOTAL: $2,660,717
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gloeckler, G.	GSFC/Teegarden, B. J.	13-Physics
Ipavich, F.		
Mason, G.		

NGR 21-002-317 University of Maryland - College Park 2374
Chemical studies of the origin of life

Period	Obligations	
08/18/71-06/30/80	FY79: $180,065	TOTAL: $845,158
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ponnamperuma, C. A.	HQ-SB/Young, R. S.	12-Chemistry

NGR 21-002-344 University of Maryland - College Park 2375
Studies on thermophysical properties in critical region of fluids

Period	Obligations	
02/16/72-06/30/79	FY79: $1,768	TOTAL: $83,998
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sengers, J. V.	LERC/Simoneau, R. J.	13-Physics

NGR 21-002-368 University of Maryland - College Park 2376
Geochemistry of lunar & meteoritic materials

Period	Obligations	
06/01/72-08/15/78	FY79:	TOTAL: $330,355
Prin Invest	*NASA Tech Officer*	*CASE Category*
Khanna, R. K.	GSFC/Stief, L. J.	32-Geological Sci

NGR 21-002-399 University of Maryland - College Park 2377
Urbanization and geologic processes in the Chesapeake Bay watershed

Period	Obligations	
03/01/73-05/31/79	FY79:	TOTAL: $108,511
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCuen, R. H.	GSFC/Rango, A.	32-Geological Sci
	GSFC/Salomonson, V. V.	

NGR 21-002-400 University of Maryland - College Park 2378
Preliminary experiments with a split sphere high pressure apparatus

Period	Obligations	
04/17/73-01/31/79	FY79:	TOTAL: $281,791
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spain, I. L	LERC/Coles, W. D.	13-Physics
Skelton, E. F.	LERC/Brown, G. V	

NGT 21-002-254 University of Maryland - College Park 2379
Summer faculty fellowship program in research for 24 faculty members

Period	Obligations	
12/23/69-03/31/80	FY79: $168,867	TOTAL $812,235
Prin Invest	*NASA Tech Officer*	*CASE Category*
Emad, F. P.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1468 University of Maryland - College Park 2380
Study of surface acoustic wave charge transfer device

Period	Obligations	
11/15/77-06/14/80	FY79: $29,853	TOTAL: $57,672
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, H. C.	LARC/Benz, H. F.	45-Elec Engr
	LARC/Husson, C.	

NSG 1558 University of Maryland - College Park 2381
Design of flight control systems via robust servomechanism theory

Period	Obligations	
08/15/78-12/14/79	FY79:	TOTAL: $30,127
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wang, S. H.	LARC/Schy, A. A.	45-Elec Engr

NSG 1570 University of Maryland - College Park 2382
General aviation aerodynamics and dynamics

Period	Obligations	
11/01/78-10/31/79	FY79: $24,847	TOTAL: $24,847
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Barlow, J. B.	LARC/DiCarlo, D. J.	41-Aero Engr
Anderson, J. D., Jr.	LARC/Yip, L. P.	

NSG 2378 University of Maryland - College Park 2383
Production of monoclonal antibodies to human T-cells

Period	Obligations	
04/01/79-03/31/80	FY79: $42,554	TOTAL: $42,554
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goldsby, R. A.	ARC/Mandel, A. D.	56-Medical Sciences

NSG 5017 **University of Maryland - College Park** **2384**
Resource identification studies on urban watersheds using the Anacostia River Basin as an example

Period	Obligations	
07/15/74-12/31/79	FY79: $27,690	TOTAL: $118,944
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ragan, R. M.	GSFC/Salomonson, V. V.	
	GSFC/Rango, A.	32-Geological Sci

NSG 5042 **University of Maryland - College Park** **2385**
Study of CO2 waveguide laser life problem

Period	Obligations	
01/12/75-12/31/79	FY79:	TOTAL: $120,685
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Hochuli, U. E.	GSFC/Degnan, J. J.	49-Engr, NEC
Davis, C.		

NSG 5094 **University of Maryland - College Park** **2386**
Analysis of lunar data

Period	Obligations	
02/01/76-09/30/79	FY79:	TOTAL: $139,004
Prin Invest	*NASA Tech Officer*	*CASE Category*
Balakrishnan, A. V.	GSFC/Trombka, J. I.	32-Geological Sci

NSG 5123 **University of Maryland - College Park** **2387**
Evaluation of software engineering disciplines

Period	Obligations	
08/01/76-12/31/79	FY79: $40,000	TOTAL: $167,214
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Basili, V. R.	GSFC/McGarry, F. E.	49-Engr, NEC
Zelkowitz, M. V.	GSFC/Tasaki, K. K.	

NSG 5129 **University of Maryland - College Park** **2388**
Research regarding centimeter laser ranging accuracy to earth satellites

Period	Obligations	
09/17/76-11/30/77	FY79:	TOTAL: $169,070
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Alley, C. O.	GSFC/Johnson, T. S.	13-Physics
Currie, D. G.		

NSG 5137 **University of Maryland - College Park** **2389**
Incorporation of remotely sensed soil moisture data into hydrologic models

Period	Obligations	
12/01/76-06/30/80	FY79: $30,760	TOTAL: $102,815
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Witczak, M. W.	GSFC/Schmugge, T. J.	32-Geological Sci

NSG 5172 **University of Maryland - College Park** **2390**
Raman spectroscopy of cosmic ices and planetary atmospheres

Period	Obligations	
04/01/77-06/30/80	FY79: $26,412	TOTAL: $48,978
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Khanna, R. K.	GSFC/Donn, B. D.	12-Chemistry

NSG 5174 **University of Maryland - College Park** **2391**
Atmospheric lidar research

Period	Obligations	
06/01/77-05/31/78	FY79:	TOTAL: $20,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Wilkerson, T. D.	GSFC/Barnes, W. L.	31-Atmos Sci

NSG 5177 **University of Maryland - College Park** **2392**
Measurement of interstellar helium impinging on the earth

Period	Obligations	
06/01/77-06/30/79	FY79: $6,000	TOTAL: $41,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moore, J. H.	GSFC/Bissell, E. E.	13-Physics
Opal, C. B.	HQ-ST/Cauffman, D. P.	
Meier, R. R.		

NSG 5209 **University of Maryland - College Park** **2393**
Multidisciplinary research program in atmospheric science

Period	Obligations	
09/12/77-12/31/79	FY79: $362,413	TOTAL: $656,247
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Thompson, O. E.	GSFC/Arking, A.	31-Atmos Sci
	GSFC/Halem, M.	

NSG 5234 **University of Maryland - College Park** **2394**
Research of image motion and evaluation and optimization of the automatic guide system on the forty-eight inch telescope

Period	Obligations	
02/19/78-05/14/80	FY79: $62,000	TOTAL: $102,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Currie, D. G.	GSFC/Winston, G. C.	31-Atmos Sci

NSG 5287 **University of Maryland - College Park** **2395**
Evaluate the automatic guider system for possible space ranging applications

Period	Obligations	
07/15/78-07/14/79	FY79:	TOTAL: $37,404
Prin Invest	*NASA Tech Officer*	*CASE Category*
Currie, D. G.	GSFC/Winston, G. C.	31-Atmos Sci

NSG 5298 **University of Maryland - College Park** **2396**
Solar gamma-ray astronomy research

Period	Obligations	
08/15/78-11/30/79	FY79: $27,900	TOTAL: $47,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wall, N. S.	GSFC/Ramaty, R.	11-Astronomy

NSG 5313 **University of Maryland - College Park** **2397**
Resonance fluorescence in atmospheric gases research

Period	Obligations	
12/01/78-11/30/79	FY79: $135,000	TOTAL: $135,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McIlrath, T. J.	GSFC/Hudson, R. D.	13-Physics

NSG 5320 **University of Maryland - College Park** **2398**
Ground-based solar radio observations: Solar maximum mission

Period	Obligations	
01/15/79-01/14/80	FY79: $40,000	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kundu, M. R.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 5323 **University of Maryland - College Park** **2399**
Research of impulse electromagnetic bursts: Solar maximum mission

Period	Obligations	
07/01/79-05/30/80	FY79: $12,318	TOTAL: $12,318
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spicer, D. S.	GSFC/Donley, J. L.	31-Atmos Sci
Tidman, D. A.		

NSG 5390 **University of Maryland - College Park** **2400**
Studies of suspected high carbon abundance planetary nebulae

Period	Obligations	
07/01/79-06/30/80	FY79: $6,815	TOTAL: $6,815
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harrington, J. P.	GSFC/Boggess, A.	11-Astronomy
Marionni, P. A.		

NSG 5399 **University of Maryland - College Park** **2401**
Observations of ultraviolet line spectra stars

Period	Obligations	
07/01/79-06/30/80	FY79: $12,300	TOTAL: $12,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bell, R. A	GSFC/Boggess, A.	11-Astronomy

NSG 5404 **University of Maryland - College Park** **2402**
Field aligned particle fluxes and parallel electric potential

Period	Obligations	
10/01/79-09/30/80	FY79: $24,000	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, C. S.	GSFC/Spencer, N. W.	31-Atmos Sci
Rosenberg, T. J.		

NSG 5408 **University of Maryland - College Park** **2403**
Study of bow shock ions, particle accelerations and plasma instabilities

Period	Obligations	
10/01/79-09/30/80	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, C. S.	GSFC/Corrigan, J. P.	11-Astronomy

NSG 7046 **University of Maryland - College Park** **2404**
Studies of the Apollo 15 and 16 orbital X-ray data

Period	Obligations	
05/01/74-03/31/80	FY79: $33,489	TOTAL: $162,197
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adler, I	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7196 **University of Maryland - College Park** **2405**
Research and development of gravitational experiments for spacecraft

Period	Obligations	
03/01/76-06/30/80	FY79: $75,000	TOTAL: $248,513
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weber, J.	HQ-RT/Whiting, E. E.	13-Physics
Davis, W.	JPL/Tward, M.	
Paik, H. J.		

NSG 7252 **University of Maryland - College Park** **2406**
Analysis and interpretation of X-ray data

Period	Obligations	
06/01/76-05/31/78	FY79:	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rose, W. K.	HQ-SC/Opp, A. G.	11-Astronomy

NSG 7253 **University of Maryland - College Park** **2407**
Improving communications between humans and computer-directed automatic systems

Period	Obligations	
07/01/76-08/31/79	FY79:	TOTAL: $120,925
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reiger, C. J.	HQ-RT/Whiting, E. E.	
Minker, J.	JPL/Friedman, L.	22-Computer Science

NSG 7284 **University of Maryland - College Park** **2408**
Research on photon counting array photometer for space applications

Period	Obligations	
10/01/76-11/30/77	FY79:	TOTAL: $147,768
Prin Invest	*NASA Tech Officer*	*CASE Category*
Currie, D. G.	HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7322 **University of Maryland - College Park** **2409**
Research on comets

Period	Obligations	
03/01/77-05/31/80	FY79:	TOTAL: $76,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
A'Hearn, M. F.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7340 **University of Maryland - College Park** **2410**
Spectral studies related to dissociation of hydrogen-bromine, hydrogen-chloride and bromine-oxide

Period	Obligations	
06/16/77-06/15/80	FY79: $38,000	TOTAL: $103,783
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ginter, M. L.	HQ-EB/Kakar, R. K.	13-Physics
	HQ-EB/Seals, R. K., Jr.	

NSG 7365 **University of Maryland - College Park** **2411**
Theoretical calculations of non-ballistic fluid dynamic flow for ejecta transport in models of multiring basins of impact origin

Period	*Obligations*	
07/01/77-06/30/79	FY79: $37,500	TOTAL: $67,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pai, S. I.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7427 **University of Maryland - College Park** **2412**
Numerical simulation experiments in support of NASA's solar physics missions: Solar loop and flare studies

Period	*Obligations*	
12/01/77-11/30/79	FY79: $64,000	TOTAL: $124,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spicer, D. S.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7469 **University of Maryland - College Park** **2413**
Colloquium on the limits of life

Period	*Obligations*	
07/01/78-06/31/79	FY79: $7,500	TOTAL: $7,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ponnamperuma, C.	HQ-SB/Young, R. S.	12-Chemistry

NSG 7482 **University of Maryland - College Park** **2414**
Astrophysical science theory on lunar minerals

Period	*Obligations*	
09/01/78-02/29/80	FY79: $24,753	TOTAL: $24,753
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tossell, J.	HQ-SL/Quaide, W. E. HQ-SL/French, B. M.	32-Geological Sci

NSG 7496 **University of Maryland - College Park** **2415**
Experiments with phase transitions at very high pressures

Period	*Obligations*	
10/01/78-09/30/79	FY79: $85,035	TOTAL: $85,035
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spain, I. L.	HQ-RS/Lundholm, J. G., Jr.	13-Physics

NSG 7555 **University of Maryland - College Park** **2416**
X-ray clusters of galaxies, gas dynamics and relativistic particle propagation

Period	*Obligations*	
03/01/79-02/29/80	FY79: $40,608	TOTAL: $40,608
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scott, J. S.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NAS 6-2855 **University of Maryland - Eastern Shore** **2417**
Services for operation of Wallops' Technical Library

Period	*Obligations*	
10/01/77-09/30/78	FY79: $65,018	TOTAL: $127,393
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, J. C. Ignasias, C. D.	WFC/Floyd, J. C. WFC/Foster, J. N.	99-Multi-Discip

NGR 21-119-003 **University of Maryland - Eastern Shore** **2418**
High power pulsed laser beams and their atmospheric propagation limitations

Period	*Obligations*	
08/18/72-12/31/78	FY79.	TOTAL: $46,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Singh, G.	WFC/Trafford, G. H	13-Physics

NSG 6006 **University of Maryland - Eastern Shore** **2419**
Studies of microwave radiation as a tool in soil sterilization against major diseases and pests of agricultural crops

Period	*Obligations*	
03/01/76-08/31/79	FY79:	TOTAL: $99,692
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wutoh, J. G.	WFC/Oberholtzer, J. D.	99-Multi-Discip

NSG 6016 **University of Maryland - Eastern Shore** **2420**
A chronology and retrieval system for Wallops Flight Center atmospheric data

Period	*Obligations*	
09/17/76-06/16/80	FY79: $35,000	TOTAL: $90,706
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, J. C.	WFC/Parsons, C. L.	31-Atmos Sci

NSG 6017 **University of Maryland - Eastern Shore** **2421**
Summer study on space colonies

Period	*Obligations*	
06/20/77-05/31/78	FY79:	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lynk, W. L.	WFC/Trafford, G. H.	59-Life Sci, NEC

NSG 6025 **University of Maryland - Eastern Shore** **2422**
Surface drift currents in the ocean

Period	*Obligations*	
12/01/78-11/30/79	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dudis, J. J	WFC/Huang, N. E. WFC/Long, S. R.	33-Oceanography

NSG 6033 **University of Maryland - Eastern Shore** **2423**
Investigation of aspergillus flavus

Period	*Obligations*	
06/01/79-12/31/79	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Albino, M	WFC/Trafford, G. H.	51-Biological Sci

NSG 6034 **University of Maryland - Eastern Shore** **2424**
Aquatic vascular plants and algae as potential biological components of closed ecological life support systems

Period	*Obligations*	
06/01/79-12/31/79	FY79: $11,321	TOTAL: $11,321
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gupta, G. C.	WFC/Trafford, G. H.	39-Env Sci, NEC

MARYLAND (Continued)

NSG 7470 **University of Maryland - Eastern Shore** **2425**
Optimization of agricultural productivity in closed ecological life support systems

Period 07/01/78-12/31/79 | *Obligations* FY79: | TOTAL: $40,000
Prin Invest Joshi, J. M. | *NASA Tech Officer* HQ-SB/Young, R. S. | *CASE Category* 55-Agriculture Sci

MASSACHUSETTS

NSG 7385 **Boston College** **2426**
Investigation of auroral process on the ATS field line

Period 09/01/77-08/31/78 | *Obligations* FY79: | TOTAL: $30,000
Prin Invest Eather, R. H. | *NASA Tech Officer* HQ-ST/Taylor, W. W.
HQ-ST/Schmerling, E. R. | *CASE Category* 39-Env Sci, NEC

NSG 7468 **Boston College** **2427**
Evaluate and assess the role of theorists in solar terrestrial research

Period 06/01/78-11/30/79 | *Obligations* FY79: | TOTAL: $66,442
Prin Invest Carovillano, R. L. | *NASA Tech Officer* HQ-ST/Tomayko, D. W. | *CASE Category* 39-Env Sci, NEC

NAS 5-25445 **Boston University** **2428**
High resolution studies of ultraviolet lines in O-B stars

Period 12/11/78-10/31/79 | *Obligations* FY79: $7,404 | TOTAL: $7,404
Prin Invest Kamp, L. W. | *NASA Tech Officer* GSFC/Boggess, A. | *CASE Category* 11-Astronomy

NAS 8-32844 **Boston University** **2429**
Use of the space shuttle to create plasma holes for ionospheric and radio astronomical studies

Period 10/01/77-09/30/82 | *Obligations* FY79: $19,000 | TOTAL: $40,000
Prin Invest Mendillo, M. | *NASA Tech Officer* MSFC/Guynes, B. V.
MSFC/Ise, R. | *CASE Category* 31-Atmos Sci

NGR 22-004-018 **Boston University** **2430**
Ultrasonic measurement of heart volume

Period 03/01/70-12/31/78 | *Obligations* FY79: | TOTAL: $65,511
Prin Invest Fulton, G. P.
Berman, H. J. | *NASA Tech Officer* HQ-SB/Larson, C. A. | *CASE Category* 59-Life Sci, NEC

NGR 22-004-025 **Boston University** **2431**
Microbial contributions to the precambrian earth

Period 12/15/70-09/30/79 | *Obligations* FY79: $42,688 | TOTAL: $253,351
Prin Invest Margulis, L. | *NASA Tech Officer* HQ-SB/Young, R. S. | *CASE Category* 32-Geological Sci

NGR 22-004-030 **Boston University** **2432**
Compressible unsteady potential aerodynamic flow around lifting bodies having arbitrary shapes & motions

Period 12/08/71-12/31/79 | *Obligations* FY79: $101,282 | TOTAL: $525,754
Prin Invest Morino, L.
Tseng, K. | *NASA Tech Officer* LARC/Yates, E. C., Jr. | *CASE Category* 41-Aero Engr

NSG 1644 **Boston University** **2433**
Noisiness and annoyance of noise-tone complexes

Period 09/01/79-09/30/80 | *Obligations* FY79: $29,271 | TOTAL: $29,271
Prin Invest Hellman, R. D. | *NASA Tech Officer* LARC/Powell, C. A.
LARC/Key, K. F. | *CASE Category* 69-Psych, NEC

NSG 5389 **Boston University** **2434**
Development of computer models for the analysis of ultraviolet and optical stellar spectra

Period 06/15/79-06/14/80 | *Obligations* FY79: $12,992 | TOTAL: $12,992
Prin Invest Kamp, L. W. | *NASA Tech Officer* GSFC/Leckronz, D. S. | *CASE Category* 11-Astronomy

NSG 5407 **Boston University** **2435**
Study of the propagation of geomagnetic pulsation signals

Period 09/15/79-09/14/80 | *Obligations* FY79: $20,000 | TOTAL: $20,000
Prin Invest Hughes, W. J. | *NASA Tech Officer* GSFC/Corrigan, J. P. | *CASE Category* 11-Astronomy

NSG 7254 **Boston University** **2436**
The creation of plasma holes in the ionosphere and their potential use

Period 09/01/76-08/31/77 | *Obligations* FY79: | TOTAL: $10,000
Prin Invest Mendillo, M. | *NASA Tech Officer* HQ-ST/Taylor, W. W.
HQ-ST/Schmerling, E. R. | *CASE Category* 19-Phys Sci, NEC

NSG 7588 **Boston University** **2437**
Soil stabilization by a prokaryotic terrestrial mat in the south-western United States Implications for precambrian terrestrial biota

Period 04/15/79-04/18/80 | *Obligations* FY79: $16,000 | TOTAL: $16,000
Prin Invest Golubic, S. | *NASA Tech Officer* HQ-SB/Young, R. S. | *CASE Category* 54-Env Biology

NASA'S UNIVERSITY PROGRAM
MASSACHUSETTS (Continued)

NAS 8-33326 **Brandeis University** **2438**
An attempt to detect X-ray emission

Period	Obligations	
03/28/79-03/27/80	FY79: $1,380	TOTAL: $1,380
Prin Invest	*NASA Tech Officer*	*CASE Category*
Willis, A. G.	MSFC/Jones, J. B., Jr.	11-Astronomy
Strom, R. G.		

NAS 8-33343 **Brandeis University** **2439**
Study of the X-ray properties of ring galaxies

Period	Obligations	
02/22/79-02/21/80	FY79: $1,000	TOTAL: $1,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Ghigo, F. D.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 9-15147 **Brandeis University** **2440**
Vestibular selection criteria development

Period	Obligations	
09/01/76-03/01/80	FY79: $40,000	TOTAL: $136,743
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lackner, J. R.	JSC/Homick, J. L.	59-Life Sci, NEC

NAS 1-10492 **Harvard University** **2441**
Participation in science planning for Viking 1975 missions in area of entry science

Period	Obligations	
03/25/71-02/28/79	FY79:	TOTAL: $327,921
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B.	LARC/Williams, T. S., Jr.	31-Atmos Sci
	LARC/Glenny, W. R.	

NAS 2-9127 **Harvard University** **2442**
Interdisciplinary scientist, Pioneer/Venus program

Period	Obligations	
02/23/76-12/31/79	FY79: $78,200	TOTAL: $195,396
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goody, R. M.	ARC/Hall, C. F.	11-Astronomy
Apt, J.	ARC/Porter, D. L.	

NAS 2-10249 **Harvard University** **2443**
Pioneer/Venus data analysis

Period	Obligations	
07/20/79-12/31/79	FY79: $28,702	TOTAL: $28,702
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B.	ARC/Hall, C. F.	42-Astro Engr
	ARC/Porter, D. L.	

NAS 5-3949 **Harvard University** **2444**
Study and experiment for a high resolution ultraviolet telescope and spectrometer system

Period	Obligations	
01/28/65-06/30/80	FY79: $183,000	TOTAL: $39,457,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hughes, B. M.	MSFC/Snoddy, W. C.	11-Astronomy
Arhart, R. W.		

NAS 5-23494 **Harvard University** **2445**
X-ray ultraviolet spectroheliometer experiment for synchronous meteorological satellite study effort

Period	Obligations	
05/19/76-09/30/81	FY79:	TOTAL: $4,295,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reeves, E. M.	GSFC/Donley, J. L.	31-Atmos Sci

NAS 5-24134 **Harvard University** **2446**
Investigation of the upper atmosphere using data from AE satellites

Period	Obligations	
09/19/77-09/30/80	FY79: $20,000	TOTAL: $143,864
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B	GSFC/Rice, C. F.	31-Atmos Sci

NAS 8-31374 **Harvard University** **2447**
Scientific data reduction and analysis activities: ATM experiment S-054

Period	Obligations	
01/01/75-04/30/80	FY79: $114,000	TOTAL: $1,087,588
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vaiana, G. S.	MSFC/Snoddy, W. C.	13-Physics

NAS 8-32691 **Harvard University** **2448**
Crystal nucleation in glass-forming alloy and pure metal melts under containerless and vibrationless conditions

Period	Obligations	
06/23/78-06/22/81	FY79: $14,000	TOTAL: $54,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turnbull, D.	MSFC/Lacy, L. L.	13-Physics
Spaepen, F.	MSFC/Kroes, R. L.	

NAS 9-15326 **Harvard University** **2449**
Preliminary characterization of persisting circadian rhythms during space flight: Neurospora as a model system

Period	Obligations	
06/01/77-04/30/81	FY79.	TOTAL: $99,316
Prin Invest	*NASA Tech Officer*	*CASE Category*
Newton, R. W.	JSC/Nolte, R. W.	51-Biological Sci

NASW 2952 **Harvard University** **2450**
An atmospheric and oceanic nitrous oxide measurement program

Period	Obligations	
06/15/76-12/14/79	FY79: $140,000	TOTAL: $262,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B.	HQ-ST/King, J. H.	33-Oceanography

NASW 3242 **Harvard University** **2451**
Measurement of compounds in the stratosphere of the earth and the development of measurement techniques

Period	Obligations	
10/01/78-03/31/80	FY79: $1,481,000	TOTAL: $1,481,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, J.	HQ-ST/Seals, R. K., Jr.	31-Atmos Sci

NGL 22-007-006 **Harvard University** **2452**
Theoretical & experimental studies on ultraviolet solar physics

Period	Obligations	
07/10/63-09/30/79	FY79: $270,000	TOTAL: $4,991,398
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 22-007-069 **Harvard University** **2453**
Infrared absorption spectrophotometry of organic extractives from precambrian sediments

Period	Obligations	
05/29/66-05/31/80	FY79: $52,466	TOTAL: $385,209
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barghoorn, E. S.	HQ-SB/Young, R. S.	32-Geological Sci

NGL 22-007-228 **Harvard University** **2454**
Theoretical investigation of multiphase in Jupiter interior and possible relationship to behavior of outer atmospheric layers

Period	Obligations	
12/15/71-09/30/80	FY79: $471,001	TOTAL: $1,054,988
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goody, R. M.	HQ-SL/Murphy, R. E.	31-Atmos Sci
Lindzen, R. S.	HQ-SL/Brunk, W. E.	

NGL 22-007-247 **Harvard University** **2455**
Lunar sample analysis

Period	Obligations	
06/30/72-01/31/81	FY79:	TOTAL: $641,268
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hays, J. F.	JSC/Harris, J. W.	12-Chemistry

NGR 22-007-202 **Harvard University** **2456**
Investigations in the far ultraviolet solar spectrum

Period	Obligations	
11/05/70-10/31/79	FY79: $10,920	TOTAL: $1,054,920
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 22-007-269 **Harvard University** **2457**
Theoretical research in planetary physics

Period	Obligations	
09/01/73-09/30/79	FY79: $67,378	TOTAL: $275,575
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cameron, A. G.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/Dwornik, S. E.	

NGR 22-007-270 **Harvard University** **2458**
The operation of a balloon-borne 40-inch telescope for far infrared astronomy

Period	Obligations	
11/05/73-12/31/80	FY79: $118,000	TOTAL: $553,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fazio, G. G.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGR 22-007-272 **Harvard University** **2459**
Theoretical studies in space astronomy

Period	Obligations	
09/01/73-08/31/80	FY79: $95,770	TOTAL: $271,466
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cameron, A. G.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 2031 **Harvard University** **2460**
Chemistry and dynamics of trace stratospheric gases

Period	Obligations	
07/01/74-09/30/79	FY79: $92,000	TOTAL: $396,341
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElroy, M. B.	HQ-ST/Kakar, R. K.	31-Atmos Sci
Wofsy, S. C.	HQ-ST/Tilford, S. G.	

NSG 2265 **Harvard University** **2461**
Geometrical method[illegible] nonlinear dynamics

Period	Obligations	
09/01/77-08/31/80	FY79: $32,181	TOTAL: $82,681
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brockett, R. W.	ARC/Doolin, B. F.	41-Aero Engr
Byrnes, C. I.		

NSG 5128 **Harvard University** **2462**
Lyman alpha coronograph research sounding rocket program

Period	Obligations	
07/15/76-11/14/79	FY79: $304,950	TOTAL: $929,876
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	13-Physics
Kohl, J. L.	GSFC/Bissell, E. E.	

NSG 5143 **Harvard University** **2463**
Ultraviolet study of V Puggis

Period	Obligations	
12/01/76-08/31/78	FY79:	TOTAL: $895
Prin Invest	*NASA Tech Officer*	*CASE Category*
Flannery, B. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5160 **Harvard University** **2464**
Climate processes in the atmosphere and ocean

Period	Obligations	
02/14/77-01/31/79	FY79:	TOTAL: $89,532
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lindzen, R. S.	GSFC/Halem, M.	31-Atmos Sci
Sarachik, E. S.		

NSG 5176 **Harvard University** **2465**
Research of high resolution vacuum ultraviolet absorption cross-sections of stratospheric molecules

Period	Obligations	
06/01/77-05/31/80	FY79: $55,000	TOTAL: $152,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	GSFC/Reed, E. I.	13-Physics
Freeman, D. E.		
Yoshino, K.		

NSG 5191 **Harvard University** **2466**
Studies of chromospheres and corona of late-type stars: Reobservation of alpha aurigae

Period	Obligations	
08/01/77-07/31/78	FY79:	TOTAL: $15,158
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5226 **Harvard University** **2467**
Studies of selected soft X-ray sources

Period	Obligations	
02/01/78-01/31/79	FY79:	TOTAL: $9,215
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5228 **Harvard University** **2468**
Dynamics and evaluation of gulf stream meanders

Period	Obligations	
02/01/78-11/30/79	FY79: $20,000	TOTAL: $39,105
Prin Invest	*NASA Tech Officer*	*CASE Category*
Robinson, A. R.	GSFC/Halem, M.	33-Oceanography

NSG 5229 **Harvard University** **2469**
Ultraviolet investigations of stellar X-ray sources

Period	Obligations	
02/01/78-01/31/79	FY79:	TOTAL: $39,885
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5239 **Harvard University** **2470**
Observations of stellar chromospheres and coronae

Period	Obligations	
03/01/78-02/28/79	FY79:	TOTAL: $21,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5293 **Harvard University** **2471**
Studies of the local interstellar medium

Period	Obligations	
08/01/78-09/30/79	FY79:	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5312 **Harvard University** **2472**
X-ray observations of a compact binary source

Period	Obligations	
12/15/78-12/14/79	FY79: $8,000	TOTAL: $8,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5370 **Harvard University** **2473**
Ultraviolet studies of astronomical sources

Period	Obligations	
06/01/79-05/31/80	FY79: $27,047	TOTAL: $27,047
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K. Dalgarno, A.	GSFC/Boggess, A.	11-Astronomy

NSG 5380 **Harvard University** **2474**
International Ultraviolet Experiment (IUE) observations of interstellar carbon

Period	Obligations	
07/01/79-12/31/79	FY79: $8,531	TOTAL: $8,531
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dupree, A. K. Black, J. H.	GSFC/Boggess, A.	11-Astronomy

NSG 7095 **Harvard University** **2475**
Reflection spectra of sodium doped ammonia ice

Period	Obligations	
10/25/74-03/31/79	FY79: $33,835	TOTAL: $189,565
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pipkin, F. M.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7176 **Harvard University** **2476**
Participation in NASA core funding

Period	Obligations	
11/01/75-10/31/81	FY79: $300,000	TOTAL: $1,100,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Field, G. B. McElroy, M. B.	HQ-SP/Tate, F.	19-Phys Sci, NEC

NSG 7304 **Harvard University** **2477**
Absolute transition probabilities in ultraviolet spectra of interstellar molecules

Period	Obligations	
12/15/76-12/14/79	FY79: $45,000	TOTAL: $118,525
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	HQ-SC/Roman, N. G. HQ-SC/Boggess, N. W	31-Atmos Sci

NSG 7332 **Harvard University** **2478**
Planetary speckle imaging

Period	Obligations	
03/01/77-12/31/79	FY79: $40,000	TOTAL: $161,366
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goody, R. M.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7398 **Harvard University** **2479**
Martian dust storms

Period	Obligations	
07/01/77-06/30/79	FY79:	TOTAL: $32,829
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goody, R. M.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7461 **Harvard University** **2480**
Computer-assisted performance tests of the Lyman-alpha coronagraph

Period	Obligations	
07/01/78-06/30/79	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parkinson, W. H.	HQ-ST/Bohlin, J. D.	11-Astronomy

NSG 7497 **Harvard University** **2481**
Coronal plasma heating

Period	Obligations	
10/01/78-09/30/79	FY79: $34,673	TOTAL: $34,673
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vaiana, G. S.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7513 **Harvard University** **2482**
Creep and fracture properties of the moon

Period	Obligations	
01/01/79-12/31/79	FY79: $27,127	TOTAL: $27,127
Prin Invest	*NASA Tech Officer*	*CASE Category*
O'Connell, R. J.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7537 **Harvard University** **2483**
Coronal plasma processes: Heating and energetic balance of closed coronal structures

Period	Obligations	
01/01/79-12/31/80	FY79: $56,000	TOTAL: $56,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vaiana, G. S.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 9054 **Harvard University** **2484**
Fluid and electrolyte homeostasis during spaceflight: Ground-based preparative studies in a primate

Period	Obligations	
02/01/77-01/31/80	FY79: $45,000	TOTAL: $135,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moore-Ede M. C.	JSC/Leach, C. S.	56-Medical Sciences

NAS 1-9684 **Massachusetts Institute of Technology** **2485**
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis

Period	Obligations	
05/01/70-09/30/78	FY79:	TOTAL: $1,321,893
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biemann, K.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 1-14932 **Massachusetts Institute of Technology** **2486**
Science support for the stratospheric aerosol and gas experiment

Period	Obligations	
07/06/77-09/30/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cunnold, D. M.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NAS 1-15154 **Massachusetts Institute of Technology** **2487**
A study of noise and performance of propellers for light aircraft

Period	Obligations	
01/20/78-05/05/80	FY79: $132,509	TOTAL: $319,591
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ingard, K. V.	LARC/Hubbard, H. H.	41-Aero Engr
Kerrebrock, J. L.		

NAS 1-15268 **Massachusetts Institute of Technology** **2488**
Air transportation research and analysis

Period	Obligations	
03/15/78-03/14/81	FY79: $50,000	TOTAL: $141,977
Prin Invest	*NASA Tech Officer*	*CASE Category*
Taneja, N. K.	LARC/Maddalon, D. V.	41-Aero Engr
Ausrotas, R. A.		

NAS 2-9473 **Massachusetts Institute of Technology** **2489**
Pioneer/Venus data analysis of the radar altimeter experiment

Period	Obligations	
01/20/77-09/30/79	FY79: $103,100	TOTAL: $293,660
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pettingill, G. H.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NAS 2-9476 **Massachusetts Institute of Technology** **2490**
Pioneer/Venus data analysis

Period	Obligations	
07/12/77-12/31/79	FY79: $110,000	TOTAL: $294,680
Prin Invest	*NASA Tech Officer*	*CASE Category*
Counselman, C. C., III	ARC/Hall, C. F.	11-Astronomy
Pettengill, G. H.	ARC/Porter, D. L.	
Shapiro, I. I.		

NAS 2-9483 **Massachusetts Institute of Technology** **2491**
Pioneer/Venus data analysis of the Orbiting Celestial Mechanics (OCM) experiment

Period	Obligations	
02/17/78-09/30/79	FY79: $116,400	TOTAL: $176,262
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shapiro, I. I.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NAS 3-20473 **Massachusetts Institute of Technology** **2492**
Testing a NASA 20-inch stage and an air force mass flow stage

Period	Obligations	
10/29/76-03/12/80	FY79: $60,953	TOTAL: $482,116
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/Crouse, J. E.	41-Aero Engr
Epstein, A. H.		
Thompkins, W. T., Jr.		

NAS 5-11062 **Massachusetts Institute of Technology** **2493**
IMP H&J plasma experiment

Period	Obligations	
05/17/68-10/31/79	FY79: $130,000	TOTAL: $2,409,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bridge, H. S.	GSFC/Davis, M. A.	13-Physics

NAS 5-11450 **Massachusetts Institute of Technology** **2494**
An experiment to perform X-ray astronomy on the SAS-C spacecraft

Period	Obligations	
06/16/71-09/30/78	FY79:	TOTAL: $11,330,941
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, G. W.	GSFC/Rice, C. F.	11-Astronomy

NAS 5-21980 **Massachusetts Institute of Technology** **2495**
Nimbus F scanning microwave spectrometer data reduction and analysis

Period	Obligations	
01/25/74-09/30/79	FY79:	TOTAL: $623,816
Prin Invest	*NASA Tech Officer*	*CASE Category*
Staelin, D. H.	GSFC/Theon, J. S.	31-Atmos Sci

NAS 5-22915 **Massachusetts Institute of Technology** **2496**
Nimbus-G experiment team support for solar backscattered ultraviolet and total ozone mapping system

Period	Obligations	
01/28/76-12/27/80	FY79:	TOTAL: $120,610
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cunnold, D. M.	GSFC/Heath, D. F. GSFC/Nelsen, E. D.	41-Aero Engr

NAS 5-22929 **Massachusetts Institute of Technology** **2497**
Nimbus-G scanning multichannel microwave radiometer sensor

Period	Obligations	
01/28/76-09/27/80	FY79: $40,000	TOTAL: $162,843
Prin Invest	*NASA Tech Officer*	*CASE Category*
Staelin, D. H.	GSFC/Gloersen, P.	41-Aero Engr

NAS 5-23677 **Massachusetts Institute of Technology** **2498**
Feasibility study for a microwave spectrometer for meteorological observations from synchronous satellites

Period	Obligations	
09/28/76-06/30/79	FY79:	TOTAL: $155,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Staelin, D. H.	GSFC/Shiue, J. C.	11-Astronomy

NAS 5-24139 **Massachusetts Institute of Technology** **2499**
Study of radar reflectivity of snow covered ground in relationship between the radar reflectivity and certain snowpack aromatics

Period	Obligations	
07/26/77-07/25/80	FY79: $25,000	TOTAL: $65,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kong, J. A.	GSFC/Shiue, J. C.	45-Elec Engr

NAS 5-24441 **Massachusetts Institute of Technology** **2500**
Reduction and analysis of data from MIT X-ray observatory on-board SAS-3 spacecraft

Period	Obligations	
10/01/78-09/30/80	FY79: $1,129,535	TOTAL: $1,392,995
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, G. W.	GSFC/Corrigan, J. P.	11-Astronomy

NAS 5-24493 **Massachusetts Institute of Technology** **2501**
Design studies for far infrared absolute spectrophotometer for the cosmic background Explorer satellite

Period	Obligations	
03/01/78-02/01/80	FY79: $71,590	TOTAL: $190,082
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weiss, R.	GSFC/Nace, D. A. GSFC/Donohoe, M. J.	11-Astronomy

NAS 5-25091 **Massachusetts Institute of Technology** **2502**
Broadband communications satellite study group

Period	Obligations	
08/25/78-11/30/79	FY79:	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Staelin, D. H.	GSFC/Ippolitto, L.	45-Elec Engr

NAS 5-25543 **Massachusetts Institute of Technology** **2503**
Mission definition and software analysis study for a very long base interferometry utilizing the space shuttle

Period	Obligations	
04/10/79-02/10/80	FY79: $83,000	TOTAL: $83,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burke, B. F.	GSFC/Clark, T. C. GSFC/Stone, R. G.	11-Astronomy

NAS 5-25717 **Massachusetts Institute of Technology** **2504**
Long wavelength photodiode development

Period	Obligations	
06/20/79-12/20/79	FY79: $69,918	TOTAL: $69,918
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spears, D. L.	GSFC/Kostiuk, T. GSFC/Mumma, M. J.	47-Materials Engr

NAS 8-27972 **Massachusetts Institute of Technology** **2505**
Design, development, & operations of the AXR-2 integrated modulation collimator experiment under the HEAO program

Period	Obligations	
06/23/72-09/30/80	FY79: $284,000	TOTAL: $1,388,493
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bradt, H. V.	MSFC/Manning, H. S. MSFC/Gustin, R. A.	11-Astronomy

NAS 8-27975 **Massachusetts Institute of Technology** **2506**
Design and development of the AGR-5 high energy X-ray experiment under the HEAO program

Period	Obligations	
06/23/72-09/30/80	FY79: $387,000	TOTAL: $2,202,672
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lewin, W. H.	MSFC/Manning, H. S. MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 8-30537 **Massachusetts Institute of Technology** **2507**
Solidification (crystal growth) in the absence of gravitational forces

Period	Obligations	
12/03/73-08/31/78	FY79:	TOTAL: $270,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gatos, H. C.	MSFC/Davidson, M. C.	
Whitt, A. F.	MSFC/Schafer, C. F.	47-Materials Engr

NAS 8-30752 **Massachusetts Institute of Technology** **2508**
Design, development and operations of the HEAO mission B telescope experiment

Period	Obligations	
06/01/74-05/17/80	FY79: $312,000	TOTAL: $2,758,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, G. W.	MSFC/Manning, H. S.	11-Astronomy
Bradt, H. V.	MSFC/Power, J. A.	
Cabizares, C. R.		

NAS 8-31350 **Massachusetts Institute of Technology** **2509**
Uniform dispersions of crystallization processing

Period	Obligations	
07/01/75-03/31/79	FY79: $1,719	TOTAL: $472,527
Prin Invest	*NASA Tech Officer*	*CASE Category*
Uhlmann, D. R.	MSFC/Reeves, F. A.	47-Materials Engr
	MSFC/Williams, J. R.	

NAS 8-31552 **Massachusetts Institute of Technology** **2510**
Contact and coalescence of viscous and viscoelastic bodies

Period	Obligations	
11/01/75-03/31/79	FY79:	TOTAL: $128,161
Prin Invest	*NASA Tech Officer*	*CASE Category*
Uhlmann, D. R.	MSFC/Reeves, F. A.	47-Materials Engr
	MSFC/Snyder, R. S.	

NAS 8-32925 **Massachusetts Institute of Technology** **2511**
Study for extraterrestrial processing and manufacturing of large space systems

Period	Obligations	
06/20/78-07/31/79	FY79: $29,998	TOTAL: $109,224
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, R. H.	MSFC/VonTiesenhausen, G. F.	
Smith, D. B.	MSFC/Priest, C. C.	47-Materials Engr
Akin, D. L.		

NAS 8-32994 **Massachusetts Institute of Technology** **2512**
Research study growth of solid solution semiconductors

Period	Obligations	
07/17/78-10/17/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hitt, A. F.	MSFC/Davidson, M. C.	13-Physics
	MSFC/Bass, B. G.	

NAS 8-33137 **Massachusetts Institute of Technology** **2513**
Apollo telescope mount guest investigator program for studying coronal sources of the intra stream structure of the solar wind

Period	Obligations	
10/30/78-10/29/79	FY79: $17,620	TOTAL: $17,620
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sullivan, J. D.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C.	

NAS 8-33138 **Massachusetts Institute of Technology** **2514**
Apollo telescope mount guest investigator program for modeling of quasi-static coronal loops and areas

Period	Obligations	
09/20/78-03/31/80	FY79: $56,250	TOTAL: $56,250
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frankenthal, S.	MSFC/DeLoach, A. C.	13-Physics
	MSFC/Snoddy, W. C.	

NAS 9-15343 **Massachusetts Institute of Technology** **2515**
Definition of Spacelab I experiment on vestibular experiments

Period	Obligations	
04/04/77-06/30/81	FY79: $281,500	TOTAL: $527,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Young, L. R.	JSC/Luczkowski, S. M.	59-Life Sci, NEC
	JSC/Huffstetler, W. J.	

NCA 2-425801 **Massachusetts Institute of Technology** **2516**
Participation of transfer RNA in the origin of protein biosynthesis

Period	Obligations	
11/01/77-09/30/80	FY79: $10,000	TOTAL: $27,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rich, A.	ARC/MacElroy, R. D.	51-Biological Sci

NCC 1 23 **Massachusetts Institute of Technology** **2517**
Cockpit Display of Traffic Information (CDTI) crew function assessment

Period	Obligations	
07/01/79-01/31/80	FY79: $38,555	TOTAL: $38,555
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tole, J. R.	LARC/Harris, R. L., Sr.	41-Aero Engr
Young, L. R.		

NCC 3 1 **Massachusetts Institute of Technology** **2518**
Molecular-orbital studies of metal-insulator interfaces

Period	Obligations	
07/01/79-06/30/80	FY79: $33,000	TOTAL: $33,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, K. H.	LERC/Pepper, S. V.	19-Phys Sci, NEC
Wallace, S.		

NCC 5 8 Massachusetts Institute of Technology 2519
Geophysical study of the structures and processes of the continental convergence zones

Period	Obligations	
05/01/79-04/30/80	FY79: $49,800	TOTAL: $49,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molnar, P. Toksoz, M. N.	GSFC/Mead, G. D.	32-Geological Sci

NCC 5 14 Massachusetts Institute of Technology 2520
Application of laser ranging and very long baseline interoferometer data to a study of plate tectonics driving forces

Period	Obligations	
05/01/79-04/30/80	FY79: $69,850	TOTAL: $69,850
Prin Invest	*NASA Tech Officer*	*CASE Category*
Solomon, S. C. Toksoz, M. N.	GSFC/Mead, G. D.	32-Geological Sci

NGL 22-009-015 Massachusetts Institute of Technology 2521
Theoretical and experimental investigations of interplanetary medium and in gamma ray astronomy

Period	Obligations	
01/01/63-12/31/80	FY79: $230,000	TOTAL: $4,826,339
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bridge, H. S.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R	13-Physics

NGL 22-009-124 Massachusetts Institute of Technology 2522
Control optimization stabilization and computation of algorithms for space applications

Period	Obligations	
03/30/66-12/31/81	FY79: $95,000	TOTAL: $932,289
Prin Invest	*NASA Tech Officer*	*CASE Category*
Athans, M. Willsky, A. S.	ARC/Doolin, B. F.	49-Engr, NEC

NGL 22-009-308 Massachusetts Institute of Technology 2523
Maturation and development of mechanisms of orientation and postural control

Period	Obligations	
12/01/67-11/30/80	FY79:	TOTAL: $824,646
Prin Invest	*NASA Tech Officer*	*CASE Category*
Held, R. M.	ARC/Daunton, N. G.	69-Psych, NEC

NGL 22-009-383 Massachusetts Institute of Technology 2524
Research in propulsion and power generation

Period	Obligations	
01/16/69-08/31/81	FY79:	TOTAL: $1,038,167
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kerrebrock, J. L. Epstein, A. H. Thompkins, W. T., Jr.	LERC/McNally, W. D	41-Aero Engr

NGL 22-009-521 Massachusetts Institute of Technology 2525
Composition and structure of planetary atmospheres

Period	Obligations	
08/10/70-06/30/80	FY79: $92,050	TOTAL: $651,307
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lewis, J. S.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E	31-Atmos Sci

NGL 22-009-638 Massachusetts Institute of Technology 2526
Research in space science

Period	Obligations	
03/03/72-02/28/82	FY79: $250,000	TOTAL: $1,800,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bridge, H. S.	HQ-SP/Tate, F.	99-Multi-Discip

NGL 22-009-640 Massachusetts Institute of Technology 2527
Joint university research program on future air transportation technological needs

Period	Obligations	
11/16/71-01/31/83	FY79: $75,000	TOTAL: $568,332
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, R. W.	LARC/Downing, D. R LARC/MacE, W. D	41-Aero Engr

NGR 22-009-005 Massachusetts Institute of Technology 2528
Detection & identification of organic matter by mass spectrometry

Period	Obligations	
12/01/61-09/30/79	FY79: $80,000	TOTAL: $1,113,262
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biemann, K.	HQ-SB/Young, R. S	51-Biological Sci

NGR 22-009-277 Massachusetts Institute of Technology 2529
The prebiotic synthesis of polynucleotides and polynucleotide-directed polypeptides

Period	Obligations	
12/01/67-09/30/79	FY79: $40,000	TOTAL: $559,802
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rich, A.	HQ-SB/Young, R. S	12-Chemistry

NGR 22-009-339 Massachusetts Institute of Technology 2530
Investigation of containment/control of fragments from bursting turbine rotors

Period	Obligations	
06/14/68-12/14/79	FY79: $72,413	TOTAL: $815,865
Prin Invest	*NASA Tech Officer*	*CASE Category*
Witmer, E. A	LERC/Holms, A. G. LERC/Weiss, S.	41-Aero Engr

NGR 22-009-526 Massachusetts Institute of Technology 2531
Astronomy in the region between 1 mm to 0.1 mm wavelengths

Period	Obligations	
09/22/70-09/30/79	FY79: $51,304	TOTAL: $467,404
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weiss, R.	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G	11-Astronomy

NGR 22-009-540 Massachusetts Institute of Technology 2532
Lunar sample analysis

Period	Obligations	
02/08/71-06/30/79	FY79:	TOTAL: $501,325
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Simmons, M. G.	JSC/Harris, J. W.	13-Physics

NGR 22-009-551 Massachusetts Institute of Technology 2533
Lunar sample analysis

Period	Obligations	
02/11/71-09/30/79	FY79: $20,000	TOTAL: $453,300
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Burns, R. G.	JSC/Harris, J. W.	12-Chemistry

NGR 22-009-627 Massachusetts Institute of Technology 2534
Control of serotonin-containing neurons in the brain, by plasma tryptophan

Period	Obligations	
08/04/71-10/31/79	FY79: $64,000	TOTAL: $495,360
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Wurtman, R. J. Furnstrom, J. D.	ARC/Winget, C. M.	56-Medical Sciences

NGR 22-009-646 Massachusetts Institute of Technology 2535
Lunar sample analysis

Period	Obligations	
06/16/71-09/30/79	FY79: $21,000	TOTAL: $540,196
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Uhlmann, D. R.	JSC/Harris, J. W.	47-Materials Engr

NGR 22-009-672 Massachusetts Institute of Technology 2536
Ground-based radar study of the moon and planets

Period	Obligations	
03/06/72-10/31/80	FY79: $126,420	TOTAL: $414,320
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Pettengill, G. H.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGR 22-009-723 Massachusetts Institute of Technology 2537
Bosch process and evaluation of Bosch carbon as a sorbent

Period	Obligations	
09/19/72-12/31/79	FY79: $35,855	TOTAL: $198,994
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Reid, R. C.	ARC/Quattrone, P. D.	12-Chemistry

NGR 22-009-727 Massachusetts Institute of Technology 2538
Study in numerical modeling of atmospheric phenomena

Period	Obligations	
02/01/73-12/31/79	FY79: $162,700	TOTAL: $733,563
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Charney, J. G. Stone, P. H.	GSFC/Halem, M.	31-Atmos Sci

NGR 22-009-730 Massachusetts Institute of Technology 2539
X-ray astronomy experiments from sounding rockets

Period	Obligations	
03/22/72-08/31/80	FY79: $180,000	TOTAL: $1,260,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Rappaport, S. A. Boughan, E. LeVine, A.	GSFC/Bissell, E. E. HQ-SC/Opp, A. G.	11-Astronomy

NGR 22-009-798 Massachusetts Institute of Technology 2540
Role of brain areas controlling eye-head coordination in monkeys

Period	Obligations	
09/01/73-12/31/79	FY79: $30,000	TOTAL: $168,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Bizzi, E.	ARC/Daunton, N. G.	51-Biological Sci

NGR 22-009-826 Massachusetts Institute of Technology 2541
Neural orientation growth and maintenance

Period	Obligations	
09/01/73-11/30/79	FY79: $20,000	TOTAL: $158,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Nauta, W. J. Graybiel, A. M. Hein, A. V.	ARC/Daunton, N. G.	51-Biological Sci

NGR 22-009-839 Massachusetts Institute of Technology 2542
Wideband recording system for very long baseline interferometry

Period	Obligations	
04/01/74-03/15/80	FY79: $77,880	TOTAL: $444,170
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Counselman, C. C., III Shapiro, I. I.	GSFC/Clark, T. A. GSFC/Ryan, J. W.	32-Geological Sci

NSG 1048 Massachusetts Institute of Technology 2543
Wet photoelectric cells, conversion, transfer and storage of intense optical energy

Period	Obligations	
05/15/74-02/14/80	FY79: $58,000	TOTAL: $324,935
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Wrighton, M. S.	LARC/Byvik, C. E.	13-Physics

NSG 1190 Massachusetts Institute of Technology 2544
Characterization of high energy gap semiconductor

Period	Obligations	
10/01/75-09/30/78	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gatos, H. C.	LARC/Byvik, C. E. LARC/Conway, E. J.	47-Materials Engr

NSG 1312 **Massachusetts Institute of Technology** **2545**
Optimal design methods for multivariable sampled-data digital control systems

Period	Obligations	
07/01/76-05/31/79	FY79:	TOTAL: $99,000
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Stein, G.	LARC/Armstrong, E. S.	45-Elec Engr
Athans, M.	LARC/Elliott, J. R.	

NSG 1323 **Massachusetts Institute of Technology** **2546**
Research in algebraic manipulation

Period	Obligations	
07/01/76-06/30/80	FY79: $19,000	TOTAL: $153,984
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Moses, J.	LARC/Shoosmith, J. N.	22-Computer Science

NSG 1356 **Massachusetts Institute of Technology** **2547**
Study of feasibility of applying superconducting coil technology to general purpose magnetic balance and suspension system

Period	Obligations	
01/01/77-03/31/80	FY79: $75,543	TOTAL: $248,811
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Covert, E. E.	LARC/Boyden, R. P.	41-Aero Engr
Haldeman, C. W.	LARC/Kilgore, R. A.	
Finston, M.		

NSG 1413 **Massachusetts Institute of Technology** **2548**
Distributed feedback and grating-coupled emission lead-tin telluride double heterojunction laser diodes

Period	Obligations	
05/01/77-08/31/79	FY79:	TOTAL: $89,970
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Fonstad, C. G.	LARC/Akey, N. D.	13-Physics
	LARC/Hutchby, J. A.	

NSG 1453 **Massachusetts Institute of Technology** **2549**
Magnetic confinement and precipitation of macroscopic particles injected into an aerodynamic boundary layer

Period	Obligations	
10/01/77-08/31/79	FY79: $11,993	TOTAL: $51,981
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Melcher, J. R.	LARC/Bushnell, D. M.	41-Aero Engr
	LARC/Hefner, J. N.	

NSG 1502 **Massachusetts Institute of Technology** **2550**
Closed-loop roll control for magnetic balance systems

Period	Obligations	
02/01/78-01/31/80	FY79: $80,338	TOTAL: $160,423
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Covert, E. E.	LARC/Boyden, R. P.	41-Aero Engr
Haldeman, C. W.	LARC/Kilgore, R. A.	

NSG 1504 **Massachusetts Institute of Technology** **2551**
Toughening polyimide resins

Period	Obligations	
02/01/78-01/31/80	FY79:	TOTAL: $44,575
Prin Invest	*NASA Tech Officer*	*CASE Categ*
McGarry, F. J.	LARC/Price, H. L.	47-Materials Engr
	LARC/Johnston, N. J.	

NSG 1551 **Massachusetts Institute of Technology** **2552**
Research on atomic hydrogen at cryogenic temperatures, with application to a hydrogen maser frequency standard

Period	Obligations	
10/01/78-10/31/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Greytak, T. J.	LARC/Singh, J. J.	13-Physics
Kleppner, D.		

NSG 1553 **Massachusetts Institute of Technology** **2553**
Relationships between quadratic weights and linear quadratic regulator properties

Period	Obligations	
09/01/78-01/31/80	FY79:	TOTAL: $48,900
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Stein, G.	LARC/Armstrong, E. S.	45-Elec Engr
Athans, M.		

NSG 1583 **Massachusetts Institute of Technology** **2554**
Research on helicopter rotor broadband noise

Period	Obligations	
12/01/78-11/30/79	FY79: $49,807	TOTAL: $49,807
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Ingard, K. V.	LARC/Greene, G. C.	13-Physics
	LARC/Pegg, R. J.	

NSG 2010 **Massachusetts Institute of Technology** **2555**
Study of impact of space shuttle on stratospheric ozone

Period	Obligations	
03/01/74-12/31/79	FY79: $238,000	TOTAL: $1,106,260
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Prinn, R. G.	ARC/Poppoff, L. G.	31-Atmos Sci
Cunnold, D. M.		
Alyea, F. N.		

NSG 2032 **Massachusetts Institute of Technology** **2556**
Research on habituation to novel visual-vestibular environments with particular reference to space flight

Period	Obligations	
07/01/74-01/14/80	FY79: $75,000	TOTAL: $421,003
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Vogel, F. L.	ARC/Daunton, N. G.	59-Life Sci, NEC

NSG 2118 **Massachusetts Institute of Technology** **2557**
Experimentation in supervisory controls flight management

Period	Obligations	
11/01/75-02/15/80	FY79: $58,500	TOTAL: $226,210
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Sheridan, T. B.	ARC/Wempe, T. E.	99-Multi-Discip

NSG 2142 **Massachusetts Institute of Technology** **2558**
Helicopter rotor noise

Period	Obligations	
07/01/76-09/15/80	FY79: $52,321	TOTAL: $187,973
Prin Invest	*NASA Tech Officer*	*CASE Category*
Widnall, S. E.	ARC/Johnson, W. R. ARC/Rabbott, J. P., Jr.	41-Aero Engr

NSG 2172 **Massachusetts Institute of Technology** **2559**
Far infrared observations of AFCRL sources to be made from the C-141

Period	Obligations	
07/01/76-10/31/79	FY79: $19,428	TOTAL: $51,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kleinman, S. G.	ARC/Haughney, L. C.	11-Astronomy

NSG 2180 **Massachusetts Institute of Technology** **2560**
Simulation evaluation of combined four-dimensional area navigation and airborne traffic situation displays and procedures applied to terminal area maneuvers

Period	Obligations	
09/01/76-08/31/80	FY79: $56,000	TOTAL: $223,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Athans, M. Connelly, M. E.	ARC/Wempe, T. E. ARC/Palmer, E. A.	99-Multi-Discip

NSG 2196 **Massachusetts Institute of Technology** **2561**
Stratospheric transport processes and the interpretation of data on minor constituents

Period	Obligations	
12/01/76-10/31/79	FY79:	TOTAL: $96,710
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alyea, F. N. Cunnold, D. M. Prinn, R. G.	ARC/Poppoff, L. G.	31-Atmos Sci

NSG 2230 **Massachusetts Institute of Technology** **2562**
Visual vestibular interaction and its application to flight simulation

Period	Obligations	
04/01/77-09/30/79	FY79:	TOTAL: $119,888
Prin Invest	*NASA Tech Officer*	*CASE Category*
Young, L. R. Oman, C. M.	ARC/Stewart, J. D. ARC/Nagel, D. C.	49-Engr, NEC

NSG 2263 **Massachusetts Institute of Technology** **2563**
Far infrared observations of optical regions

Period	Obligations	
10/01/77-06/30/80	FY79: $13,800	TOTAL: $25,660
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wright, E. L.	ARC/Haughney, L. C.	11-Astronomy

NSG 2266 **Massachusetts Institute of Technology** **2564**
An investigation of advanced helicopter rotors having individual blade-control

Period	Obligations	
11/01/77-10/31/80	FY79: $199,915	TOTAL: $299,821
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ham, N. D.	ARC/Johnson, W. R. ARC/McCloud, J. L.	41-Aero Engr

NSG 2334 **Massachusetts Institute of Technology** **2565**
Maximizing storage stability of foods: Evaluation of research needs

Period	Obligations	
09/01/78-08/31/79	FY79: $4,408	TOTAL: $24,123
Prin Invest	*NASA Tech Officer*	*CASE Category*
Karel, M.	ARC/Quattrone, P. D.	59-Life Sci, NEC

NSG 2335 **Massachusetts Institute of Technology** **2566**
Regeneration of plant nutrients from waste processing effluents

Period	Obligations	
08/01/78-09/30/79	FY79: $21,705	TOTAL: $41,992
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meissner, H. P.	ARC/Quattrone, P. D.	59-Life Sci, NEC

NSG 2342 **Massachusetts Institute of Technology** **2567**
Opportunity observations of occultations and eclipses

Period	Obligations	
11/01/78-04/30/80	FY79: $66,755	TOTAL: $66,755
Prin Invest	*NASA Tech Officer*	*CASE Category*
Elliot, J. L.	ARC/Haughney, L. C.	11-Astronomy

NSG 2403 **Massachusetts Institute of Technology** **2568**
Development of a prototype experiment for treating wastes to nutrients for plant growth

Period	Obligations	
09/01/79-11/30/79	FY79: $90,000	TOTAL: $90,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Modell, M.	ARC/Quattrone, P. D.	59-Life Sci, NEC

NSG 3017 **Massachusetts Institute of Technology** **2569**
Silicon surface phenomena related to energy conversion

Period	Obligations	
05/01/74-02/21/80	FY79: $38,000	TOTAL: $201,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gatos, H. C.	LERC/Weinberg, I. LERC/Brandhorst, H. W., Jr.	47-Materials Engr

NSG 3044 **Massachusetts Institute of Technology** **2570**
Special finite elements for the analysis of flaw growth and fracture in fiber composites

Period	Obligations	
02/01/75-09/30/79	FY79:	TOTAL: $249,195
Prin Invest	*NASA Tech Officer*	*CASE Category*
McGarry, F. J. Mandell, J. F.	LERC/Chamis, C. C. LERC/Smith, G. T.	49-Engr, NEC

NSG 3046 **Massachusetts Institute of Technology** **2571**
Directional solidification of gamma/gamma prime-delta in situ composites

Period	Obligations	
06/30/75-09/30/79	FY79: $24,955	TOTAL: $194,435
Prin Invest	*NASA Tech Officer*	*CASE Category*
Flemings, M. C.	LERC/Scheuermann, C. M.	47-Materials Engr

NSG 3076 **Massachusetts Institute of Technology** **2572**
Effects of fuel composition on soot formation in combusters

Period	Obligations	
09/01/75-09/30/79	FY79:	TOTAL: $219,161
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoult, D. P	LERC/Brabbs, T. A.	41-Aero Engr
Rife, J. M.		

NSG 3079 **Massachusetts Institute of Technology** **2573**
Development of techniques for turbomachinery flutter clearance

Period	Obligations	
07/15/75-12/01/79	FY79: $70,000	TOTAL: $239,933
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/Adamczyk, J. J.	41-Aero Engr
Dugundji, J.		

NSG 3129 **Massachusetts Institute of Technology** **2574**
Studies of flow noise and acoustic power flow in lined ducts

Period	Obligations	
11/01/76-10/31/79	FY79:	TOTAL: $51,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ungard, K. U.	LERC/Baumeister, K. J.	41-Aero Engr
	LERC/Feiler, C. E.	

NSG 3175 **Massachusetts Institute of Technology** **2575**
Development of electromagnetic mass drivers

Period	Obligations	
12/01/77-11/30/79	FY79: $50,710	TOTAL: $81,510
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kolm, H. H.	LERC/Domitz, S.	42-Astro Engr
	LERC/Myers, I. T.	

NSG 3187 **Massachusetts Institute of Technology** **2576**
Theoretical and experimental study of the shear layer between two swirling streams

Period	Obligations	
04/01/78-03/31/80	FY79 $39,018	TOTAL: $80,347
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/Braun, W. H.	49-Engr, NEC

NSG 3208 **Massachusetts Institute of Technology** **2577**
Strut induced aerodynamic forging functions

Period	Obligations	
07/05/78-08/31/80	FY79: $35,000	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greitzer, E. M.	LERC/Adamczyk, J. J.	41-Aero Engr

NSG 3210 **Massachusetts Institute of Technology** **2578**
Wave propagation in fiber composites relating to acoustic-ultrasonic NDE techniques

Period	Obligations	
08/01/78-11/30/79	FY79:	TOTAL: $59,905
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, J. H., Jr.	LERC/Vary, A.	47-Materials Engr

NSG 3234 **Massachusetts Institute of Technology** **2579**
Viscous flow in transonic compressors

Period	Obligations	
12/15/78-11/15/79	FY79 $74,050	TOTAL: $74,050
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kerrebrock, J. L.	LERC/McNally, W. D.	41-Aero Engr
Thompkins, W. T., Jr.		
Epstein, A. H.		

NSG 3245 **Massachusetts Institute of Technology** **2580**
Combustion and operating characteristics of spark-ignition engines

Period	Obligations	
01/15/79-01/14/80	FY79: $49,984	TOTAL: $49,984
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heywood, J. B.	LERC/Cassidy, J. F.	46-Mech Engr
	LERC/Kempke, E. E.	

NSG 3286 **Massachusetts Institute of Technology** **2581**
Viscous flow and crystallization behavior of hydrocarbon mixtures

Period	Obligations	
08/02/79-08/01/80	FY79: $48,976	TOTAL: $48,976
Prin Invest	*NASA Tech Officer*	*CASE Category*
Uhlmann, D. R	LERC/Antoine, A. C	12-Chemistry

NSG 3303 **Massachusetts Institute of Technology** **2582**
Development of a methodology for horizontal axis wind turbine Dynamic analysis

Period	Obligations	
08/15/79-08/14/80	FY79: $65,902	TOTAL: $65,902
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, R. H.	LERC/Janetzke, D. C.	41-Aero Engr
Dugundji, J	LERC/Spera, D. A.	
Sanchez, M. M.		

NSG 5076 **Massachusetts Institute of Technology** **2583**
Numerical study of the atmospheric circulation of Venus

Period	Obligations	
08/17/75-05/31/80	FY79: $29,989	TOTAL: $127,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rivas, F. K.	GSFC/Hansen, J. E.	11-Astronomy
Stone, P. H.		

NSG 5113 **Massachusetts Institute of Technology** **2584**
Research in stratospheric dynamics

Period	Obligations	
07/01/76-06/30/80	FY79: $54,400	TOTAL: $176,903
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stone, P. H	GSFC/Hansen, J. E	31-Atmos Sci

NSG 5157 **Massachusetts Institute of Technology** **2585**
High speed correlation algorithms for massively parallel machines

Period	Obligations	
02/01/77-06/30/78	FY79:	TOTAL: $52,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McClellan, J. H.	GSFC/Schaefer, D. H.	45-Elec Engr

NSG 5166 **Massachusetts Institute of Technology** **2586**
Theoretical and numerical study of climate and climate change

Period	Obligations	
03/21/77-09/20/82	FY79: $68,500	TOTAL: $243,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Charney, J. G.	GSFC/Halem, M	31-Atmos Sci
Stone, P. H.		

NSG 5253 **Massachusetts Institute of Technology** **2587**
Research of gravity field over the Indian Ocean

Period	Obligations	
03/15/78-10/31/79	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sclater, J. G.	GSFC/Smith, D. E.	32-Geological Sci
Munsch, C.		

NSG 5260 **Massachusetts Institute of Technology** **2588**
Geophysical study of the structure and processes of the continental convergence zones

Period	Obligations	
04/01/78-04/30/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molnar, P.	GSFC/Frey, H. V.	32-Geological Sci
Toksoz, M. N.	GSFC/Mead, G. D.	

NSG 5306 **Massachusetts Institute of Technology** **2589**
Inference of effective soil properties from observed vegetal canopy density

Period	Obligations	
11/15/78-01/31/80	FY79: $40,023	TOTAL: $40,023
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eagleson, P. S.	GSFC/Halem, M.	32-Geological Sci

NSG 7010 **Massachusetts Institute of Technology** **2590**
Precision selenodesy and lunar libration through very long baseline interferometry: Observation of ALSEPS

Period	Obligations	
01/01/74-12/31/79	FY79: $45,000	TOTAL: $355,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Counselman, C. C., III	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7077 **Massachusetts Institute of Technology** **2591**
Chemical aspects of lunar origin and physical studies of lunar and meteoritic materials

Period	Obligations	
07/01/74-05/31/78	FY79:	TOTAL: $58,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Suomi, V. E.	HQ-SL/Williams, R.	32-Geological Sci
Brecher, A.		
Skibo, D. N.		

NSG 7081 **Massachusetts Institute of Technology** **2592**
Models of the composition structure and evolution of the lunar interior

Period	Obligations	
06/01/74-02/29/80	FY79: $299,479	TOTAL: $899,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
Toksoz, M. N.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7186 **Massachusetts Institute of Technology** **2593**
An observatory search for and study of new IR sources reported in the AFCRL catalogue

Period	Obligations	
12/01/75-01/31/80	FY79: $36,883	TOTAL: $126,883
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kleinman, S. G.	HQ-SC/Boggess, N. W	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7297 **Massachusetts Institute of Technology** **2594**
Studies of stress history of terrestrial lithospheres

Period	Obligations	
01/01/77-12/31/79	FY79: $30,000	TOTAL: $72,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Solomon, S. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7328 **Massachusetts Institute of Technology** **2595**
Research on integrated silicon balometers

Period	Obligations	
03/01/77-02/28/80	FY79: $55,000	TOTAL: $168,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weiss, R	HQ-SC/Boggess, N. W.	11 Astronomy
	HQ-SC/Roman, N. G.	

NSG 7329 **Massachusetts Institute of Technology** **2596**
Application of lunar laser ranging data to a study of plate tectonic driving forces

Period	Obligations	
04/01/78-02/31/80	FY79:	TOTAL: $125,820
Prin Invest	*NASA Tech Officer*	*CASE Category*
Soloman, S. C.	HQ-ES/Flinn, E. A.	32-Geological Sci
Toksoz, M. N.	HQ-SL/Quaide, W. L.	

NSG 7331 **Massachusetts Institute of Technology** **2597**
Crystal growth of device quality galium arsenite in space

Period	Obligations	
04/01/79-03/31/82	FY79: $400,000	TOTAL: $1,200,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gatos, H. C.	HQ-ET/Vitale, J. A.	47-Materials Engr

NSG 7338 **Massachusetts Institute of Technology** **2598**
Temperature dependencies of electronic transition energies of healed lunar materials

Period	Obligations	
03/01/77-09/30/78	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burns, R. G.	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7339 **Massachusetts Institute of Technology** **2599**
X-ray balloon observations from the Northern and Southern Hemispheres

Period	Obligations	
04/01/77-02/01/80	FY79: $125,000	TOTAL: $290,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lewin, W. H.	HQ-SC/Opp, A. G.	11-Astronomy
	HQ-SC/Kaluzienski, L. J.	

NSG 7396 **Massachusetts Institute of Technology** **2600**
Payloads for space

Period	Obligations	
09/12/77-10/31/78	FY79: $96,147	TOTAL: $174,147
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mar, J. W.	HQ-RT/Schwenk, F. C.	42-Astro Engr
	HQ-RR/Henry, W.	

NSG 7428 **Massachusetts Institute of Technology** **2601**
Analysis of lunar ranging data for earth dynamics applications

Period	Obligations	
04/01/79-01/31/80	FY79:	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Counselman, C. C., III	HQ-ER/Flinn, E. A.	32-Geological Sci
Shapiro, I. I.		
King, R. W.		

NSG 7432 **Massachusetts Institute of Technology** **2602**
Experiments to probe the chemistry and surface activities of the Martian surface

Period	Obligations	
01/01/78-12/31/78	FY79:	TOTAL: $32,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biemann, K.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7438 **Massachusetts Institute of Technology** **2603**
Seismic sciences and experimental concepts for active seismic experiment on Mars

Period	Obligations	
04/01/78-03/31/79	FY79:	TOTAL: $18,740
Prin Invest	*NASA Tech Officer*	*CASE Category*
Solomon, S. C.	HQ-SL/Dwornik, S. E.	32-Geological Sci
Toksoz, M. N.	HQ-SL/Boyce, J. M.	

NSG 7467 **Massachusetts Institute of Technology** **2604**
Field studies of possible impact craters in Ontario

Period	Obligations	
06/15/78-06/14/79	FY79: $2,000	TOTAL: $17,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pinson, W.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/Dwornik, S. E.	

NSG 7526 **Massachusetts Institute of Technology** **2605**
Portable high-speed photometry systems for observing occultations

Period	Obligations	
01/01/79-12/31/79	FY79: $66,090	TOTAL: $66,090
Prin Invest	*NASA Tech Officer*	*CASE Category*
Elliot, J. L.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7556 **Massachusetts Institute of Technology** **2606**
Viking radio science data analysis and synthesis

Period	Obligations	
03/01/79-04/14/80	FY79: $80,000	TOTAL: $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shapiro, I. I.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7604 **Massachusetts Institute of Technology** **2607**
Electronic spectra of heated lunar materials: Quantifying remote sensed spectra of hot planetary surfaces

Period	Obligations	
05/01/79-04/30/80	FY79: $60,510	TOTAL: $60,510
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burns, R. G.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7638 **Massachusetts Institute of Technology** **2608**
Mars/Orbiter and comet mission

Period	Obligations	
04/15/79-04/14/80	FY79: $140,000	TOTAL: $140,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCord, T. B.	HQ-SL/Murphy, R. E.	31-Atmos Sci

NCA 2-785801 **Tufts University** **2609**
Psychometric modeling of the human information processing demands of interactions with avionic computers

Period	Obligations	
01/01/78-12/31/79	FY79: $11,928	TOTAL: $23,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chechile, R. A.	ARC/Palmer, E. A.	69-Psych, NEC

NSG 2156 **Tufts University** **2610**
Study of pilot controller interaction under various simulated advanced ATC and navigation concepts

Period	Obligations	
06/01/76-03/31/80	FY79: $70,900	TOTAL: $332,962
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kreifeldt, J. G.	ARC/Wempe, T. E.	99-Multi-Discip

NSG 1295 **University of Lowell** **2611**
Structural response and input identification

Period	Obligations	
04/01/76-11/30/79	FY79:	TOTAL: $88,827
Prin Invest	*NASA Tech Officer*	*CASE Category*
McElman, J. A.	LARC/Fralich, R. W.	41-Aero Engr
O'Callahan, J. C.	LARC/Pinson, L. D.	
Shepard, G. D.		

NAS 2-9129 **University of Massachusetts - Amherst** **2612**
Interdisciplinary scientist and radar team member

Period	Obligations	
01/22/76-09/30/80	FY79: $22,000	TOTAL: $68,456
Prin Invest	*NASA Tech Officer*	*CASE Category*
McGill, G. E.	ARC/Hall, C. F.	11-Astronomy
	ARC/Porter, D. L.	

NGL 22-010-023 **University of Massachusetts - Amherst** **2613**
Theoretical studies of diffuse reflection and transmission of radiation in planetary atmospheres

Period	Obligations	
05/24/67-08/31/81	FY79: $97,980	TOTAL: $556,929
Prin Invest	*NASA Tech Officer*	*CASE Category*
Irvine, W. M.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGL 22-010-089 **University of Massachusetts - Amherst** **2614**
Lunar sample analysis

Period	Obligations	
03/16/71-09/30/79	FY79: $14,000	TOTAL: $191,875
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haggerty, S. E.	JSC/Harris, J. W.	13-Physics

NGR 22-010-076 **University of Massachusetts - Amherst** **2615**
Reconnaissance study of large geologic ring structures on Mars

Period	Obligations	
05/19/70-01/31/80	FY79: $43,684	TOTAL: $262,675
Prin Invest	*NASA Tech Officer*	*CASE Category*
McGill, G. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7197 **University of Massachusetts - Amherst** **2616**
Surface chemistry and the search for life on Mars

Period	Obligations	
10/01/77-09/31/79	FY79: $36,320	TOTAL: $64,881
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huguenin, R. L.	HQ-SB/Young, R. S.	12-Chemistry
	HQ-SL/Dwornik, S. E.	

NSG 7405 **University of Massachusetts - Amherst** **2617**
Mineralogy and weathering processes on Mars

Period	Obligations	
10/01/77-09/30/79	FY79: $30,000	TOTAL: $64,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huguenin, R. L.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7571 **University of Massachusetts - Amherst** **2618**
Structural evolution and stress history of the Tharsis region of Mars

Period	Obligations	
05/01/79-04/30/80	FY79: $23,460	TOTAL: $23,460
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wise, D.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 9069 **University of Massachusetts - Amherst** **2619**
Comparative geochemical and petrological study of lunar and terrestrial basaltic volcanism

Period	Obligations	
05/15/78-01/31/80	FY79: $27,384	TOTAL: $49,091
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rhodes, J. M.	JSC/Harris, J. W.	32-Geological Sci

NSG 5376 **Wheaton College** **2620**
Ultraviolet spectrophotometry of planetary nebulae

Period	Obligations	
07/01/79-06/30/80	FY79: $6,100	TOTAL: $6,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barker, T.	GSFC/Boggess, A.	11-Astronomy

NSG 5218 **Williams College** **2621**
Effects of hydrogen atom spin exchange collisions on atomic hydrogen maser oscillation frequency

Period	Obligations	
12/01/77-11/30/79	FY79: $12,000	TOTAL: $23,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Crampton, S. B.	GSFC/Reinhardt, V. S.	13-Physics

NSG 3137 **Worcester Polytechnic Institute** **2622**
Investigation of the 1.15 micron photoconductive response of silicon devices

Period	Obligations	
02/01/77-05/31/79	FY79	TOTAL: $87,361
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lanyon, H. P.	LERC/Godlewski, M. P.	45-Elec Engr
	LERC/Brandhorst, H. W., Jr.	

NSG 7154 **Worcester Polytechnic Institute** **2623**
Mission-oriented studies of planetary biology

Period	Obligations	
10/01/75-09/30/80	FY79: $100,000	TOTAL: $436,390
Prin Invest	*NASA Tech Officer*	*CASE Category*
Danielli, J. F.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7392 **Worcester Polytechnic Institute** **2624**
Martian chemistry relevant to biological activity and the Viking labeled release experiments

Period	Obligations	
12/15/77-11/30/79	FY79: $18,315	TOTAL: $68,023
Prin Invest	*NASA Tech Officer*	*CASE Category*
Plumb, R. C	HQ-SB/Young, R. S	12-Chemistry

MICHIGAN

NGL 23-004-083 **Michigan State University** **2625**
Use of remote sensing for land use policy formulation

Period	Obligations	
06/08/72-05/31/82	FY79: $110,000	TOTAL: $990,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boylan, M. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 3299 **Michigan State University** **2626**
Generation of free radicals and ions for spacecraft propulsion

Period	Obligations	
08/15/79-02/14/80	FY79: $78,760	TOTAL: $78,760
Prin Invest	*NASA Tech Officer*	*CASE Category*
Asmussen, J. Hawley, M. C. Kerber, R. L.	LERC/Nakanishi, S.	19-Phys Sci, NEC

NSG 7293 **Michigan State University** **2627**
Radiative fluid dynamic studies of the sun and compact H-II regions

Period	Obligations	
10/01/76-12/31/79	FY79: $17,270	TOTAL: $42,270
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stein, R. F.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 3215 **Michigan Technological University** **2628**
Diffusion modeling of cyclic oxidation transport processes in Ni-base alloys

Period	Obligations	
08/01/78-07/31/80	FY79: $29,086	TOTAL: $55,861
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heckel, R. W.	LERC/Barrett, C. A. LERC/Lowell, C. E.	47-Materials Engr

NAS 1-14394 **University of Michigan - Ann Arbor** **2629**
Science support for the limb infrared monitor of the stratosphere experiment

Period	Obligations	
04/09/76-10/31/80	FY79: $54,509	TOTAL: $110,509
Prin Invest	*NASA Tech Officer*	*CASE Category*
Drayson, S. R.	LARC/Russell, J. M., III LARC/James, R. L., Jr.	31-Atmos Sci

NAS 1-15333 **University of Michigan - Ann Arbor** **2630**
High-toughness graphite/epoxy composite material experiment for the Long Duration Exposure Facility (LDEF), phases I and II

Period	Obligations	
03/31/78-05/29/80	FY79: $12,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Felbeck, D. K. Durant, W. H.	LARC/Jones, J. L.	47-Materials Engr

NAS 2-9126 **University of Michigan - Ann Arbor** **2631**
Interdisciplinary scientist, Pioneer/Venus program

Period	Obligations	
02/10/76-09/30/80	FY79: $135,000	TOTAL: $240,628
Prin Invest	*NASA Tech Officer*	*CASE Category*
Donahue, T. M.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 2-9130 **University of Michigan - Ann Arbor** **2632**
Interdisciplinary scientist, Pioneer/Venus program

Period	Obligations	
02/09/76-09/30/80	FY79: $110,620	TOTAL: $175,311
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagy, A. F.	ARC/Hall, C. F. ARC/Porter, D. L.	11-Astronomy

NAS 5-11376 **University of Michigan - Ann Arbor** **2633**
AE-C, D, & E Pelz experiment

Period	Obligations	
01/07/71-11/29/79	FY79: $39,000	TOTAL: $1,118,933
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Hedin, A. E. GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-11380 **University of Michigan - Ann Arbor** **2634**
AE-C, D, and E neutral temperature experiment

Period	Obligations	
02/03/71-11/29/79	FY79: $39,000	TOTAL: $1,089,320
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-20939 **University of Michigan - Ann Arbor** **2635**
Laboratory tests and development of mass spectrometer subsystems

Period	Obligations	
02/13/75-12/31/78	FY79:	TOTAL: $229,571
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R Kennedy, B. R.	GSFC/Cooley, J. E. GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-23006 **University of Michigan - Ann Arbor** **2636**
Atmosphere Explorer visual airglow photometer

Period	Obligations	
08/24/71-09/30/80	FY79: $48,593	TOTAL: $1,652,178
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hays, P. B. Carignan, G. R.	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-24295 **University of Michigan - Ann Arbor** **2637**
Neutral atmosphere composition experiment for the Dynamic Explorer (DE) spacecraft

Period	Obligations	
07/26/77-04/30/81	FY79: $258,000	TOTAL: $461,245
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Fellerman, K. D. GSFC/Lidston, J. M.	13-Physics

NAS 5-24296 **University of Michigan - Ann Arbor** **2638**
Fabry-Perot inteferometer for the Dynamic Explorer

Period	Obligations	
07/26/77-08/31/81	FY79: $516,000	TOTAL: $951,576
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Hays, P. B.	GSFC/Fellerman, K. D.	13-Physics
	GSFC/Lidston, J. M.	

NAS 5-24331 **University of Michigan - Ann Arbor** **2639**
Theoretical investigation to identify and develop specific aeronomic studies and problems adaptable to the AE satellite

Period	Obligations	
12/01/77-09/30/80	FY79: $79,469	TOTAL: $181,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walker, J.	GSFC/Rice, C. F.	31-Atmos Sci
Torr, D. G.		

NAS 5-24454 **University of Michigan - Ann Arbor** **2640**
Design of electronic system for Jupiter orbiter probe

Period	Obligations	
02/14/78-10/01/78	FY79:	TOTAL: $98,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B.	11-Astronomy
	GSFC/Cooley, J. E.	

NAS 5-25002 **University of Michigan - Ann Arbor** **2641**
Wind and temperature spectrometer for the Dynamic Explorer (DE) spacecraft

Period	Obligations	
03/30/78-02/28/81	FY79: $210,000	TOTAL: $381,903
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-25031 **University of Michigan - Ann Arbor** **2642**
Develop, fabricate, test, and support hardware for the San Marco/wind and temperature experiment

Period	Obligations	
05/05/78-03/31/82	FY79: $143,000	TOTAL: $393,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	31-Atmos Sci

NAS 5-25038 **University of Michigan - Ann Arbor** **2643**
Theory formulation and analysis support for the Dynamic Explorer (DE) spacecraft

Period	Obligations	
08/22/78-02/28/83	FY79: $23,000	TOTAL: $33,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagy, A. F.	GSFC/Hoffman, R. A.	13-Physics
	GSFC/Smith, P. H.	

NAS 5-25145 **University of Michigan - Ann Arbor** **2644**
Electronic system parts for Galileo probe neutral mass spectrometer

Period	Obligations	
07/31/78-01/31/80	FY79: $38,400	TOTAL: $143,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-25153 **University of Michigan - Ann Arbor** **2645**
Fabrication of electronic system for the Galileo probe neutral mass spectrometer

Period	Obligations	
08/10/78-04/19/82	FY79: $246,200	TOTAL: $348,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Niemann, H. B.	31-Atmos Sci

NAS 5-25158 **University of Michigan - Ann Arbor** **2646**
Cmos Radiation Effects Measurement (CREM) experiment and associated Ground Support Equipment (GSE)

Period	Obligations	
08/16/78-07/31/81	FY79: $163,236	TOTAL: $227,236
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fresh, F.	GSFC/Haykin, D.	13-Physics
	GSFC/Cliff, R.	

NAS 5-25409 **University of Michigan - Ann Arbor** **2647**
Protoflight Langmuir probe instrument for Dynamic Explorer

Period	Obligations	
11/27/78-03/31/81	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Krehbiel, J. P.	13-Physics
	GSFC/Busboso, E. R.	

NAS 5-25916 **University of Michigan - Ann Arbor** **2648**
Atmosphere Explorer, Dynamic Explorer, and San Marco data software development

Period	Obligations	
09/27/79-09/26/82	FY79: $6,000	TOTAL: $6,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	GSFC/Spencer, N. W.	13-Physics
	GSFC/Way, S.	

NAS 6-2794 **University of Michigan - Ann Arbor** **2649**
Design, fabricate and test five payloads

Period	Obligations	
10/15/76-09/30/79	FY79: $159,427	TOTAL: $506,551
Prin Invest	*NASA Tech Officer*	*CASE Category*
Horvath, J. J.	WFC/Frostrom, R. J., Jr.	31-Atmos Sci
	WFC/Perry, T. W., Jr.	

NAS 8-31987 **University of Michigan - Ann Arbor** **2650**
Mass spectrometer for induced environment contamination monitor

Period	Obligations	
04/30/76-11/29/79	FY79: $42,851	TOTAL: $728,651
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	MSFC/Ruff, R. C.	19-Phys Sci, NEC
Maurer, J. C.	MSFC/Naumann, R. J.	
Eusch, T. A.		

NAS 8-32332 **University of Michigan - Ann Arbor** **2651**
Retarding ion mass spectrometer on the high altitude Electrodynamic Explorer

Period	Obligations	
01/17/77-01/31/80	FY79: $33,638	TOTAL: $48,614
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R.	MSFC/Chappell, C. R. MSFC/Thomas, P. E.	19-Phys Sci, NEC

NAS 8-32569 **University of Michigan - Ann Arbor** **2652**
Spacelab mission 1 experiment 24, an imaging spectrometric observatory for Spacelab 1

Period	Obligations	
04/15/77-05/31/82	FY79: $1,284,000	TOTAL: $2,911,962
Prin Invest	*NASA Tech Officer*	*CASE Category*
Torr, M. R.	MSFC/Jones, C. T. MSFC/Ise, R.	19-Phys Sci, NEC

NAS 8-32661 **University of Michigan - Ann Arbor** **2653**
Spacelab outgassing

Period	Obligations	
09/20/77-01/19/81	FY79: $60,000	TOTAL: $120,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shyn, T. W. Taeusch, D. Carignan, G. R.	MSFC/Ruff, R. C. MSFC/Shriver, E. L.	39-Env Sci, NEC

NAS 9-15244 **University of Michigan - Ann Arbor** **2654**
Evaluations of postural mechanisms under dynamic conditions

Period	Obligations	
02/01/77-09/01/80	FY79: $30,000	TOTAL: $159,871
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. J. Tugh, J.	JSC/Homick, J. L.	56-Medical Sciences

NAS 9-15375 **University of Michigan - Ann Arbor** **2655**
Definition of Spacelab I experiment for adaptation of vestibulospinal reflex mechanisms during space flight

Period	Obligations	
06/01/77-04/01/80	FY79:	TOTAL: $81,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. J.	JSC/Reschke, M. F.	59-Life Sci, NEC

NAS 9-15663 **University of Michigan - Ann Arbor** **2656**
Design and development of linear accelerator

Period	Obligations	
08/01/78-03/01/80	FY79:	TOTAL: $38,588
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, D. J.	JSC/Reschke, M. F.	56-Medical Sciences

NGL 23-005-275 **University of Michigan - Ann Arbor** **2657**
Solar research program of McMath-Hulbert Observatory and improvement of photoheliographic telescope

Period	Obligations	
04/08/68-09/30/79	FY79: $79,589	TOTAL: $769,589
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mohler, O. C.	HQ-ST/Bohlin, J. D.	11-Astronomy

NGR 23-005-015 **University of Michigan - Ann Arbor** **2658**
Theoretical investigation of space charge waves in ionosphere and space plasma sheaths

Period	Obligations	
10/28/63-06/30/79	FY79:	TOTAL: $1,522,805
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagy, A. F.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R.	31-Atmos Sci

NGR 23-005-094 **University of Michigan - Ann Arbor** **2659**
An investigation of plasma kinetics, with emphasis on the interaction between rarefied plasmas and moving bodies

Period	Obligations	
06/26/64-08/31/79	FY79: $23,500	TOTAL: $406,101
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liu, V. C	HQ-SL/Murphy, R. E HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 23-005-320 **University of Michigan - Ann Arbor** **2660**
Theoretical and experimental studies of spacecraft space plasma interactions

Period	Obligations	
01/29/69-07/31/80	FY79: $87,000	TOTAL: $534,557
Prin Invest	*NASA Tech Officer*	*CASE Category*
Samir, U.	HQ-ST/Hedin, A. E. HQ-ST/Schmerling, E. R.	13-Physics

NGR 23-005-360 **University of Michigan - Ann Arbor** **2661**
A program in aeronomy

Period	Obligations	
12/29/69-11/30/79	FY79: $177,400	TOTAL: $1,628,501
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sharp, W. E.	GSFC/Bissell, E. E. HQ-ST/Schmerling, E. R.	13-Physics

NGR 23-005-404 **University of Michigan - Ann Arbor** **2662**
Optical studies of galactic X-ray sources

Period	Obligations	
03/02/71-02/28/79	FY79: $18,643	TOTAL: $145,468
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hiltner, W. A	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NGR 23-005-528 **University of Michigan - Ann Arbor** **2663**
Fiber-reinforced solids possessing great fracture toughness & the role of interfacial strength

Period	Obligations	
07/26/72-10/31/79	FY79: $32,126	TOTAL: $179,198
Prin Invest	*NASA Tech Officer*	*CASE Category*
Felbeck, D. K.	LARC/Fichter, W. B.	47-Materials Engr

NSG 1243 **University of Michigan - Ann Arbor** **2664**
Rain scavenging of solid rocket motor exhaust clouds

Period	Obligations	
10/01/75-09/30/79	FY79: $6,474	TOTAL: $217,735
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dingle, A. N.	LARC/Pellett, G. L.	31-Atmos Sci

NSG 1306 **University of Michigan - Ann Arbor** **2665**
Models and techniques for evaluating the effectiveness of aircraft computing systems

Period	Obligations	
05/01/76-05/31/80	FY79: $58,728	TOTAL: $232,593
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meyer, J. F.	LARC/Migneault, G. E.	45-Elec Engr

NSG 1326 **University of Michigan - Ann Arbor** **2666**
Study of shock boundary layer interaction in transonic flow

Period	Obligations	
08/01/76-10/31/79	FY79:	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adamson, T. C., Jr	LARC/South, J. C., Jr.	41-Aero Engr
Sichel, M.		
Messiter, A. F.		

NSG 1373 **University of Michigan - Ann Arbor** **2667**
Halogen occultation experiment, phase I and II

Period	Obligations	
12/01/76-12/31/79	FY79: $37,537	TOTAL: $81,801
Prin Invest	*NASA Tech Officer*	*CASE Category*
Drayson, S. R.	LARC/Sullivan, E. M.	31-Atmos Sci
	LARC/Russell, J. M., III	

NSG 1448 **University of Michigan - Ann Arbor** **2668**
Trajectories optimization in hypersonic flight

Period	Obligations	
09/01/77-02/29/80	FY79:	TOTAL: $57,016
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vinh, N. X.	LARC/Dunning, R. S.	41-Aero Engr
	LARC/Elliott, J. R.	

NSG 1482 **University of Michigan - Ann Arbor** **2669**
Application of earth's albedo measurements to climate studies

Period	Obligations	
01/01/78-10/31/79	FY79:	TOTAL: $29,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bartman, F. L.	LARC/Smith, G. L.	31-Atmos Sci
	LARC/Suttles, J. T.	

NSG 1494 **University of Michigan - Ann Arbor** **2670**
Analysis and prediction of dynamic aircraft tire data from static measurements

Period	Obligations	
03/01/78-03/31/80	FY79: $14,268	TOTAL: $39,348
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, S. K.	LARC/McCarty, J. L.	41-Aero Engr
	LARC/Tanner, J. A.	

NSG 1607 **University of Michigan - Ann Arbor** **2671**
Transient temperatures in aircraft tires

Period	Obligations	
09/01/79-03/31/81	FY79: $53,333	TOTAL: $53,333
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, S. K.	LARC/McCarty, J. L.	41-Aero Engr
	LARC/Tanner, J. A.	

NSG 2018 **University of Michigan - Ann Arbor** **2672**
Graduate research aeronautics program

Period	Obligations	
04/01/74-04/30/79	FY79:	TOTAL: $250,671
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kroeger, R. A.	ARC/Feistel, T. W.	41-Aero Engr

NSG 2113 **University of Michigan - Ann Arbor** **2673**
Improvement of light aircraft propulsion efficiency

Period	Obligations	
10/01/75-04/30/79	FY79	TOTAL: $294,550
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kroeger, R. A.	ARC/Anderson, S. B.	41-Aero Engr
Eagle, D.		

NSG 2333 **University of Michigan - Ann Arbor** **2674**
Crash-impact fire of fiber reinforced composites

Period	Obligations	
08/15/78-11/30/79	FY79 $4,000	TOTAL: $39,387
Prin Invest	*NASA Tech Officer*	*CASE Category*
Springer, G. S.	ARC/Fish, R. H.	49-Engr, NEC
	ARC/Mansfield, J. A.	

NSG 3148 **University of Michigan - Ann Arbor** **2675**
Fundamental aspects of gas turbine combustion

Period	Obligations	
05/01/77-04/30/79	FY79	TOTAL: $132,310
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nicholls, J. A.	LERC/Cooper, L. P.	41-Aero Engr

NSG 3161 **University of Michigan - Ann Arbor** **2676**
Ignition and combustion low compression ratio, high output diesel

Period	Obligations	
10/01/77-04/30/79	FY79: $15,271	TOTAL: $100,224
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bolt, J. A.	LERC/Beam, L. W.	46-Mech Engr
Mirsky, W., Sr	LERC/Wintucky, W. T.	

NSG 3165 **University of Michigan - Ann Arbor** **2677**
A study of local parameters affecting emissions from gas turbine engines

Period	Obligations	
11/01/77-11/01/79	FY79:	TOTAL: $70,605
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kauffman, C. W.	LERC/Ercegovic, D. E.	41-Aero Engr

NSG 3192 **University of Michigan - Ann Arbor** **2678**
Morphology of Kevlar fibers

Period	Obligations	
04/10/78-09/08/79	FY79:	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yeh, G. S.	LERC/Lauver, R. W.	47-Materials Engr

NSG 5171 **University of Michigan - Ann Arbor** **2679**
Studies of odd nitrogen in the mesosphere and lower thermosphere

Period	Obligations	
04/01/77-07/31/79	FY79:	TOTAL: $30,817
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rusch, D. W.	GSFC/Stolarski, R. S.	31-Atmos Sci

NSG 5189 **University of Michigan - Ann Arbor** **2680**
Direct measurements of photolysis rates of stratospheric constituents

Period	Obligations	
08/01/77-07/31/80	FY79: $54,077	TOTAL: $150,681
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stedman, D. H.	GSFC/Reed, E. I	31-Atmos Sci

NSG 5206 **University of Michigan - Ann Arbor** **2681**
Measurement of vertical distribution of stars

Period	Obligations	
09/01/77-08/31/78	FY79:	TOTAL: $11,695
Prin Invest	*NASA Tech Officer*	*CASE Category*
Donahue, T. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5232 **University of Michigan - Ann Arbor** **2682**
Search of hot spots at the foot of IO associated flux tube in Jupiter

Period	Obligations	
02/19/78-02/18/79	FY79:	TOTAL: $3,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Atreya, S. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5281 **University of Michigan - Ann Arbor** **2683**
Interactions of precipitating electrons with the ionosphere using characteristic spectral parameters

Period	Obligations	
07/01/78-08/31/80	FY79: $23,000	TOTAL: $47,733
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fontheim, E. G. Ong, R. S.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 5282 **University of Michigan - Ann Arbor** **2684**
Chemical and dynamics processing at high latitudes

Period	Obligations	
07/01/78-09/30/79	FY79:	TOTAL: $22,322
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagy, A. F. Banks, P. M.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 5366 **University of Michigan - Ann Arbor** **2685**
Research of Supernova remnants and nucleosynthesis

Period	Obligations	
05/08/79-05/07/80	FY79: $2,571	TOTAL: $2,571
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kirshner, R. Chevalier, R. A.	GSFC/Boggess, A.	11-Astronomy

NSG 7209 **University of Michigan - Ann Arbor** **2686**
A program of stratospheric research

Period	Obligations	
01/01/76-03/31/80	FY79: $197,054	TOTAL: $594,030
Prin Invest	*NASA Tech Officer*	*CASE Category*
Donahue, Y. M.	HQ-ST/Newton, G. P. HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7308 **University of Michigan - Ann Arbor** **2687**
The physical and chemical properties of the prebiotic atmosphere

Period	Obligations	
02/01/77-01/31/80	FY79: $25,000	TOTAL: $74,106
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kuhn, W. R.	HQ-SB/Young, R. S.	31-Atmos Sci

NSG 7404 **University of Michigan - Ann Arbor** **2688**
A program for research in planetary atmospheres

Period	Obligations	
10/01/77-01/31/80	FY79: $60,000	TOTAL: $118,936
Prin Invest	*NASA Tech Officer*	*CASE Category*
Atreya, S. K.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7452 **University of Michigan - Ann Arbor** **2689**
Bio-chirality search with variable helicity positrons

Period	Obligations	
07/01/78-06/30/80	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rich, A.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7492 **University of Michigan - Ann Arbor** **2690**
Global-solar-terrestrial electrostatic coupling

Period	Obligations	
09/01/78-08/31/79	FY79: $13,200	TOTAL: $13,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hays, P. B.	HQ-ST/Cauffman, D. P. HQ-ST/Schmerling, E. R	31-Atmos Sci

NSG 7587 **University of Michigan - Ann Arbor** **2691**
Neutral mass spectrometry development for a cometary mission

Period	Obligations	
04/01/79-12/31/79	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carignan, G. R	HQ-SL/Murphy, R. E HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7608 **University of Michigan - Ann Arbor** **2692**
An investigation of halos surrounding spiral galaxies

Period	Obligations	
06/01/79-03/31/80	FY79: $15,909	TOTAL: $15,909
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hegyi, D. J.	HQ-SC/Weiler, E. J. HQ-SC/Roman, N. G	11-Astronomy

MICHIGAN (Continued)

NSG 9047 University of Michigan - Ann Arbor 2693
Mammalian gravity receptors: Structure and metabolism
Period: 11/01/76-10/31/79 Obligations: FY79: $46,000 TOTAL: $128,000
Prin Invest: Ross, M. D. NASA Tech Officer: HQ-SB/Halstead, T. W. CASE Category: 51-Biological Sci

NSG 1330 Wayne State University 2694
Analytical modeling of noise source in a moving jet
Period: 08/17/76-09/30/79 Obligations: FY79: $7,437 TOTAL: $29,598
Prin Invest: Chow, P. L. NASA Tech Officer: LARC/Maestrello, L.; LARC/Liu, C. H. CASE Category: 41-Aero Engr

NSG 2008 Wayne State University 2695
Mathematical models of in vivo measurement of human ulnar strength
Period: 02/01/74-09/30/79 Obligations: FY79: TOTAL $75,500
Prin Invest: Orne, D. NASA Tech Officer: ARC/Young, D. R. CASE Category: 56-Medical Sciences

MINNESOTA

NSG 5285 Augsburg College 2696
Analysis of long-term density variations of atomic nitrogen
Period: 07/01/78-09/30/80 Obligations: FY79: $7,750 TOTAL: $26,270
Prin Invest: Engebretson, M. J. NASA Tech Officer: GSFC/Spencer, N. W. CASE Category: 31-Atmos Sci

NAS 2-8812 Univ of Minnesota - Minneapolis-St Paul 2697
Design and development of the bus neutral mass spectrometer
Period: 06/17/75-11/30/79 Obligations: FY79: $18,513 TOTAL: $50,496
Prin Invest: Nier, A. O.; Mauersberger, K. NASA Tech Officer: ARC/Hall, C. F.; ARC/Porter, D. L. CASE Category: 31-Atmos Sci

NAS 5-11310 Univ of Minnesota - Minneapolis-St Paul 2698
Ac electric fields experiment Helios
Period: 06/29/70-08/31/80 Obligations: FY79: $46,167 TOTAL: $1,515,222
Prin Invest: Jee, W. S.; Kimmel, D. B. NASA Tech Officer: GSFC/Gemmell, J. D. CASE Category: 11-Astronomy

NAS 5-11438 Univ of Minnesota - Minneapolis-St Paul 2699
Open source neutral mass spectrometers for AE spacecraft, mission C, D, & E
Period: 06/15/71-09/30/79 Obligations: FY79: $105,269 TOTAL: $1,340,000
Prin Invest: Neir, J. A. NASA Tech Officer: GSFC/Findlay, J. A. CASE Category: 31-Atmos Sci

NAS 5-23703 Univ of Minnesota - Minneapolis-St Paul 2700
ATS-6 environmental measurements experiment data reduction and analysis
Period: 11/15/76-08/31/79 Obligations: FY79: TOTAL $103,335
Prin Invest: Winckler, J. R. NASA Tech Officer: GSFC/Wende, C. D. CASE Category: 31-Atmos Sci

NAS 5-25151 Univ of Minnesota - Minneapolis-St Paul 2701
Interim study report for the plasma wave receivers for the solar polar mission
Period: 08/01/78-09/30/79 Obligations: FY79: $171,300 TOTAL: $206,924
Prin Invest: Kellogg, P. J. NASA Tech Officer: GSFC/Stone, R. G. CASE Category: 11-Astronomy

NAS 5-25389 Univ of Minnesota - Minneapolis-St Paul 2702
Dynamic Explorer A&B magnetometer experiment support
Period: 11/08/78-11/08/80 Obligations: FY79: $8,000 TOTAL: $8,000
Prin Invest: Cahill, L. J., Jr. NASA Tech Officer: GSFC/Sugiura, M. CASE Category: 13-Physics

NAS 5-25753 Univ of Minnesota - Minneapolis-St Paul 2703
Selected hardware for unified radio and plasma wave experiment for international solar polar mission
Period: 07/03/79-09/30/83 Obligations: FY79: $156,700 TOTAL: $156,700
Prin Invest: Kellogg, P. J. NASA Tech Officer: GSFC/Stone, R. G. CASE Category: 11-Astronomy

NAS 8-27977 Univ of Minnesota - Minneapolis-St Paul 2704
Design, development, & operation of Cerenkov portion of the ACR-7 heavy nuclei experiment under the HEAO program
Period: 06/16/72-09/30/80 Obligations: FY79: $93,000 TOTAL: $1,360,000
Prin Invest: Waddington, C. J. NASA Tech Officer: MSFC/Talley, D. CASE Category: 11-Astronomy

NAS 9-12560 Univ of Minnesota - Minneapolis-St Paul 2705
Storage stability & improvement of intermediate moisture foods
Period: 03/23/72-02/28/79 Obligations: FY79: TOTAL: $279,606
Prin Invest: Mitchell, J. R NASA Tech Officer: JSC/Smith, M. C., Jr. CASE Category: 59-Life Sci, NEC

NGL 24-005-009 Univ of Minnesota - Minneapolis-St Paul 2706
Development and application of mass spectrometers to studies of earths upper atmosphere and planetary atmospheres
Period: 08/01/62-06/30/80 Obligations: FY79: $69,226 TOTAL: $1,691,705
Prin Invest: Nier, A. O. NASA Tech Officer: HQ-SL/Murphy, R. E.; HQ-SL/Brunk, W. E. CASE Category: 31-Atmos Sci

NGL 24-005-225 **Univ of Minnesota - Minneapolis-St Paul** **2707**
Lunar sample analysis

Period	*Obligations*	
01/26/71-01/31/80	FY79: $120,669	TOTAL: $836,249

Prin Invest	*NASA Tech Officer*	*CASE Category*
Pepin, R. O.	JSC/Harris, J. W.	13-Physics
Alexander, E. C., Jr.		

NGL 24-005-263 **Univ of Minnesota - Minneapolis-St Paul** **2708**
Study of Minnesota forests and lakes using data from earth resources technology satellites

Period	*Obligations*	
07/06/72-06/30/82	FY79: $165,000	TOTAL: $595,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Shepherd, W. G.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 24-005-050 **Univ of Minnesota - Minneapolis-St Paul** **2709**
Measurement of the gamma ray flux of various celestial point sources from high altitude balloons

Period	*Obligations*	
04/21/65-12/31/79	FY79: $89,621	TOTAL: $948,508

Prin Invest	*NASA Tech Officer*	*CASE Category*
Waddington, C. J.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
Freier, P. S.	HQ-SC/Opp, A. G.	

NGR 24-005-223 **Univ of Minnesota - Minneapolis-St Paul** **2710**
Lunar sample analysis

Period	*Obligations*	
05/22/71-01/31/80	FY79: $20,000	TOTAL: $663,675

Prin Invest	*NASA Tech Officer*	*CASE Category*
Murthy, V. R.	JSC/Harris, J. W.	13-Physics

NSG 1431 **Univ of Minnesota - Minneapolis-St Paul** **2711**
Neutral constituent measurements in the stratosphere

Period	*Obligations*	
07/01/77-09/30/79	FY79	TOTAL: $209,740

Prin Invest	*NASA Tech Officer*	*CASE Category*
Mauersberger, K.	LARC/Beswick, A. G.	31-Atmos Sci

NSG 2014 **Univ of Minnesota - Minneapolis-St Paul** **2712**
Exploratory astrophysics and infrared astronomy

Period	*Obligations*	
02/01/74-03/30/80	FY79: $70,000	TOTAL: $375,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Ney, E.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 3041 **Univ of Minnesota - Minneapolis-St Paul** **2713**
Ion beam sputter etch and deposition study

Period	*Obligations*	
01/01/75-02/29/80	FY79: $35,000	TOTAL: $204,385

Prin Invest	*NASA Tech Officer*	*CASE Category*
Wehner, G. K.	LERC/Sovey, J. S.	13-Physics

NSG 3094 **Univ of Minnesota - Minneapolis-St Paul** **2714**
Investigations of negative and positive cesium ion species

Period	*Obligations*	
02/01/76-10/31/78	FY79:	TOTAL: $92,350

Prin Invest	*NASA Tech Officer*	*CASE Category*
Chanin, L. M.	LERC/Morris, J. F.	19-Phys Sci, NEC

NSG 5088 **Univ of Minnesota - Minneapolis-St Paul** **2715**
Magnetospheric physics phenomena using sounding rockets

Period	*Obligations*	
11/01/75-12/31/80	FY79: $240,000	TOTAL: $539,593

Prin Invest	*NASA Tech Officer*	*CASE Category*
Winckler, J. R.	GSFC/Bissell, R. E.	13-Physics
	HQ-ST/Cauffman, D. P.	

NSG 5237 **Univ of Minnesota - Minneapolis-St Paul** **2716**
Investigation of interstellar carbon

Period	*Obligations*	
03/01/78-02/28/79	FY79	TOTAL: $7,469

Prin Invest	*NASA Tech Officer*	*CASE Category*
Black, J. H.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5373 **Univ of Minnesota - Minneapolis-St Paul** **2717**
Experiments employing a rocket-borne electron accelerator

Period	*Obligations*	
06/15/79-06/14/80	FY79: $27,800	TOTAL: $27,800

Prin Invest	*NASA Tech Officer*	*CASE Category*
Kellogg, P. J.	GSFC/Bissell, R. E.	13-Physics
Bernstein, W.	HQ-ST/Cauffman, D. P.	

NSG 5397 **Univ of Minnesota - Minneapolis-St Paul** **2718**
Observations of emission lines in the Crab nebula

Period	*Obligations*	
08/01/79-07/31/80	FY79: $2,020	TOTAL: $2,020

Prin Invest	*NASA Tech Officer*	*CASE Category*
Davidson, K.	GSFC/Boggess, A.	11-Astronomy
Gull, T. R.		

NSG 6005 **Univ of Minnesota - Minneapolis-St Paul** **2719**
Investigations of electrical currents in the auroral ionosphere

Period	*Obligations*	
10/01/75-12/31/78	FY79:	TOTAL: $194,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnoldy, R. J.	WFC/Ballance, C. W., Jr.	
Cahill, L. J., Jr.	WFC/Gray, J. W.	19-Phys Sci, NEC

NSG 6009 **Univ of Minnesota - Minneapolis-St Paul** **2720**
Study of neutral composition of upper atmosphere with rocket-borne mass spectrometers

Period	*Obligations*	
07/01/75-12/31/79	FY79:	TOTAL: $126,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Nier, A. O.	WFC/Gray, J. W.	19 Phys Sci, NEC

MINNESOTA (Continued)

NSG 6021 **Univ of Minnesota - Minneapolis-St Paul** **2721**
Rocket study of auroral processes

Period	Obligations	
06/01/78-12/31/79	FY79:	TOTAL: $101,398
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cahill, L. J., Jr.	WFC/Gray, J. W. WFC/Pless, R. H	19-Phys Sci, NEC

NSG 7005 **Univ of Minnesota - Minneapolis-St Paul** **2722**
Energetic particles in the magnetosphere and space

Period	Obligations	
07/01/73-09/30/80	FY79:	TOTAL: $837,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Winckler, J. R.	HQ-ST/King, J. H. HQ-ST/Schmerling, E. R.	39-Env Sci, NEC

NSG 7108 **Univ of Minnesota - Minneapolis-St Paul** **2723**
Research of waves and fields in plasma

Period	Obligations	
12/01/74-06/30/78	FY79:	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kellogg, P. J	HQ-ST/Taylor, W. H.	19-Phys Sci, NEC

NSG 7221 **Univ of Minnesota - Minneapolis-St Paul** **2724**
Neutral constituent measurements in stratosphere

Period	Obligations	
03/16/76-09/30/79	FY79:	TOTAL: $88,243
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mauersberger, K. Nier, A. O.	HQ-EB/Seals, R. K., Jr HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7237 **Univ of Minnesota - Minneapolis-St Paul** **2725**
Interpretation of data obtained with the Explorer 45 spacecraft: Major objective is understanding of magnetic storms

Period	Obligations	
06/01/76-03/31/80	FY79:	TOTAL: $72,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cahill, L. J., Jr.	HQ-ST/Cauffman, D. P HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NSG 7296 **Univ of Minnesota - Minneapolis-St Paul** **2726**
Triaxial drop shapes rotating and charged liquid drops

Period	Obligations	
12/15/76-12/15/79	FY79: $34,722	TOTAL: $95,310
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scriven, L. E.	HQ-RS/Lundholm, J. G., Jr. JPL/Saffren, M. M.	13-Physics

NSG 7575 **Univ of Minnesota - Minneapolis-St Paul** **2727**
Cometary mass spectrometry

Period	Obligations	
04/01/79-03/31/80	FY79: $70,864	TOTAL: $70,864
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nier, A. O.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 9050 **Univ of Minnesota - Minneapolis-St Paul** **2728**
Petrologic study of returned lunar samples

Period	Obligations	
02/01/77-01/31/80	FY79:	TOTAL: $51,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weiblen, P. W.	JSC/Harris, J. W.	32-Geological Sci

MISSISSIPPI

NGR 25-012-001 **Alcorn State University** **2729**
Radio tracking of geostationary satellites

Period	Obligations	
09/01/73-06/30/80	FY79: $30,047	TOTAL: $214,285
Prin Invest	*NASA Tech Officer*	*CASE Category*
Paul, M. P.	GSFC/Grebowsky, J	31-Atmos Sci

NSG 8036 **Alcorn State University** **2730**
Bio-gas production from alligator weeds

Period	Obligations	
06/01/76-08/31/80	FY79: $23,052	TOTAL: $88,213
Prin Invest	*NASA Tech Officer*	*CASE Category*
Latif, A.	NSTL/Wolverton, B.C.	51-Biological Sci

NSG 736 **Jackson State University** **2731**
LANDSAT study of urban land use Jackson, MS

Period	Obligations	
08/13/79-08/12/80	FY79: $93,684	TOTAL: $93,684
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lang, M.	NSTL/Atwell, B. H	32-Geological Sci

NSG 8026 **Jackson State University** **2732**
Aquatic plants as filtration systems for chlorinated hydrocarbons

Period	Obligations	
06/01/75-05/31/80	FY79: $59,617	TOTAL: $162,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Garrity, E.	NSTL/Wolverton, B. C. NSTL/Estess, R	39-Env Sci, NEC

NAS 8-26749 **Mississippi State University** **2733**
A study of trends and techniques for space base electronics

Period	Obligations	
01/12/71-06/10/79	FY79:	TOTAL: $200,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Trotter, D	MSFC/Hollis, B. R., Jr MSFC/Routh, D. E.	13-Physics

NAS 8-31373 **Mississippi State University** **2734**
Study of digital holographic filter generation

Period	Obligations	
03/20/75-12/31/78	FY79:	TOTAL: $28,024
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ingels, F. M.	MSFC/Wallace, G. R. MSFC/McDonough, G. F.	45-Elec Engr

NAS 8-32810 **Mississippi State University** **2735**
Development of a computerized algorithm for establishing harmonic balance

Period	Obligations	
01/01/78-05/31/79	FY79:	TOTAL: $30,031
Prin Invest	**NASA Tech Officer**	**CASE Category**
Mitchell, J. R.	MSFC/Darden, J. H.	
Barror, O. L.	MSFC/Mink, H. J.	22-Computer Science

NAS 8-32912 **Mississippi State University** **2736**
Development of a computer program to compute the flow field, aerodynamic forces and heating rate of arbitrary shaped bodies

Period	Obligations	
05/25/78-05/24/80	FY79: $20,000	TOTAL: $68,787
Prin Invest	**NASA Tech Officer**	**CASE Category**
Kassner, J. L., Jr.	MSFC/Sims, J. L.	49-Engr, NEC
	MSFC/Donehoo, L. K.	

NAS 8-33448 **Mississippi State University** **2737**
High density circuits technology

Period	Obligations	
07/13/79-07/12/80	FY79: $35,810	TOTAL: $35,810
Prin Invest	**NASA Tech Officer**	**CASE Category**
Wade, T. E.	MSFC/Hollis, B. R., Jr.	45-Elec Engr

NAS 8-33450 **Mississippi State University** **2738**
Electron lithography star design guidelines

Period	Obligations	
08/02/79-06/01/80	FY79: $25,069	TOTAL: $25,069
Prin Invest	**NASA Tech Officer**	**CASE Category**
Causey, W. H., Jr.	MSFC/Edge, T. M.	45-Elec Engr

NAS 8-33570 **Mississippi State University** **2739**
Research study: Analysis of space telescope collection systems

Period	Obligations	
07/26/79-09/25/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Ingels, F. M.	MSFC/Atherton, J. R.	11-Astronomy
	MSFC/Thomas, J. H.	

NCA 8-131 **Mississippi State University** **2740**
Design of mechanism for referencing rear drum of long wall shearer

Period	Obligations	
01/11/78-07/10/78	FY79	TOTAL: $4,800
Prin Invest	**NASA Tech Officer**	**CASE Category**
Jones, E. W.	MSFC/Broussard, P. H.	46-Mech Engr
	MSFC/Kent, M. I.	

NGL 25-001-054 **Mississippi State University** **2741**
Application of remotely sensed data to state and regional problems

Period	Obligations	
11/01/73-10/31/80	FY79: $200,000	TOTAL: $800,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Miller, W. F.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 25-001-055 **Mississippi State University** **2742**
Numerical solution of the Navier-Stokes equations for arbitrary two-dimensional multi-element airfoils

Period	Obligations	
01/01/74-02/29/80	FY79: $36,800	TOTAL: $182,262
Prin Invest	**NASA Tech Officer**	**CASE Category**
Thompson, J. F.	LARC/South, J. C., Jr.	41-Aero Engr

NSG 1083 **Mississippi State University** **2743**
An exploratory investigation of the cooling drag associated with general aviation propulsive systems

Period	Obligations	
09/01/74-02/29/80	FY79: $69,300	TOTAL: $295,259
Prin Invest	**NASA Tech Officer**	**CASE Category**
Rogerson, A. C.	LARC/Hall, A. W.	41-Aero Engr
Brown, N. B., Jr.		

NSG 1249 **Mississippi State University** **2744**
Flight test of a wing stall sensor and evaluation of its application to an aircraft stall deterrent system

Period	Obligations	
09/15/75-12/31/79	FY79: $41,401	TOTAL: $199,165
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bennett, A. G., Jr	LARC/Stewart, E. C.	41-Aero Engr
Owens, J. K.		

NSG 1402 **Mississippi State University** **2745**
Propeller propulsion integration

Period	Obligations	
04/01/77-03/31/80	FY79: $30,000	TOTAL: $116,662
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bennett, A. G., Jr.	LARC/Hassell, J. L., Jr.	41-Aero Engr
Miley, S. J	LARC/Johnson, J. L.	

NSG 1454 **Mississippi State University** **2746**
Investigation of a flight test method for determining airplane drag utilizing a propeller wake survey rake

Period	Obligations	
09/01/77-11/30/79	FY79: $5,011	TOTAL: $18,633
Prin Invest	**NASA Tech Officer**	**CASE Category**
Bennett, A. G., Jr.	LARC/Judd, J. H.	41-Aero Engr
Miley, S. J.		

NSG 1511 **Mississippi State University** **2747**
Full scale flow visualization for agricultural aircraft

Period	Obligations	
04/01/78-06/30/79	FY79:	TOTAL: $30,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Cross, E. J	LARC/Holmes, B. J.	41-Aero Engr

NSG 1577 **Mississippi State University** **2748**
Transformation of two and three-dimensional regions by elliptic systems

Period	Obligations	
11/15/78-11/14/79	FY79: $20,580	TOTAL: $20,580
Prin Invest	**NASA Tech Officer**	**CASE Category**
Thompson, J. F.	LARC/Smith, R. E.	21-Mathematics
Mastin, C. W.	LARC/Shoosmith, J. N.	

MISSISSIPPI (Continued)

NSG 1623 **Mississippi State University** **2749**
Theoretical investigation of high-lift aerodynamics

Period	Obligations	
08/20/79-08/19/80	FY79: $52,100	TOTAL: $52,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bennett, A. G., Jr.	LARC/Thomas, J. L.	41-Aero Engr

NSG 1539 **Mississippi University For Women** **2750**
Polyimide monomers and intermediates

Period	Obligations	
06/15/78-10/31/79	FY79: $18,657	TOTAL: $25,565
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pratt, J. R.	LARC/StClair, T. L. LARC/Johnston, N. J.	12-Chemistry

NAS13-81 **University of Southern Mississippi** **2751**
Evaluate the nutritional value of 'single cell protein' using water hyacinth extracts as subrate study

Period	Obligations	
03/20/78-09/19/79	FY79:	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stocks, P. K.	NSTL/Wolverton, B. C.	39-Env Sci, NEC

NAS13-95 **University of Southern Mississippi** **2752**
Demonstration and evaluation of EMS telemetry cability in remote areas using synchronous satellite communications technology

Period	Obligations	
07/17/78-12/31/80	FY79: $156,371	TOTAL: $176,236
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brundage, W. G.	NSTL/Hegwood, R. B.	49-Engr, NEC

NSG 1515 **University of Southern Mississippi** **2753**
Deconvolution of gas chromatographic data

Period	Obligations	
04/01/78-09/30/79	FY79:	TOTAL: $4,689
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rayborn, G. H. Hughes, W. E.	LARC/Wood, G. M.	19-Phys Sci, NEC

MISSOURI

NAS 8-32838 **Saint Louis University** **2754**
Study of local storm convection

Period	Obligations	
03/20/78-04/19/79	FY79:	TOTAL: $19,997
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fuelberg, H. E.	MSFC/Hill, C. K. MSFC/Turner, R. E.	31-Atmos Sci

NAS 8-33370 **Saint Louis University** **2755**
Kinetic energy budgets in areas of intense convections

Period	Obligations	
04/01/79-03/31/80	FY79: $24,665	TOTAL: $24,665
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fuelberg, H. E.	MSFC/Hill, C. K. MSFC/Thomas, P. E.	31-Atmos Sci

NAS 8-31150 **University of Missouri - Columbia** **2756**
Research study of microphysical processes in atmospheric clouds

Period	Obligations	
02/11/75-08/31/80	FY79:	TOTAL: $116,488
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tung, C. Hale, B. N.	MSFC/Smith, R. E. MSFC/Anderson, B. J.	31-Atmos Sci

NAS 8-31849 **University of Missouri - Columbia** **2757**
Cloud physics laboratory science simulator

Period	Obligations	
04/29/76-11/14/80	FY79: $10,000	TOTAL: $279,958
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kassner, J. L., Jr.	MSFC/Smith, R. E. MSFC/Thomas, P. E.	31-Atmos Sci

NAS 9-15477 **University of Missouri - Columbia** **2758**
Development and verification of simulation models for analyzing orbiter digital communications and data links

Period	Obligations	
01/01/78-12/31/79	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tranter, W. H.	JSC/Eggleston, T. W.	45-Elec Engr

NAS 9-15896 **University of Missouri - Columbia** **2759**
Earth resources synthetic aperture radar applications development working group

Period	Obligations	
09/17/79-08/31/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, J. W., Jr.	JSC/Harnage, M. J.	39-Env Sci, NEC

NCA 2-450802 **University of Missouri - Columbia** **2760**
Investigation of nucleate boiling in normal and reduced gravity environments

Period	Obligations	
07/01/78-12/31/79	FY79: $7,052	TOTAL: $16,507
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miles, J. B.	ARC/Webbon, B. W.	46-Mech Engr

NSG 1540 **University of Missouri - Columbia** **2761**
Study of stochastic processes occurring in the reliability analysis of fault-tolerant avionics computing systems

Period	Obligations	
08/15/78-07/31/79	FY79:	TOTAL: $17,928
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, D. R.	LARC/Migneault, G. E. LARC/Lupton, A. O.	22-Computer Science

NSG 2193 **University of Missouri - Columbia** **2762**
Electrochemical carbon oxide concentration using molten-salt electrolytes

Period	Obligations	
11/01/76-10/30/79	FY79: $39,035	TOTAL: $86,035
Prin Invest	*NASA Tech Officer*	*CASE Category*
Winnick, J.	ARC/Quattrone, P. D.	59-Life Sci, NEC

NSG 5338 **University of Missouri - Columbia** **2763**
Research of optimum radiometer parameters for soil moisture monitoring

Period	Obligations	
04/01/79-03/31/80	FY79: $29,484	TOTAL: $29,484
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, J. W., Jr.	GSFC/Schmugge, T. J.	39-Env Sci, NEC

NAS 8-32976 **University of Missouri - Rolla** **2764**
Monodisperse cloud experiment

Period	Obligations	
04/03/78-12/31/81	FY79: $25,000	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hagen, D. E.	MSFC/Fallon, R. A.	31-Atmos Sci
Kassner, J. L., Jr.	MSFC/Smith, R. E.	
White, D. R.		

NAS 9-14848 **University of Missouri - Rolla** **2765**
Development and verification of simulation models for analyzing orbiter digital communication and data links, and onboard monitoring parameter correlations

Period	Obligations	
01/01/76-11/30/77	FY79:	TOTAL: $28,892
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tranter, W. H.	JSC/Dawson, C. T.	45-Elec Engr

NCA 2-450801 **University of Missouri - Rolla** **2766**
Prediction of buffet response of 1/6 scale models of F-111 tactical wings

Period	Obligations	
10/01/77-12/31/79	FY79:	TOTAL: $8,982
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cronin, D. L.	ARC/Coe, C. F.	41-Aero Engr

NSG 1369 **University of Missouri - Rolla** **2767**
Transport properties in the atmosphere of Jupiter

Period	Obligations	
01/01/77-12/31/79	FY79: $15,063	TOTAL: $32,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biolsi, L.	LARC/Graves, R. A., Jr.	12-Chemistry
	LARC/Jones, J. J.	

NSG 1452 **University of Missouri - Rolla** **2768**
Study of gas-solid airflow over a flat plate

Period	Obligations	
10/01/77-11/30/79	FY79: $62,219	TOTAL: $132,449
Prin Invest	*NASA Tech Officer*	*CASE Category*
Patterson, G. K.	LARC/Hefner, J. N.	41-Aero Engr
Oetting, R. B.	LARC/Bushnell, D. M.	

NSG 2375 **University of Missouri - Rolla** **2769**
Aerodynamic-structural investigation of dual bladed rotor systems

Period	Obligations	
03/01/79-10/31/79	FY79: $22,491	TOTAL: $22,491
Prin Invest	*NASA Tech Officer*	*CASE Category*
Selberg, B. P.	ARC/Shockey, G. A.	41-Aero Engr
Cronin, D. L.		

NSG 3113 **University of Missouri - Rolla** **2770**
Theoretical study of starved elastohydrodynamic lubrication of line contacts with a detailed treatment of inlet and exit flow regions

Period	Obligations	
07/01/76-12/30/78	FY79:	TOTAL: $29,234
Prin Invest	*NASA Tech Officer*	*CASE Category*
Medrow, R. A.	LERC/Wedeven, L. D.	46-Mech Engr

NSG 3199 **University of Missouri - Rolla** **2771**
Nucleate boiling from ion-beam textured surfaces coated with plasma deposited polymers

Period	Obligations	
06/15/78-09/16/79	FY79	TOTAL: $15,366
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yasuda, H. K.	LERC/Weigand, A. J	19-Phys Sci, NEC
Park, E. L.	LERC/Banks, B. A	

NSG 3231 **University of Missouri - Rolla** **2772**
Transmission of sound in high speed flows

Period	Obligations	
01/01/79-12/31/79	FY79: $26,645	TOTAL: $26,645
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eversman, W.	LERC/Rice, E. J.	41-Aero Engr
	LERC/Baumeister, K. J.	

NSG 8055 **University of Missouri - Rolla** **2773**
Coal interface detection

Period	Obligations	
09/01/77-09/30/78	FY79:	TOTAL: $21,395
Prin Invest	*NASA Tech Officer*	*CASE Category*
Summers, D. A.	MSFC/Geller, G.	47-Materials Engr
Barker, C. R.		

NSG 5151 **University of Missouri - Saint Louis** **2774**
Observations of ultraviolet emission lines in gaseous nebulae

Period	Obligations	
01/01/77-12/31/78	FY79:	TOTAL: $873
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schwartz, R. D.	GSFC/Kupperian, J. E., Jr	11-Astronomy

NSG 5400 **University of Missouri - Saint Louis** **2775**
Research of mass loss in the ultraviolet spectrum

Period	Obligations	
07/09/79-07/08/80	FY79: $11,700	TOTAL: $11,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lamb, S. A.	GSFC/Boggess, A.	11-Astronomy
Sargent, W. L.		

NSG 7563 **University of Missouri - Saint Louis** **2776**
Condensate phenomena in the polar regions of Mars

Period	Obligations	
03/01/79-09/30/79	FY79: $12,595	TOTAL: $12,595
Prin Invest	NASA Tech Officer	CASE Category
James, P. B.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/Dwornik, S. E.	

NAS 1-13889 **Washington University** **2777**
Viking/Lander imaging studies

Period	Obligations	
05/05/75-09/30/78	FY79:	TOTAL: $191,748
Prin Invest	NASA Tech Officer	CASE Category
Arvidson, R. E.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 2-10177 **Washington University** **2778**
Bone growth in the rat mandible during spaceflight

Period	Obligations	
02/12/79-08/10/80	FY79: $92,957	TOTAL: $92,957
Prin Invest	NASA Tech Officer	CASE Category
Simmons, D.	ARC/Souza, K. A.	51-Biological Sci
	ARC/Holton, E. M.	

NAS 8-27976 **Washington University** **2779**
Design, development and operation of a heavy nuclei experiment under the HEAO program

Period	Obligations	
06/16/72-09/30/80	FY79: $136,000	TOTAL: $576,754
Prin Invest	NASA Tech Officer	CASE Category
Barcus, J.	MSFC/Talley, D	11-Astronomy
Sutton, J.		

NAS 8-32354 **Washington University** **2780**
Data base management applications

Period	Obligations	
01/19/77-05/19/78	FY79: $2,103	TOTAL: $102,103
Prin Invest	NASA Tech Officer	CASE Category
Eastwood, L	MSFC/Daniels, J. L., Jr.	39-Env Sci, NEC
	MSFC/Wallace, G. R.	

NGL 26-008-065 **Washington University** **2781**
Lunar sample analysis

Period	Obligations	
02/01/71-01/31/81	FY79: $79,621	TOTAL: $2,541,902
Prin Invest	NASA Tech Officer	CASE Category
Walker, R. M.	JSC/Harris, J. W.	13-Physics

NGR 26-008-001 **Washington University** **2782**
Determination of characteristics of high altitude primary cosmic radiation at low latitudes

Period	Obligations	
09/01/61-10/31/79	FY79: $139,000	TOTAL: $1,665,540
Prin Invest	NASA Tech Officer	CASE Category
Israel, M. H.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
Klarmann, J.	HQ-SC/Opp, A. G.	

NSG 1601 **Washington University** **2783**
Non-destructive evaluation of composite structures using Fourier analysis of ultrasonic signals

Period	Obligations	
03/15/79-03/14/80	FY79: $49,815	TOTAL: $49,815
Prin Invest	NASA Tech Officer	CASE Category
Miller, J. G.	LARC/Heyman, J. S.	13-Physics
O'Donnell, M.	LARC/Cantrell, J. H., Jr.	

NSG 1640 **Washington University** **2784**
Application of adaptive finite element analysis of integrated design and analysis of aircraft structures

Period	Obligations	
10/01/79-09/30/80	FY79: $95,012	TOTAL: $95,012
Prin Invest	NASA Tech Officer	CASE Category
Szabo, B. A.	LARC/Giles, G. L.	49-Engr, NEC
	LARC/Rogers, J. L.	

NSG 5187 **Washington University** **2785**
Copernicus observations for determinations of abundance of ratios

Period	Obligations	
07/01/77-06/30/78	FY79:	TOTAL: $6,159
Prin Invest	NASA Tech Officer	CASE Category
Smith, W. H.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7016 **Washington University** **2786**
Lunar data analysis and synthesis program on lunar surface dynamics

Period	Obligations	
12/01/73-01/31/80	FY79: $85,285	TOTAL: $496,156
Prin Invest	NASA Tech Officer	CASE Category
Hohenberg, C. M.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7087 **Washington University** **2787**
Computerized analysis of Martian crater and aeolian feature data

Period	Obligations	
08/01/74-12/31/79	FY79: $89,276	TOTAL: $228,156
Prin Invest	NASA Tech Officer	CASE Category
Arvidson, R. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7334 **Washington University** **2788**
Planetary observations using a new Fabry-Perot interferometric method

Period	Obligations	
04/01/77-03/31/80	FY79: $90,000	TOTAL: $236,588
Prin Invest	NASA Tech Officer	CASE Category
Smith, W. H.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

MISSOURI (Continued)

NSG 7372 **Washington University** 2789
Interferometric spectral observations of the interstellar medium in the near ultraviolet

Period	Obligations	
07/01/77-06/30/80	FY79: $32,812	TOTAL: $85,574
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, W. H.	HQ-SC/Weiler, E. J. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7545 **Washington University** 2790
Multispectral, topographic, and photogeologic studies of aeolian phenomena on Mars

Period	Obligations	
03/01/79-10/31/79	FY79: $44,954	TOTAL: $44,954
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arvidson, R. E.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7578 **Washington University** 2791
Evolution of Mars

Period	Obligations	
03/01/79-02/28/80	FY79: $37,724	TOTAL: $37,724
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goettal, K. A.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 9055 **Washington University** 2792
Chemical studies of materials and processes in the lunar regolith and of lunar and terrestrial igneous differentiation

Period	Obligations	
02/01/77-01/31/81	FY79:	TOTAL: $373,495
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haskin, L. A. Blanchard, D. P.	JSC/Harris, J. W	32-Geological Sci

NSG 9073 **Washington University** 2793
Electrochemical separations for obtaining metals and oxygen from lunar samples

Period	Obligations	
09/01/78-08/31/79	FY79:	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haskin, L. A. Lindstrom, D. J.	JSC/Williams, R.	19-Phys Sci, NEC

MONTANA

NGR 27-001-040 **Montana State University** 2794
Establishment of a mission-oriented gravitation research center

Period	Obligations	
06/28/71-08/31/79	FY79:	TOTAL: $163,312
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nordtvedt, K., Jr.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 8061 **Montana State University** 2795
Beta decay clock experiment

Period	Obligations	
06/15/78-12/14/78	FY79:	TOTAL: $3,442
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nordtvedt, K.	MSFC/Eby, P. B.	13-Physics

NAS 5-23891 **University of Montana** 2796
Data analysis and computer mapping

Period	Obligations	
02/24/77-09/30/79	FY79: $2,602	TOTAL: $25,102
Prin Invest	*NASA Tech Officer*	*CASE Category*
Craighead, J. J.	GSFC/Oseroff, H.	39-Env Sci, NEC

NEBRASKA

NGL 28-004-020 **University of Nebraska - Lincoln** 2797
Applications of remote sensing in resource management in Nebraska

Period	Obligations	
04/20/72-04/30/82	FY79: $100,000	TOTAL: $775,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carlson, M. P.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 28-004-021 **University of Nebraska - Lincoln** 2798
Interaction of radiation with planetary gases

Period	Obligations	
02/23/73-01/31/80	FY79:	TOTAL: $309,731
Prin Invest	*NASA Tech Officer*	*CASE Category*
Samson, J. A.	HQ-SL/Fellows, R. F HQ-SL/Brunk, W. E	31-Atmos Sci

NSG 1506 **University of Nebraska - Lincoln** 2799
Load deflection characteristics of inflatable structures

Period	Obligations	
03/15/78-11/14/78	FY79:	TOTAL: $5,327
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baumgarten, J. R.	LARC/Tanner, J. A	46-Mech Engr

NSG 5332 **University of Nebraska - Lincoln** 2800
Research of chromospheres of classical Cepheids

Period	Obligations	
02/01/79-01/31/81	FY79: $1,500	TOTAL: $1,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmidt, E. G.	GSFC/Kupperian, J. E., Jr	11-Astronomy

NSG 5391 **University of Nebraska - Lincoln** 2801
Ultraviolet spectrophotometry of Cepheids

Period	Obligations	
07/01/79-06/30/80	FY79: $11,800	TOTAL: $11,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmidt, E. G Weiler, E. J.	GSFC/Boggess, A.	11-Astronomy

NEVADA

NAS 8-31470 **Univ. of Nevada - Desert Res. Inst.** **2802**
Study of zero-gravity atmospheric cloud physics lab chamber development

Period	Obligations	
05/13/75-06/30/78	FY79:	TOTAL: $108,782
Prin Invest	*NASA Tech Officer*	*CASE Category*
Squires, P.	MSFC/Smith, R. E.	31-Atmos Sci
	MSFC/Schrick, B. J.	

NAS 8-32975 **Univ. of Nevada - Desert Res. Inst.** **2803**
Atmospheric cloud physics laboratory cloud forming experiment for the first (ACPL) mission

Period	Obligations	
03/01/78-12/31/81	FY79: $120,000	TOTAL: $268,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Fallon, R. A.	31-Atmos Sci
Squires, P.	MSFC/Smith, R. E.	

NAS 8-32977 **Univ. of Nevada - Desert Res. Inst.** **2804**
Atmospheric cloud physics laboratory ice crystal growth experiment for mission I

Period	Obligations	
03/01/78-12/31/81	FY79: $40,000	TOTAL: $65,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hallett, J.	MSFC/Fallon, R. A.	31-Atmos Sci
	MSFC/Smith, R. E.	

NAS 8-33273 **Univ. of Nevada - Desert Res. Inst.** **2805**
Complex aerosol nucleation experiment ACPL-2

Period	Obligations	
02/16/79-02/16/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Fallon, R. A.	31-Atmos Sci
	MSFC/Smith, R. E.	

NAS 8-33295 **Univ. of Nevada - Desert Res. Inst.** **2806**
Design, fabricate, test and deliver one static diffusion chamber

Period	Obligations	
07/[illegible]/79-11/07/79	FY79: $35,535	TOTAL: $35,535
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hallett, J.	MSFC/Anderson, B. J.	31-Atmos Sci
	MSFC/Keller, V.	

NCC 2-6 **Univ of Nevada - Desert Res Inst.** **2807**
Proposal to participate in the testing and evaluation of a total viral monitoring instrument

Period	Obligations	
04/01/79-12/31/79	FY79: $28,337	TOTAL: $28,337
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hall, M. R.	ARC/Johnson, R. D.	59-Life Sci, NEC
Whitcomb, B. M.	ARC/Dalton, B. P.	
Koch, D. L.		

NSG 2140 **University of Nevada - Las Vegas** **2808**
Prediction of unsteady airloads in two-dimensional subsonic compressible flow

Period	Obligations	
06/01/76-05/31/80	FY79: $31,023	TOTAL: $102,460
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fromme, J. A.	ARC/Davis, S. S.	41-Aero Engr
Goldberg, M. A.		

NAS 8-31441 **University of Nevada - Reno** **2809**
Zero-8 cloud drop coalescence experiment

Period	Obligations	
04/21/75-10/31/78	FY79	TOTAL $144,149
Prin Invest	*NASA Tech Officer*	*CASE Category*
Telford, J. W.	MSFC/Smith, R. E.	19-Phys Sci, NEC
	MSFC/Anderson, B. J.	

NAS 8-32313 **University of Nevada - Reno** **2810**
Study to perform preliminary experiments to evaluate particle generation and characterization techniques for zero gravity cloud physics experiments

Period	Obligations	
12/13/76-11/30/79	FY79:	TOTAL: $150,447
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kocmond, W. C.	MSFC/Schrick, B. J.	31-Atmos Sci
	MSFC/Smith, R. E.	

NSG 2291 **University of Nevada - Reno** **2811**
Computations and turbulent flow modeling in support of helicopter rotor technology

Period	Obligations	
12/01/77-11/30/79	FY79: $39,128	TOTAL: $75,454
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rose, W. C.	ARC/Presley, L. L.	41-Aero Engr
Kleppe, J. A.	ARC/Murphy, J. D.	

NSG 2395 **University of Nevada - Reno** **2812**
Investigation of solid state deposition technology applied to aerodynamic instrumentation

Period	Obligations	
05/20/79-08/20/79	FY79: $32,770	TOTAL: $32,770
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rose, W. C.	ARC/Johnson, D. A.	41-Aero Engr
Johnson, B. P.		
Kleppe, J. A.		

NEW HAMPSHIRE

NSG 2397 **Dartmouth College** **2813**
Optical constants of transition metals

Period	Obligations	
07/01/79-06/03/80	FY79: $40,665	TOTAL: $40,665
Prin Invest	*NASA Tech Officer*	*CASE Category*
Christy, R. W.	ARC/Cooper, D. M.	13-Physics

NSG 3253 **Dartmouth College** **2814**
Thermomechanical effects in high speed seal rubs

Period	Obligations	
02/26/79-02/26/80	FY79 $28,500	TOTAL: $28,500

Prin Invest	NASA Tech Officer	CASE Category
Kennedy, F. E., Jr	LERC/Bill, R. C. LERC/Ludwig, L. P.	47-Materials Engr

NSG 5014 **Dartmouth College** **2815**
Geological applications of ERTS data

Period	Obligations	
07/01/74-12/31/79	FY79: $135,000	TOTAL: $1,019,605

Prin Invest	NASA Tech Officer	CASE Category
Stoiber, R. E. Birnie, R. W.	GSFC/Ongar, S. G.	39-Env Sci, NEC

NSG 5145 **Dartmouth College** **2816**
Investigation of volcanic gases and dust (aerosols) in the stratosphere

Period	Obligations	
12/01/76-01/31/80	FY79: $40,000	TOTAL: $120,291

Prin Invest	NASA Tech Officer	CASE Category
Self, S. Decker, R. W.	GSFC/Hansen, J. E.	31-Atmos Sci

NSG 5348 **Dartmouth College** **2817**
Magnetopause studies using satellite data

Period	Obligations	
05/01/79-04/31/80	FY79: $30,416	TOTAL: $30,416

Prin Invest	NASA Tech Officer	CASE Category
Sonnerup, B. U.	GSFC/Kupperian, J E., Jr.	32-Geological Sci

NSG 7292 **Dartmouth College** **2818**
Magnetopause-structure from satellite observations

Period	Obligations	
10/01/76-09/30/79	FY79:	TOTAL: $40,000

Prin Invest	NASA Tech Officer	CASE Category
Sonnerup, B. U.	HQ-ST/King, J. H. HQ-ST/Schmerling, E. R.	39-Env Sci, NEC

NAS 5-23761 **University of New Hampshire** **2819**
Hardware phase of the solar gamma ray experiment for the solar maximum mission

Period	Obligations	
10/01/76-09/30/81	FY79: $435,125	TOTAL: $3,196,726

Prin Invest	NASA Tech Officer	CASE Category
Chupp, E. L.	GSFC/Donley, J. L.	31-Atmos Sci

NAS 5-24328 **University of New Hampshire** **2820**
Data reduction and analysis of the environmental measurement experiment

Period	Obligations	
12/01/77-09/30/79	FY79: $22,500	TOTAL: $67,500

Prin Invest	NASA Tech Officer	CASE Category
Arnoldy, R. L.	GSFC/Wende, C. D.	19-Phys Sci, NEC

NAS 5-24354 **University of New Hampshire** **2821**
Analysis and interpretation of Pioneer 10 and 11 data

Period	Obligations	
10/16/77-10/15/79	FY79: $23,998	TOTAL: $46,248

Prin Invest	NASA Tech Officer	CASE Category
Webber, W. R.	GSFC/Trainor, J. H.	13-Physics

NAS 5-25420 **University of New Hampshire** **2822**
Design and develop a compton telescope for the Gamma Ray Observatory (GRO) mission

Period	Obligations	
10/25/78-10/31/79	FY79: $66,200	TOTAL: $66,200

Prin Invest	NASA Tech Officer	CASE Category
Lockwood, J. A.	GSFC Davis, M. A.	11-Astronomy

NAS 5-25642 **University of New Hampshire** **2823**
Cosmic ray experiment data analysis and interpretation

Period	Obligations	
04/03/79-05/02/80	FY79: $8,000	TOTAL $8,000

Prin Invest	NASA Tech Officer	CASE Category
Fisk, L. A.	GSFC/VonRosenvinge, T. T	13-Physics

NCA 2-512901 **University of New Hampshire** **2824**
Development of mathematical models of specific closed ecosystem functions

Period	Obligations	
02/01/79-01/31/81	FY79: $21,991	TOTAL $21,991

Prin Invest	NASA Tech Officer	CASE Category
Moore, B.	ARC/MacElroy, R. D.	21-Mathematics

NGL 30-002-018 **University of New Hampshire** **2825**
Investigation of energy levels in foil excited atomic beams

Period	Obligations	
03/15/65-09/30/78	FY79	TOTAL. $207,354

Prin Invest	NASA Tech Officer	CASE Category
Chupp, E. L.	HQ-ST/Bohlin, J. D.	13-Physics

NGL 30-002-021 **University of New Hampshire** **2826**
Investigation and development of techniques for solar neutron and gamma ray detection

Period	Obligations	
02/28/66-01/31/80	FY79: $125,000	TOTAL. $1,327,365

Prin Invest	NASA Tech Officer	CASE Category
Chupp, E. L.	HQ-SC/Kaluzienski, L. J HQ-SC/Opp, A. G.	11-Astronomy

NGR 30-002-052 **University of New Hampshire** **2827**
Research program in area of cosmic ray and X-ray astronomy

Period	Obligations	
02/12/70-09/30/79	FY79: $110,000	TOTAL: $1,080,000

Prin Invest	NASA Tech Officer	CASE Category
Webber, W. R.	HQ-SC/Fishman, G. J. HQ-SC/Kaluzienski, L. J.	11-Astronomy

NEW HAMPSHIRE (Continued)

NSG 5316 **University of New Hampshire** **2828**
Collaborative research of solar phenomena: Solar maximum mission

Period	Obligations	
07/01/79 03/31/80	FY79: $7,900	TOTAL: $7,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fisk, L. A.	GSFC/Donley, J. L.	31-Atmos Sci

NSG 6022 **University of New Hampshire** **2829**
Rocket study of auroral processes

Period	Obligations	
05/01/78-06/30/80	FY79: $72,814	TOTAL: $150,836
Prin Invest	*NASA Tech Officer*	*CASE Category*
Arnoldy, R. L.	WFC/Gray, J. W.	19-Phys Sci, NEC
Kaufmann, R. L.	WFC/Pless, R. H.	

NSG 7411 **University of New Hampshire** **2830**
Theoretical studies in solar particle physics

Period	Obligations	
10/01/77-09/30/79	FY79: $36,000	TOTAL: $61,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fisk, L. A.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 7481 **University of New Hampshire** **2831**
Application of a double compton telescope to measurements of the 1-15 MeV extra-terrestrial gamma rays

Period	Obligations	
03/01/78-02/28/80	FY79: $59,100	TOTAL: $59,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lockwood, J. A.	HQ-SC/Kaluzienski, L. J.	11-Astronomy
Webber, W. R.	HQ-SC/Opp, A. G.	

NEW JERSEY

NAS 5-25483 **Fairleigh Dickinson University** **2832**
Design and fabricate far infrared filters for diffused infrared background experiment

Period	Obligations	
02/17/79-08/16/79	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moeller, K. D.	GSFC/Heaney, J. B.	11-Astronomy

NAS 1-9705 **Princeton University** **2833**
Participation in the science planning for the Viking 1975 missions in the area of magnetic properties

Period	Obligations	
04/03/70-02/28/79	FY79:	TOTAL: $267,863
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hargraves, R. B.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	19-Phys Sci, NEC

NAS 1-13502 **Princeton University** **2834**
In-flight evaluation of decoupler longitudinal controls for a STOL transport aircraft

Period	Obligations	
08/19/74-11/30/78	FY79	TOTAL: $178,945
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sockel, E.	LARC/Miller, G. K.	41-Aero Engr
Ellis, D. R.	LARC/Queijo, M. J.	

NAS 1-15758 **Princeton University** **2835**
Navion modification and flight test support

Period	Obligations	
03/30/79-06/13/80	FY79: $93,000	TOTAL: $93,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stengel, R. F.	LARC/Downing, D. R.	41-Aero Engr
	LARC/Bryant, W. H.	

NAS 1-15764 **Princeton University** **2836**
Investigation of flying qualities criteria for single pilot instrument flight operations

Period	Obligations	
04/05/79-06/19/80	FY79 $79,139	TOTAL: $79,139
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stengel, R. F.	LARC/Niessen, F. R.	41-Aero Engr
	LARC/Garren, J. F., Jr.	

NAS 5-22360 **Princeton University** **2837**
Spectroscopy using the one meter ultraviolet optical telescope for Spacelab astronomy missions

Period	Obligations	
04/18/75-06/30/80	FY79:	TOTAL: $19,277
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jenkins, E. B.	GSFC/Wilson, L.	32-Geological Sci

NAS 5-23576 **Princeton University** **2838**
Orbital operations, data reduction and analysis, and OAO guest investigator program

Period	Obligations	
09/01/76-09/30/81	FY79: $883,000	TOTAL: $2,647,655
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spitzer, L., Jr.	GSFC/Corrigan, J. P.	11-Astronomy

NAS 5-24486 **Princeton University** **2839**
Microwave and theoretical studies for cosmic background Explorer satellite

Period	Obligations	
03/01/78-03/01/80	FY79: $29,926	TOTAL: $88,077
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilkinson, D. T.	GSFC/Nace, D. A.	11-Astronomy
	GSFC/Donohoe, M. J.	

NAS 5-25084 **Princeton University** **2840**
Data and operations team leader for the space telescope project

Period	Obligations	
05/23/78-12/31/84	FY79: $80,000	TOTAL: $133,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Groth, E. J.	GSFC/Hobbs, R. W.	11-Astronomy
	GSFC/Martin, J. B.	

NAS 8-32614 **Princeton University** **2841**
Develop and test mathematical models of the three-dimensional flow field and particle motions

Period	Obligations	
08/23/77-12/10/79	FY79: $96,126	TOTAL: $178,586
Prin Invest	*NASA Tech Officer*	*CASE Category*
Saville, D. A.	MSFC/Neuschaefer, R. MSFC/Snyder, R. S.	13-Physics

NAS 8-33102 **Princeton University** **2842**
The evaluation of candidate metals in a simulated space shuttle main engine environment for application as turbine blade dampers

Period	Obligations	
09/11/78-02/10/79	FY79:	TOTAL: $14,856
Prin Invest	*NASA Tech Officer*	*CASE Category*
Caveny, L. H.	MSFC/McPherson, W. B. MSFC/Schuerer, P. H.	49-Engr, NEC

NAS 8-33345 **Princeton University** **2843**
Investigate accretion flows in the Perseus cluster galaxies

Period	Obligations	
02/14/79-08/13/80	FY79: $3,499	TOTAL: $3,499
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cowie, L. L. Fabian, A. C. Nulsen, P. E.	MSFC/Jones, J. B., Jr.	11-Astronomy

NGL 31-001-005 **Princeton University** **2844**
Formation & stability of magnetogasdynamic front in a pitch discharge

Period	Obligations	
09/24/62-09/30/79	FY79:	TOTAL: $2,422,912
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jahn, R. G. Clark, K. E.	HQ-RP/Lazar, J.	42-Astro Engr

NGL 31-001-007 **Princeton University** **2845**
Theoretical & experimental studies of ultraviolet phenomena of astronomical interest & galactic gas dynamics

Period	Obligations	
05/06/63-03/31/82	FY79: $184,239	TOTAL: $2,067,982
Prin Invest	*NASA Tech Officer*	*CASE Category*
Spitzer, L., Jr.	HQ-SC/Roman, N. G. HQ-SC/Weiler, E. J.	11-Astronomy

NGL 31-001-252 **Princeton University** **2846**
Air traffic control technology

Period	Obligations	
11/15/71-01/31/83	FY79: $150,000	TOTAL: $643,333
Prin Invest	*NASA Tech Officer*	*CASE Category*
Graham, D	LARC/Downing, D. R. LARC/MacE, W. D.	41-Aero Engr

NGR 31-001-202 **Princeton University** **2847**
Lunar retro-reflector ranging

Period	Obligations	
05/27/70-05/14/78	FY79:	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dicke, R. H.	HQ-SC/Boggess, N. W.	13-Physics

NSG 1070 **Princeton University** **2848**
Resonant Doppler velocimeter

Period	Obligations	
07/01/74-10/31/79	FY79: $50,699	TOTAL: $224,280
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miles, R. B.	LARC/Honaker, W. C.	13-Physics

NSG 1253 **Princeton University** **2849**
Sound transmission analysis for determining interior sound levels

Period	Obligations	
11/01/75-09/30/79	FY79:	TOTAL: $137,561
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dowell, E. H.	LARC/Mixson, J. S.	41-Aero Engr

NSG 1587 **Princeton University** **2850**
Command and stability augmentation techniques for aircraft with control saturation

Period	Obligations	
01/01/79-06/30/80	FY79: $25,230	TOTAL: $25,230
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stengel, R. F	LARC/Schy, A. A. LARC/Young, J. W.	41-Aero Engr

NSG 1630 **Princeton University** **2851**
Preliminary investigation of the external flow analysis for density measurements at high altitude

Period	Obligations	
07/01/79-10/31/79	FY79: $17,027	TOTAL: $17,027
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bienkowski, G. K.	LARC/Jones, J. J.	41-Aero Engr

NSG 2062 **Princeton University** **2852**
Studies of space colonization

Period	Obligations	
01/01/75-09/30/79	FY79: $75,000	TOTAL: $348,805
Prin Invest	*NASA Tech Officer*	*CASE Category*
O'Neill, G. K.	ARC/Gilbreath, W. P. ARC/Sadin, S. R.	99-Multi-Discip

NSG 2194 **Princeton University** **2853**
Transonic flow around wings, bodies and wing-body configurations

Period	Obligations	
11/01/76-10/31/79	FY79: $44,935	TOTAL: $162,941
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dowell, E. H	ARC/Davis, S. S. ARC/Chapman, G. T	41-Aero Engr

NSG 2299 **Princeton University** **2854**
A comprehensive program of compressible turbulent boundary layer research

Period	Obligations	
02/01/78-01/31/80	FY79: $74,997	TOTAL: $149,992
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bogdonoff, S. M.	ARC/Horstman, C. C.	41-Aero Engr
Settles, G. S.	ARC/Marvin, J. G.	

NSG 2366 **Princeton University** **2855**
Turbulence measurements in high speed flows by resonant fluorescence

Period	Obligations	
01/01/79-12/31/79	FY79: $42,000	TOTAL: $42,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miles, R. B.	ARC/McKenzie, R. L.	13-Physics

NSG 3176 **Princeton University** **2856**
Mass driver development

Period	Obligations	
12/01/77-11/30/79	FY79: $100,000	TOTAL: $139,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
O'Neill, G. K.	LERC/Domitz, S.	42-Astro Engr
	LERC/Myers, I. T.	

NSG 3178 **Princeton University** **2857**
Internal combustion engine flame propagation and emissions: Small scale turbulence modeling and large scale eddy resolution

Period	Obligations	
12/15/77-12/14/79	FY79: $100,000	TOTAL: $199,343
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sirignano, W. A.	LERC/Cassidy, J. F	46-Mech Engr
Gany, A.	LERC/Kempke, E. E.	

NSG 3292 **Princeton University** **2858**
Unsteady transonic aerodynamics of cascades

Period	Obligations	
10/01/79-09/31/80	FY79: $30,530	TOTAL: $30,530
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dowell, E. H.	LERC/Braun, W. H.	41-Aero Engr
Williams, M. H.		

NSG 5248 **Princeton University** **2859**
Observational research on the IUE satellite

Period	Obligations	
03/01/78-02/29/80	FY79:	TOTAL: $20,312
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jenkins, E. B.	GSFC/Boggess, A.	11-Astronomy
Spitzer, L., Jr.	GSFC/West, D. K.	

NSG 5277 **Princeton University** **2860**
Oblique magnetic focusing

Period	Obligations	
07/01/78-08/31/80	FY79: $35,799	TOTAL: $72,312
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lowrance, J. L.	GSFC/Williams, J. T.	13-Physics
York, D. G.		

NSG 5382 **Princeton University** **2861**
Velocity distribution of interstellar clouds in distant spiral arms and in magellanic clouds

Period	Obligations	
07/01/79-06/30/80	FY79: $5,800	TOTAL: $5,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
York, D. G.	GSFC/Boggess, A.	11-Astronomy
Cowie, L. L.		

NSG 5415 **Princeton University** **2862**
Study of the fluctuations in the cosmic X-ray background

Period	Obligations	
09/14/79-09/13/80	FY79: $11,498	TOTAL: $11,498
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turners, E. L.	GSFC/Corrigan, J. P.	11-Astronomy

NSG 7080 **Princeton University** **2863**
Study of elastic wave propagation in the moon

Period	Obligations	
07/01/74-02/28/80	FY79: $3,504	TOTAL: $180,288
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phinney, R. A	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. M.	

NSG 7256 **Princeton University** **2864**
Research in extragalactic astrophysics

Period	Obligations	
07/01/76-12/31/79	FY79: $11,388	TOTAL: $28,388
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bahcall, N. A.	HQ-SC/Roman, N. G	11-Astronomy
	HQ-SC/Weiler, E. J.	

NSG 7280 **Princeton University** **2865**
The effect of gravity and weightlessness on the development and regeneration of the giant Coenocyte Caulerpa

Period	Obligations	
10/01/76-09/30/79	FY79: $50,000	TOTAL: $130,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jacobs, W. P.	HQ-SB/Halstead, T. W.	51-Biological Sci
	HQ-SB/Geib, D. S.	

NSG 7283 **Princeton University** **2866**
Condensed matter in astrophysics

Period	Obligations	
10/01/76-11/30/78	FY79:	TOTAL: $44,466
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smoluchowski, R.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7302 **Princeton University** **2867**
New radiometers for balloon 3 K isotropy experiment

Period	Obligations	
11/15/76-12/31/79	FY79: $29,700	TOTAL: $79,321
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilkinson, D. T.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7379 **Princeton University** **2868**
Large area charged coupled device image sensors for space astronomy

Period 11/01/77-02/28/79 *Obligations* FY79: TOTAL: $98,775
Prin Invest Schwarzschild, M. *NASA Tech Officer* HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G. *CASE Category* 11-Astronomy

NSG 7568 **Princeton University** **2869**
The geomorphic role of water ice on Mars

Period 03/15/79-03/14/80 *Obligations* FY79: $30,310 TOTAL: $30,310
Prin Invest Judson, S. *NASA Tech Officer* HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M. *CASE Category* 32-Geological Sci

NSG 7600 **Princeton University** **2870**
Support of international astronomical union colloquium no. 54 Scientific Research with Space Telescope

Period 04/01/79-09/30/80 *Obligations* FY79: $11,480 TOTAL: $11,480
Prin Invest Spitzer, L., Jr *NASA Tech Officer* HQ-SC/Roman, N. G. HQ-SC/Weiler, E. J. *CASE Category* 11-Astronomy

NSG 7602 **Princeton University** **2871**
The origin of maghemite on Mars

Period 07/01/79-01/30/80 *Obligations* FY79: $39,937 TOTAL: $39,937
Prin Invest Hargraves, R. B. *NASA Tech Officer* HQ-SL/French, B. M. HQ-SL/Dwornik, S. E. *CASE Category* 32-Geological Sci

NSG 7618 **Princeton University** **2872**
Photon counting image sensor development for astronomical applications

Period 07/01/79-06/30/80 *Obligations* FY79: $94,000 TOTAL: $94,000
Prin Invest Jenkins, E. B. *NASA Tech Officer* HQ-SC/Roman, N. G HQ-SC/Weiler, E. J. *CASE Category* 11-Astronomy

NSG 1566 **Rutgers University - New Brunswick** **2873**
Assessment of geophysical algorithms and regional application of data (SEASAT 1)

Period 11/01/78-10/31/79 *Obligations* FY79: $9,217 TOTAL: $9,217
Prin Invest Delnore, V. E. *NASA Tech Officer* LARC/Jones, W. L LARC/Schroeder, L. C. *CASE Category* 33-Oceanography

NSG 3280 **Rutgers University - New Brunswick** **2874**
The physics of turbulent flow

Period 06/01/79-06/01/80 *Obligations* FY79: $15,000 TOTAL: $15,000
Prin Invest Johnson, J. A. *NASA Tech Officer* LERC/Claus, R. W. *CASE Category* 41-Aero Engr

NSG 5195 **Rutgers University - New Brunswick** **2875**
Investigation of the detailed light curves using SAS-3

Period 08/01/77-01/31/79 *Obligations* FY79: TOTAL: $10,690
Prin Invest Matilsky, T. A. *NASA Tech Officer* GSFC/Kupperian, J. E., Jr *CASE Category* 11-Astronomy

NSG 7327 **Rutgers University - New Brunswick** **2876**
Research and studies of metal silicate relationships in howardite breccias

Period 02/01/77-01/31/80 *Obligations* FY79: $28,024 TOTAL: $81,084
Prin Invest Hewins, R. H. *NASA Tech Officer* HQ-SL/French, B. M. HQ-SL/Quaide, W. L. *CASE Category* 32-Geological Sci

NSG 7601 **Rutgers University - New Brunswick** **2877**
Covection in spherical shells

Period 03/15/79-03/14/80 *Obligations* FY79: $17,572 TOTAL: $17,572
Prin Invest Zebib, A. *NASA Tech Officer* HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M. *CASE Category* 32-Geological Sci

NSG 9065 **Rutgers University - New Brunswick** **2878**
Flow behavior of extraterrestrial materials

Period 02/01/78-09/30/79 *Obligations* FY79: $6,000 TOTAL: $26,415
Prin Invest Klein, L. C. *NASA Tech Officer* JSC/Harris, J. W. *CASE Category* 32-Geological Sci

NSG 1619 **Stevens Institute of Technology** **2879**
Free stream disturbances, continuum eigenfunctions boundary layer instability and transition

Period 05/16/79-05/15/80 *Obligations* FY79: $25,000 TOTAL: $25,000
Prin Invest Salwen, H. *NASA Tech Officer* LARC/Bushnell, D. M. LARC/Hefner, J. N *CASE Category* 41-Aero Engr

NSG 3180 **Trenton State College** **2880**
Analytical modeling of flash-back phenomena

Period 01/01/78-11/05/79 *Obligations* FY79: $24,948 TOTAL: $35,377
Prin Invest Feng, C. C. *NASA Tech Officer* LERC/Marek, C. J *CASE Category* 46-Mech Engr

NEW MEXICO

NGT 32-010-001 **New Mexico Highlands University** **2881**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/74-05/31/78	FY79:	TOTAL: $49,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Zenick, H.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	99-Multi-Discip

NAS 8-33341 **New Mexico Institute of Mining & Tech** **2882**
The size and structure of the corona of RT lacertae and the X-ray variability of HR1099

Period	Obligations	
02/22/79-05/21/80	FY79: $12,000	TOTAL: $12,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gibson, D. M.	MSFC/Jones, J. B., Jr.	11-Astronomy

NCA 5-64 **New Mexico Institute of Mining & Tech** **2883**
Research of cometary and astrophysical sciences

Period	Obligations	
04/30/76-09/30/77	FY79:	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Moore, E. P.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-69 **New Mexico Institute of Mining & Tech** **2884**
Cometary observations and research activities

Period	Obligations	
08/23/76-12/31/80	FY79:	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Moore, E. P.	GSFC/Hobbs, R. W.	11-Astronomy

NCA 5-71 **New Mexico Institute of Mining & Tech** **2885**
Cometary and astrophysical research activities

Period	Obligations	
11/01/76-09/30/79	FY79: $20,000	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Moore, E. P.	GSFC/Hobbs, R. W.	11-Astronomy

NAS 5-24241 **New Mexico State University - Las Cruces** **2886**
Sounding rocket support

Period	Obligations	
08/01/77-07/31/80	FY79: $1,320,137	TOTAL: $2,694,076
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Lawrence, H.	GSFC/Pincus, B. R.	49-Engr. NEC
Connell, H.	GSFC/Windsor, M.	

NAS 6-2885 **New Mexico State University - Las Cruces** **2887**
Refinement of grid adjustment software for contour mapping studies

Period	Obligations	
03/01/78-02/28/79	FY79:	TOTAL: $49,970
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Guard, K.	WFC/Krabill, W. B. WFC/Walsh, W. J.	32-Geological Sci

NAS 9-95482 **New Mexico State University - Las Cruces** **2888**
Study to test and evaluate residual SEASAT hardware for possible implementation for the OFT-2 SAR antenna

Period	Obligations	
09/23/77-12/01/79	FY79	TOTAL: $58,942
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Henry, D. G.	JSC/Nitschke, H. A.	39-Env Sci, NEC

NAS 9-95497 **New Mexico State University - Las Cruces** **2889**
Feasibility study to determine if a dual polarized L-band antenna for MW systems can be developed using microstrip and honeycomb techniques

Period	Obligations	
07/09/79-09/30/79	FY79: $13,769	TOTAL: $13,769
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Carver, K.	JSC/Fenner, R. G.	39-Env Sci, NEC

NGL 32-003-001 **New Mexico State University - Las Cruces** **2890**
Photographic patrol and study of physical conditions on the moon and planets

Period	Obligations	
04/15/6'-06/30/80	FY79: $69,850	TOTAL: $1,958,801
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Beebe, R. F.	HQ-SL/Brunk, W. E HQ-SL/Murphy, R. E.	11-Astronomy

NSG 7346 **New Mexico State University - Las Cruces** **2891**
Two station meteor patrol for orbit determination and spectroscopy

Period	Obligations	
07/11/77-06/30/78	FY79	TOTAL: $9,043
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Beebe, H. A.	HQ-SL/Donn, B. D. HQ-SL/Brunk, W. E	11-Astronomy

NSG 7622 **New Mexico State University - Las Cruces** **2892**
Speed-dependent collision effects on radar back-scattering from the ionosphere

Period	Obligations	
09/01/79-08/31/80	FY79: $27,000	TOTAL: $27,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Theimer, O. H.	HQ-ST/Hedin, A. E. HQ-ST/Schmerling, E. R.	19-Phys Sci, NEC

NSG 3092 **University of Albuquerque** **2893**
In situ analysis of trace metal ion pollutants in natural waters

Period	Obligations	
01/05/76-07/05/78	FY79:	TOTAL: $94,648
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Urzendowski, R. M.	LERC/Fordyce, J. S.	12-Chemistry

NASW 2936 **University of New Mexico** **2894**
Operation of NASA's Industrial Applications Center

Period	Obligations	
07/01/76-09/30/79	FY79: $250,000	TOTAL: $798,864
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Unavailable	HQ-ET/Bivins, R. G.	99-Multi-Discip

NASW 3243 **University of New Mexico** **2895**
Three-day symposium on aeronautics and space

Period	Obligations	
01/26/79-06/11/79	FY79: $24,736	TOTAL: $24,736
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sanchez, R. S.	HQ-U/Ludi, A. J.	41-Aero Engr
Garrett, M. A.	HQ-U/Catron, D. B.	

NAS13-109 **University of New Mexico** **2896**
Conduct short courses in remote sensing

Period	Obligations	
03/29/79-01/28/80	FY79: $15,931	TOTAL: $15,931
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morain, S. R.	NSTL/Atwell, B. H.	32-Geological Sci

NGL 32-004-011 **University of New Mexico** **2897**
Comparative study of lunar craters and terrestrial volcano-tectonic depressions in rhyolite ash-flow plateaus

Period	Obligations	
10/12/64-12/31/79	FY79:	TOTAL: $395,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Elston, W. E	HQ-SL/Dwornik, S. E.	32-Geological Sci

NGL 32-004-063 **University of New Mexico** **2898**
Lunar sample analysis

Period	Obligations	
01/06/71-01/31/81	FY79: $43,510	TOTAL: $844,928
Prin Invest	*NASA Tech Officer*	*CASE Category*
Keil, K.	JSC/Harris, J. W.	12-Chemistry

NGL 32-004-064 **University of New Mexico** **2899**
Mineralogy and chemistry of polymict-brecciated stone meteorites

Period	Obligations	
06/14/71-02/29/81	FY79: $114,190	TOTAL: $593,327
Prin Invest	*NASA Tech Officer*	*CASE Category*
Keil, K.	HQ-SL/French, B. M.	32-Geological Sci
Fodor, R. V.	HQ-SL/Quaide, W. L.	
Taylor, G. J.		

NGR 32-004-062 **University of New Mexico** **2900**
Search for evidence of dynamic process

Period	Obligations	
06/22/70-12/31/79	FY79: $26,920	TOTAL: $206,090
Prin Invest	*NASA Tech Officer*	*CASE Category*
Elston, W. E.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M	

NGT 32-004-770 **University of New Mexico** **2901**
A precooperative education program

Period	Obligations	
07/25/77-07/24/80	FY79: $12,000	TOTAL: $32,208
Prin Invest	*NASA Tech Officer*	*CASE Category*
Etter, D. M.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G.	

NSG 7579 **University of New Mexico** **2902**
Chemical weathering on Mars

Period	Obligations	
03/01/79-09/30/79	FY79: $27,230	TOTAL: $27,230
Prin Invest	*NASA Tech Officer*	*CASE Category*
Keil, K.	HQ-SL/Quaide, W. L	31-Atmos Sci

NEW YORK

NSG 2088 **Adelphi University** **2903**
Study of the thin turbulent shear layers on the optical transfer function of an imaging system

Period	Obligations	
09/01/75-08/31/79	FY79:	TOTAL: $77,946
Prin Invest	*NASA Tech Officer*	*CASE Category*
Steinmetz, W. J.	ARC/Buell, D. A.	12-Chemistry

NSG 1378 **Brooklyn College** **2904**
Research in medium and high energy atomic physics theory

Period	Obligations	
12/03/76-06/30/80	FY79:	TOTAL: $42,170
Prin Invest	*NASA Tech Officer*	*CASE Category*
Franco, V.	LARC/Meador, W. E., Jr.	13-Physics
Thomas, B. K.	LARC/Wilson, J. W.	

NAS 1-15669 **City College of New York** **2905**
Verification of SEASAT wind speed and direction objectives and demonstration of global capability for extratropical cyclones

Period	Obligations	
02/27/79-05/11/80	FY79 $80,000	TOTAL $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pierson, W. J	LARC/Schroeder, L. C.	
Salfi, R. K.	LARC/Jones, W. L.	33-Oceanography

NAS 9-13642 **City College of New York** **2906**
Joint meteorological, oceanographic and sensor evaluation program Skylab experiment S-193

Period	Obligations	
07/01/73-01/31/78	FY79	TOTAL: $389,008
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pierson, W. J.	JSC/Byrns, Z. H.	13-Physics

NAS 9-13940 **City College of New York** **2907**
Communication systems analysis study

Period	Obligations	
04/04/74-10/01/79	FY79 $30,000	TOTAL $239,892
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schilling, D. L.	JSC/Land, C. K.	45-Elec Engr
Scheinberg, N.		
Davidovici, S.		

NGL 33-013-040 **City College of New York** **2908**
Theoretical research in astrophysics and astronomy

Period	Obligations	
04/23/69-09/30/81	FY79: $15,000	TOTAL: $394,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Erlbach, E.	GSFC/Canuto, V.	11-Astronomy
	GSFC/Stothers, R.	

NGR 33-013-086 **City College of New York** **2909**
Models for large scale meteorological prediction experiments

Period	Obligations	
10/01/73-12/31/79	FY79: $43,991	TOTAL: $270,933
Prin. Invest	*NASA Tech Officer*	*CASE Categor*
Spar, J.	GSFC/Hansen, J. E.	31-Atmos Sci

NSG 1485 **City College of New York** **2910**
Theory of strong turbulence by renormalization into repeated-cascade

Period	Obligations	
01/15/78-01/14/80	FY79: $28,398	TOTAL: $53,398
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Tchen, C. M.	LARC/Hess, R. V.	39-Env Sci, NEC
	LARC/Maestrello, L.	

NSG 2348 **City College of New York** **2911**
Theoretical problems of spiral galaxies

Period	Obligations	
11/01/78-11/30/79	FY79: $39,926	TOTAL: $39,926
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Yuan, C.	ARC/Black, D. C.	11-Astronomy
	ARC/Smith, B. F.	

NSG 3174 **City College of New York** **2912**
Analysis of turbulent coaxial flow with international energy generation

Period	Obligations	
10/03/77-01/31/80	FY79:	TOTAL: $78,583
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Weinstein, H.	LERC/Braun, W. H.	49-Engr, NEC

NSG 5013 **City College of New York** **2913**
Efficient processing of video signals

Period	Obligations	
06/15/74-09/30/79	FY79:	TOTAL: $195,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Schilling, D. L.	GSFC/Kahle, D. R.	45-Elec Engr

NSG 5334 **City Univ of Ny - Grad School & Univ Cen** **2914**
Relativistic effects in atoms

Period	Obligations	
02/01/79-01/31/80	FY79: $19,935	TOTAL: $19,935
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Mittleman, M. H.	GSFC/Terskin, A.	13-Physics

NAS 8-32944 **Clarkson College of Technology** **2915**
Experiment for materials processing in space, physical phenomena in containerless glass processing

Period	Obligations	
02/23/78-02/23/83	FY79: $107,000	TOTAL: $255,502
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Subramanian, R. S.	MSFC/Williams, J. R.	13-Physics
Cole, R.	MSFC/Johnson, J. L.	

NSG 1572 **Clarkson College of Technology** **2916**
Convection effects during Bridgman growth of semiconductors

Period	Obligations	
12/01/78-04/09/80	FY79: $43,981	TOTAL: $43,981
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Carlson, F.	LARC/Crouch, R. K.	13-Physics
Wilcox, W. R.	LARC/Fripp, A. L.	

NSG 3191 **Clarkson College of Technology** **2917**
Design of a microprocessor-based high speed space borne message switch

Period	Obligations	
04/15/78-04/14/80	FY79: $38,982	TOTAL: $38,982
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Arozullah, M.	LERC/Rotnem, J. O.	45-Elec Engr
Christ, S. C.		

NSG 9059 **Clarkson College of Technology** **2918**
Light flash phenomena induced by haze particles

Period	Obligations	
09/01/77-02/29/80	FY79:	TOTAL: $34,331
Prin Invest	*NASA Tech Officer*	*CASE Categor*
McNulty, P.	JSC/Barnes, C. M.	13-Physics
Pease, V.		

NAS 5-24152 **Columbia University** **2919**
Data reduction and anlysis of graphite crystal X-ray spectrometer OSO-I

Period	Obligations	
10/01/77-0[illegible]30/80	FY79: $228,831	TOTAL: $355,351
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Novick, R.	GSFC/Gemmell, J. D	11-Astronomy
	GSFC/Kupperian, J E., Jr.	

NAS 5-24457 **Columbia University** **2920**
Solar flare X-ray polarimeter experiment

Period	Obligations	
02/22/78-10/31/81	FY79: $230,255	TOTAL: $892,255
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Novick, R.	GSFC/Eiband, A. M.	11-Astronomy
Chanan, G. A.		

NAS 5-25422 **Columbia University** **2921**
Technical services operations and materials for the acquisitions, processing and cataloging of books, periodicals and other literature for Goddard Institute for Space Studies (GISS)

Period	Obligations	
04/01/79-03/31/80	FY79: $27,533	TOTAL: $27,533
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yavarkovsky, J.	GSFC/Jennings, N.	99-Multi-Discip

NAS 6-2519 **Columbia University** **2922**
GEOS-C research

Period	Obligations	
10/16/74-07/31/78	FY79:	TOTAL: $283,517
Prin Invest	*NASA Tech Officer*	*CASE Category*
Talwani, M.	WFC/Stanley, H. R.	32-Geological Sci
Watts, A. B.	WFC/Rossi, L. C.	

NAS 8-30753 **Columbia University** **2923**
Design, development and operation of the HEAO mission B X-ray telescope experiment

Period	Obligations	
06/01/74-12/31/79	FY79: $133,000	TOTAL: $378,451
Prin Invest	*NASA Tech Officer*	*CASE Category*
Novick, R.	MSFC/Manning, H. S.	11-Astronomy
Angel, J. R.	MSFC/Hughes, J. C.	
Kestenbaum, H. L.		

NAS 8-32212 **Columbia University** **2924**
Space vehicle control system

Period	Obligations	
09/01/76-10/31/79	FY79:	TOTAL: $20,054
Prin Invest	*NASA Tech Officer*	*CASE Category*
Likins, P. A.	MSFC/Seltzer, S. M.	19-Phys Sci, NEC
Longman, R.	MSFC/Shelton, H. L.	

NAS 8-33378 **Columbia University** **2925**
Acoustic and gravity waves in the neutral atmosphere and the ionosphere

Period	Obligations	
04/18/79-04/17/80	FY79: $77,618	TOTAL: $77,618
Prin Invest	*NASA Tech Officer*	*CASE Category*
Balachandran, N. K.	MSFC/West, G. S., Jr	31-Atmos Sci
	MSFC/Thomas, P. E.	

NCC 1 5 **Columbia University** **2926**
The influence of auditory inputs on simulated flight operations

Period	Obligations	
04/15/79-10/31/79	FY79: $38,286	TOTAL: $38,286
Prin Invest	*NASA Tech Officer*	*CASE Category*
Galanter, E.	LARC/Harris, R. L., Sr.	41-Aero Engr

NCC 5 3 **Columbia University** **2927**
Research of the relationship between gravity and bathymetry in the Pacific Ocean

Period	Obligations	
04/01/79-03/31/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Watts, A. B.	GSFC/Wagner, C. A.	32-Geological Sci
McKenzie, D. P.		

NCC 5 16 **Columbia University** **2928**
Multidisciplinary research in space science

Period	Obligations	
05/15/79-06/30/80	FY79: $324,506	TOTAL: $324,506
Prin Invest	*NASA Tech Officer*	*CASE Category*
Broecker, W. S.	GSFC/Thaddeus, P.	31-Atmos Sci
Flynn, G. W.		

NGR 33-008-102 **Columbia University** **2929**
Research in X-ray astronomy

Period	Obligations	
01/30/68-12/31/80	FY79: $250,000	TOTAL: $2,208,342
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Novick, R.	GSFC/Bissell, E. E.	11-Astronomy
Long, K. S.	HQ-SC/Opp, A. G.	
Helfand, D. J.		

NGR 33-008-146 **Columbia University** **2930**
Study of strain buildup, release and earthquake prediction

Period	Obligations	
02/09/71-04/30/80	FY79: $36,995	TOTAL: $555,486
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scholz, C. H.	GSFC/Smith, D. E.	19-Phys Sci, NEC
Johnson, T. L.		
Bilham, R. G.		

NGR 33-008-177 **Columbia University** **2931**
Lunar sample analysis

Period	Obligations	
11/01/72-09/30/79	FY79: $7,000	TOTAL: $144,040
Prin Invest	*NASA Tech Officer*	*CASE Category*
Horai, K.	JSC/Harris, J. W.	13-Physics

NSG 1450 **Columbia University** **2932**
Aircraft cabin noise, prediction and optimization

Period	Obligations	
09/06/77-01/05/81	FY79: $111,446	TOTAL: $160,712
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vaicaitis, R.	LARC/Mixson, J. S.	41-Aero Engr
	LARC/Stephens, D. G.	

NSG 1541 **Columbia University** **2933**
Influence of auditory inputs on simulated flight operations

Period	Obligations	
06/15/78-06/30/79	FY79:	TOTAL: $73,794
Prin Invest	*NASA Tech Officer*	*CASE Category*
Galanter, E.	LARC/Harris, R. L., Sr.	41-Aero Engr
	LARC/Bergeron, H. P.	

NEW YORK (Continued)

NSG 1550 **Columbia University** **2934**
Time-of-day effects on the numerical representation of community response to noise

Period	Obligations	
07/01/78-06/30/80	FY79: $49,527	TOTAL: $98,390

Prin Invest	NASA Tech Officer	CASE Category
Galanter, E.	LARC/Stephens, D. G.	49-Engr, NEC
	LARC/Cawthorn, J. M.	

NSG 1616 **Columbia University** **2935**
Development of a detailed plan for a comprehensive field survey on community response to noise

Period	Obligations	
05/08/79-02/07/80	FY79: $80,000	TOTAL: $80,000

Prin Invest	NASA Tech Officer	CASE Category
Borsky, P. N.	LARC/Stephens, D G.	49-Engr, NEC

NSG 3050 **Columbia University** **2936**
Creep and stress rupture behavior of oxide dispersion strengthened super alloys

Period	Obligations	
06/01/75-11/30/78	FY79:	TOTAL. $116,549

Prin Invest	NASA Tech Officer	CASE Category
Tien, J. K.	LERC/Glasgow, T. K.	47-Materials Engr

NSG 5072 **Columbia University** **2937**
Surface deformation and elasticity studies

Period	Obligations	
08/01/75-01/31/79	FY79	TOTAL: $97,766

Prin Invest	NASA Tech Officer	CASE Category
Bilham, R. G.	GSFC/Allenby, R. J.	32-Geological Sci
	GSFC/Mead, G. D.	

NSG 5080 **Columbia University** **2938**
Application of LANDSAT data to agricultural resource problems

Period	Obligations	
08/15/75-11/30/79	FY79: $80,041	TOTAL: $304,414

Prin Invest	NASA Tech Officer	CASE Category
High, C. J.	GSFC/Ungar, S. G.	32-Geological Sci
Goward, S. N.		

NSG 5163 **Columbia University** **2939**
Multidisciplinary research in the space studies

Period	Obligations	
03/01/77-09/30/79	FY79: $90,400	TOTAL. $928,435

Prin Invest	NASA Tech Officer	CASE Category
Happner, W.	GSFC/Thaddeus, P.	11-Astronomy
Broecker, W. S.	GSFC/Hansen, J. E.	

NSG 5168 **Columbia University** **2940**
Simultaneous observations of the ultraviolet spectrum, the optical spectrum and the optical polarization of Orionis

Period	Obligations	
04/01/77-03/31/78	FY79:	TOTAL: $5,000

Prin Invest	NASA Tech Officer	CASE Category
Hayes, D. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5200 **Columbia University** **2941**
Sounding rocket-borne X-ray research of temporal and spectral features

Period	Obligations	
08/01/77-07/31/78	FY79.	TOTAL: $3,999

Prin Invest	NASA Tech Officer	CASE Category
Novick, R.	GSFC/Kupperian, J. E., Jr.	
Wolff, R. S.		11-Astronomy

NSG 5222 **Columbia University** **2942**
Remote spectral analysis of mineral induced plant stress using airborne techniques

Period	Obligations	
01/16/78-07/15/79	FY79: $31,294	TOTAL: $55,332

Prin Invest	NASA Tech Officer	CASE Category
Kuo, J. T.	GSFC/Labovitz, M.	32-Geological Sci
Collins, W. E.	GSFC/Schnetzler, C. C	

NSG 5273 **Columbia University** **2943**
Application of GEOS-3 altimeter data to solution of problems in earth dynamics

Period	Obligations	
07/01/78-06/30/79	FY79:	TOTAL $50,000

Prin Invest	NASA Tech Officer	CASE Category
Talwani, M.	GSFC/Smith, D. E	32-Geological Sci
Watts, A. B.		

NSG 7105 **Columbia University** **2944**
Calculation of collision cross sections of astrophysical interest

Period	Obligations	
12/01/74-11/30/79	FY79: $35,000	TOTAL: $178,056

Prin Invest	NASA Tech Officer	CASE Category
Flynn, G. W.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7194 **Columbia University** **2945**
A critical study of constraints imposed by existing observational data

Period	Obligations	
02/01/76-01/31/79	FY79:	TOTAL: $93,855

Prin Invest	NASA Tech Officer	CASE Category
Keihm, S. J.	HQ-SL/Quaide, W. L	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7200 **Columbia University** **2946**
Rare-earth element abundance studies of chondrite meteorites

Period	Obligations	
03/01/76-04/30/79	FY79	TOTAL. $133,907

Prin Invest	NASA Tech Officer	CASE Category
Onions, R. K.	HQ-SL/French, B. M	32-Geological Sci
Ridley, W. I.	HQ-SL/Quaide, W. L	
Evenson, N. M.		

NSG 7248 **Columbia University** **2947**
Detailed studies of time variability of the galactic X-ray sources Cygnus X-1 and Scorpius X-1

Period	Obligations	
06/15/76-12/14/77	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weisskopf, M. C.	HQ-SC/Sofia, S.	11-Astronomy
	HQ-SC/Opp, A. G.	

NSG 7434 **Columbia University** **2948**
Phase stability and elastic wave velocity determinations for stoichiometric FeS

Period	Obligations	
02/01/78-01/31/80	FY79:	TOTAL: $63,123
Prin Invest	*NASA Tech Officer*	*CASE Category*
Takahashi, T.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7466 **Columbia University** **2949**
Petrogenesis of chondrules and chondrites

Period	Obligations	
05/01/78-03/31/80	FY79: $62,149	TOTAL: $100,445
Prin Invest	*NASA Tech Officer*	*CASE Category*
Onions, R. K.	HQ-SL/French, B. E.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NAS 1-9683 **Cornell University** **2950**
Participation in the science planning for the Viking 1975 missions in the area of imaging

Period	Obligations	
04/08/70-09/30/78	FY79:	TOTAL: $452,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sagan, C. E.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	99-Multi-Discip

NAS 5-23236 **Cornell University** **2951**
Feasibility study for infrared interferometer, spectrometer, & radiometer for Mariner/Jupiter 1977 launch

Period	Obligations	
05/01/73-10/31/81	FY79: $16,000	TOTAL: $61,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gierasch, P. J.	GSFC/Conrath, B. J.	13-Physics
	GSFC/Hanel, R. A.	

NAS 5-23785 **Cornell University** **2952**
Investigation of atmospheric planetary dynamics

Period	Obligations	
10/27/76-10/26/78	FY79: $12,000	TOTAL: $12,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gierasch, P. J.	GSFC/Pirraglia, J. A.	31-Atmos Sci

NCA 2-175801 **Cornell University** **2953**
Interactions of planetary satellites: The capture and tidal acceleration of moons, and the dynamics of circumplanetary dust

Period	Obligations	
01/01/78-12/31/79	FY79: $7,480	TOTAL: $13,730
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burns, J. A.	ARC/Pollack, J. B.	11-Astronomy

NCC 5 2 **Cornell University** **2954**
Finite element research of the surface field adjacent to the San Andreas fault

Period	Obligations	
04/01/79-03/31/80	FY79: $31,899	TOTAL: $31,899
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turcotte, D. L.	GSFC/Cohen, S. C.	11-Astronomy
Kulhawy, F. H.		

NCC 5 4 **Cornell University** **2955**
Research of precise leveling, space geodosy and geodynamics

Period	Obligations	
04/01/79-03/31/80	FY79: $60,000	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Oliver, J.	GSFC/Allenby, R. J.	32-Geological Sci
Brown, L. D.		

NGL 33-010-082 **Cornell University** **2956**
The study of lunar and planetary surfaces and atmospheres

Period	Obligations	
09/23/68-08/31/80	FY79: $32,500	TOTAL: $723,718
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sagan, C. E.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 33-010-171 **Cornell University** **2957**
A program in remote sensing

Period	Obligations	
02/14/72-05/31/82	FY79: $100,000	TOTAL: $900,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liang, T.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGL 33-010-186 **Cornell University** **2958**
Studies of thermal structure and motion of planetary atmospheres

Period	Obligations	
04/18/73-06/14/81	FY79: $72,649	TOTAL: $267,509
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gierasch, P. J.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 33-010-081 **Cornell University** **2959**
2 to 4 micron spectroscopy of Mars

Period	Obligations	
03/01/73-11/01/79	FY79: $104,690	TOTAL: $378,587
Prin Invest	*NASA Tech Officer*	*CASE Category*
Houck, J. R.	ARC/Haughney, L. C.	11-Astronomy
Forrest, W. J.		
Pollack, J. B.		

NGR 33-010-101 **Cornell University** **2960**
An integrated program in exobiology and problems related to origin of life

Period	Obligations	
10/09/69-09/30/79	FY79: $80,000	TOTAL: $779,945

Prin Invest	NASA Tech Officer	CASE Category
Sagan, C. E. Khare, B. N.	HQ-SB/Young, R. S.	12-Chemistry

NGR 33-010-108 **Cornell University** **2961**
Implications of convection within the moon

Period	Obligations	
05/18/70-01/31/80	FY79: $28,000	TOTAL: $199,220

Prin Invest	NASA Tech Officer	CASE Category
Turcotte, D. L.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NGR 33-010-146 **Cornell University** **2962**
Submillimeter astronomical spectrometry from aircraft

Period	Obligations	
02/16/72-10/30/79	FY79: $10,000	TOTAL: $242,714

Prin Invest	NASA Tech Officer	CASE Category
Harwit, M. O.	ARC/Cameron, R. M. ARC/Mason, R. H.	11-Astronomy

NGR 33-010-161 **Cornell University** **2963**
Studies of the magnetospheres of Earth and Jupiter

Period	Obligations	
01/18/72-06/30/79	FY79: $60,000	TOTAL: $287,790

Prin Invest	NASA Tech Officer	CASE Category
Farley, D. T.	HQ-ST/Kaiser, M. L. HQ-ST/Schmerling, E. R.	13-Physics

NGR 33-010-182 **Cornell University** **2964**
16 to 40 micron spectroscopy of Jupiter

Period	Obligations	
12/20/72-10/31/80	FY79: $10,000	TOTAL: $245,084

Prin Invest	NASA Tech Officer	CASE Category
Houck, J. R. Forrest, W. J. Pollack, J. B.	ARC/Cameron, R. M. ARC/Mason, R. H.	11-Astronomy

NGR 33-010-188 **Cornell University** **2965**
Astrophysical material science theory

Period	Obligations	
08/01/72-09/30/78	FY79:	TOTAL: $236,371

Prin Invest	NASA Tech Officer	CASE Category
Ashcroft, N. W. Krumhansl, J. A.	LERC/Flood, D. J.	13-Physics

NGR 33-010-189 **Cornell University** **2966**
Ultra pressure materials science

Period	Obligations	
08/01/75-09/30/78	FY79:	TOTAL: $677,000

Prin Invest	NASA Tech Officer	CASE Category
Ruoff, A. L.	LERC/Aron, P. R.	47-Materials Engr

NGR 33-010-220 **Cornell University** **2967**
Interdisciplinary investigations of Mariner 9 data

Period	Obligations	
12/05/73-09/31/79	FY79: $54,600	TOTAL: $307,791

Prin Invest	NASA Tech Officer	CASE Category
Sagan, C. E.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M	32-Geological Sci

NSG 1642 **Cornell University** **2968**
Fabrication of GAINASP microwave transistors

Period	Obligations	
07/15/79-07/14/80	FY79: $49,535	TOTAL: $49,535

Prin Invest	NASA Tech Officer	CASE Category
Frey, J.	LARC/Hutchby, J. A. LARC/Hendricks, H. D.	45-Elec Engr

NSG 1651 **Cornell University** **2969**
Holographic fabrication of gratings in metal substrates

Period	Obligations	
08/15/79-08/14/80	FY79: $55,975	TOTAL: $55,975

Prin Invest	NASA Tech Officer	CASE Category
Ballantyne, J. M. Wagner, D. K.	LARC/Conway, E. J. LARC/Walker, G. H.	45-Elec Engr

NSG 2331 **Cornell University** **2970**
Broadband rotor noise

Period	Obligations	
08/15/78-03/01/79	FY79:	TOTAL: $2,373

Prin Invest	NASA Tech Officer	CASE Category
George, A. R.	ARC/Yu, Y. H. ARC/Schmitz, F. H.	41-Aero Engr

NSG 2347 **Cornell University** **2971**
Far infrared spectral line observations from the G. P. Kuiper airborne observatory

Period	Obligations	
10/01/78-10/31/79	FY79: $90,500	TOTAL: $90,500

Prin Invest	NASA Tech Officer	CASE Category
Harwit, M. O.	ARC/Haughney, L. C.	11-Astronomy

NSG 2360 **Cornell University** **2972**
Helicopter blade-vortex interaction and broadband noise

Period	Obligations	
02/01/79-08/31/80	FY79: $34,807	TOTAL: $34,807

Prin Invest	NASA Tech Officer	CASE Category
George, A. R.	ARC/Schmitz, F. H.	41-Aero Engr

NSG 2382 **Cornell University** **2973**
A study to assess the potential for using long chain polymers dissolved in water to study turbulence

Period	Obligations	
05/01/79-05/31/80	FY79: $25,000	TOTAL: $25,000

Prin Invest	NASA Tech Officer	CASE Category
Lumley, J. L.	ARC/Chapman, G. T.	41-Aero Engr

NSG 2389 **Cornell University** **2974**
An evaluation of metal oxide semiconductor field effect transistor and metal semiconductor field effect transistor devices as preamplifiers at liquid helium temperatures

Period	Obligations	
06/01/79-05/31/80	FY79: $29,751	TOTAL: $29,751
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lee, C. A.	ARC/McCreight, C. R.	45-Elec Engr
Houck, J. R.	ARC/Lum, H.	

NSG 2399 **Cornell University** **2975**
Hydrogen and fatigue properties of steel

Period	Obligations	
08/15/79-08/14/80	FY79: $45,000	TOTAL: $45,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, H. H.	ARC/Nelson, H. G.	47-Materials Engr

NSG 2408 **Cornell University** **2976**
Aerobic biological waste treatment for closed ecological life support systems

Period	Obligations	
09/15/79-01/14/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shuler, M. L.	ARC/Wydeven, T. J.	39-Env Sci, NEC

NSG 3019 **Cornell University** **2977**
Flow processes in combustors

Period	Obligations	
07/01/74-07/31/81	FY79: $65,000	TOTAL: $456,102
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gouldin, F. C.	LERC/Marek, C. J.	41-Aero Engr
Leibovich, S.	LERC/Diehl, L. A.	
McLean, W. J.		

NSG 5060 **Cornell University** **2978**
Comparison between calculated gravity anomalies for dynamic processes in the mantle and observations

Period	Obligations	
04/01/75-09/30/79	FY79:	TOTAL: $110,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Turcotte, D. L.	GSFC/Cohen, S. C.	32-Geological Sci

NSG 6020 **Cornell University** **2979**
Rocket investigation of neutral atmosphere ionosphere coupling and planetary electrodynamics

Period	Obligations	
03/01/78-02/29/80	FY79: $57,048	TOTAL: $108,023
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wray, J. D.	WFC/Gray, J. W	19-Phys Sci, NEC
Henize, K. G.	WFC/Pless, R. H.	

NSG 7126 **Cornell University** **2980**
High spatial resolution multicolor observation of Neptune during occultation by the Moon

Period	Obligations	
01/01/75-03/31/79	FY79:	TOTAL: $108,428
Prin Invest	*NASA Tech Officer*	*CASE Category*
Veverka, J	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NSG 7156 **Cornell University** **2981**
Physical studies of planetary surfaces

Period	Obligations	
07/01/75-09/30/80	FY79: $44,231	TOTAL: $141,231
Prin Invest	*NASA Tech Officer*	*CASE Category*
Veverka, J	HQ-SL/Boyce, J. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NSG 7235 **Cornell University** **2982**
Light-induced amino acid transport by envelope vesicles of halobacterium halobium cells

Period	Obligations	
03/01/76-01/31/80	FY79:	TOTAL: $100,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
MacDonald, R. E.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7268 **Cornell University** **2983**
Gravitational time delay in orthogonally polarized radiation passing by the sun

Period	Obligations	
09/01/76-08/31/78	FY79:	TOTAL: $29,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harwit, M. O.	HQ-SL/Kochendorfer, F. D.	
	HQ-SC/Opp, A. G.	32-Geological Sci

NSG 7324 **Cornell University** **2984**
Bolometer system

Period	Obligations	
04/01/77-07/31/79	FY79: $28,370	TOTAL: $58,270
Prin Invest	*NASA Tech Officer*	*CASE Category*
Houck, J. R.	HQ-SC/Boggess, N. W.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7348 **Cornell University** **2985**
Analysis of erosion and transportation features from lunar orbiter and Apollo photography

Period	Obligations	
06/15/77-07/31/78	FY79:	TOTAL: $23,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gold, T.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7445 **Cornell University** **2986**
Consequences of past lunar tides, heating surface processes and orbital evolution

Period	Obligations	
04/01/78-04/30/80	FY79: $27,263	TOTAL: $48,863
Prin Invest	NASA Tech Officer	CASE Category
Burns, J. A.	HQ-SL/Quaide, W. E. HQ-SL/French, B. M.	31-Atmos Sci

NSG 7487 **Cornell University** **2987**
Astrophysical materials science theory

Period	Obligations	
10/01/78-09/30/79	FY79: $65,000	TOTAL: $65,000
Prin Invest	NASA Tech Officer	CASE Category
Ashcroft, N. W Oliva, J.	HQ-RS/Lundholm, J. G., Jr.	13-Physics

NSG 7488 **Cornell University** **2988**
Research on ultrapressure materials science

Period	Obligations	
10/01/78-09/30/79	FY79: $200,000	TOTAL: $200,000
Prin Invest	NASA Tech Officer	CASE Category
Ruoff, A. L.	HQ-RS/Lundholm, J. G., Jr.	47-Materials Engr

NSG 7498 **Cornell University** **2989**
Establish and operate a Spacecraft Planetary Imagery Facility (SPIF) at Cornell

Period	Obligations	
10/01/78-09/30/80	FY79: $85,247	TOTAL: $85,247
Prin Invest	NASA Tech Officer	CASE Category
Veverka, J.	HQ-SL/Boyce, J. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7529 **Cornell University** **2990**
Phylogeny of photosynthetic bacteria

Period	Obligations	
02/01/79-01/31/80	FY79: $9,363	TOTAL: $9,363
Prin Invest	NASA Tech Officer	CASE Category
Gibson, J.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7546 **Cornell University** **2991**
Participation in the Mars data analysis program: Global & regional studies of wind-indicators on the surface of Mars

Period	Obligations	
04/01/79-09/30/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	NASA Tech Officer	CASE Category
Veverka, J	HQ-SL/Boyce, J. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7547 **Cornell University** **2992**
Participation in the Mars data analysis comparative study of the surface of Phobos and Deimos

Period	Obligations	
03/01/79-09/30/80	FY79: $25,000	TOTAL: $25,000
Prin Invest	NASA Tech Officer	CASE Category
Veverka, J.	HQ-SL/Boyce, J. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7593 **Cornell University** **2993**
Dynamical studies of Phobos and Deimos

Period	Obligations	
03/01/79-02/29/80	FY79: $20,452	TOTAL: $20,452
Prin Invest	NASA Tech Officer	CASE Category
Burns, J. A.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7606 **Cornell University** **2994**
Effects of photometric geometry on spectral reflectance measurements

Period	Obligations	
05/01/79-04/30/80	FY79: $42,210	TOTAL: $42,210
Prin Invest	NASA Tech Officer	CASE Category
Veverka, J.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7612 **Cornell University** **2995**
Participation in the Mars data analysis program: Analysis of cloud forms in Viking and Mariner 9 images

Period	Obligations	
04/01/79-09/30/79	FY79: $20,000	TOTAL: $20,000
Prin Invest	NASA Tech Officer	CASE Category
Gierasch, P. J.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 2259 **Cornell University - Medical Center** **2996**
Central neural and neurochemical mechanisms subserving postural cardiovascular changes

Period	Obligations	
10/01/77-09/30/80	FY79: $50,000	TOTAL: $150,000
Prin Invest	NASA Tech Officer	CASE Category
Reis, D. J.	ARC/Keil, L. C.	59-Life Sci, NEC

NSG 5325 **Hunter College** **2997**
Monitoring tropical vegetation succession with LANDSAT data

Period	Obligations	
02/01/79-01/31/80	FY79: $10,727	TOTAL: $10,727
Prin Invest	NASA Tech Officer	CASE Category
Comer, J. C.	GSFC/Ungar, S. G.	32-Geological Sci

NAS 8-33099 **New York University** **2998**
Electrophoresis separation (77-E)

Period	Obligations	
08/21/78-05/05/79	FY79:	TOTAL: $5,354
Prin Invest	NASA Tech Officer	CASE Category
Johnson, A. J.	MSFC/Reeves, F. A. MSFC/Snyder, R. S.	59-Life Sci, NEC

NCA 2-525901 **New York University** **2999**
Application of high order accurate compact implicit methods to hyperbolic conservation laws

Period	Obligations	
06/01/79-08/31/79	FY79: $12,384	TOTAL: $12,384
Prin Invest	NASA Tech Officer	CASE Category
Harten, A.	ARC/Warming, R. F.	21-Mathematics

NGR 33-016-131 **New York University** **3000**
Hypersonic engine airplane integration
Period *Obligations*
02/27/68-12/31/79 FY79: $78,978 TOTAL: $1,275,478
Prin Invest *NASA Tech Officer* *CASE Category*
Agnone, A. M. LARC/Huber, P. W. 41-Aero Engr
LARC/Anderson, G. Y.

NGR 33-016-196 **New York University** **3001**
Physical properties of molecular clouds
Period *Obligations*
09/01/73-10/31/79 FY79: $35,850 TOTAL: $168,646
Prin Invest *NASA Tech Officer* *CASE Category*
Glassgold, A. E. HQ-SC/Roman, N. G. 13-Physics
HQ-SC/Rosendhal, J. D.

NGR 33-016-201 **New York University** **3002**
Study of transonic flow over yawed wings
Period *Obligations*
05/29/73-10/31/79 FY79: $50,000 TOTAL: $303,127
Prin Invest *NASA Tech Officer* *CASE Category*
Garabedian, P. R. ARC/Hicks, R. M. 41-Aero Engr
Jameson, A.
Bauer, F.

NSG 1444 **New York University** **3003**
An experimental and analytical investigation of the aerodynamics of a hypersonic vehicle
Period *Obligations*
08/01/77-03/31/80 FY79: $45,000 TOTAL: $227,987
Prin Invest *NASA Tech Officer* *CASE Category*
Zakkay, V. LARC/Edwards, C. L. 41-Aero Engr
Wang, C. R. LARC/Johnston, P. J.

NSG 1469 **New York University** **3004**
Scattering of acoustic waves by a body in motion
Period *Obligations*
12/01/77-05/31/80 FY79: $35,000 TOTAL: $70,000
Prin Invest *NASA Tech Officer* *CASE Category*
Ting, L. LARC/Liu, C. H. 41-Aero Engr
LARC/Maestrello, L.

NSG 1576 **New York University** **3005**
Nonlinear wave propagation and super boom analysis
Period *Obligations*
11/15/78-03/14/80 FY79: $35,750 TOTAL: $35,750
Prin Invest *NASA Tech Officer* *CASE Category*
Ting, L. LARC/Darden, C. M. 13-Physics
LARC/Carlson, H. W.

NSG 1579 **New York University** **3006**
Computational fluid dynamics on the star
Period *Obligations*
12/01/78-11/30/79 FY79: $150,000 TOTAL: $150,000
Prin Invest *NASA Tech Officer* *CASE Category*
Garabedian, P. R. LARC/South, J. C., Jr 21-Mathematics

NSG 1610 **New York University** **3007**
Definition and implementation of a compatible family of high level languages for coordination and control of concurrent and distributed processes in imbedded avionics and space applications
Period *Obligations*
04/15/79-04/14/80 FY79: $48,250 TOTAL: $48,250
Prin Invest *NASA Tech Officer* *CASE Category*
Schwartz, J. T. LARC/Knight, J. C 21-Mathematics
LARC/Harris, J. L

NSG 3059 **New York University** **3008**
Analysis of experiments on hydrodynamics instability in the absence of gravity
Period *Obligations*
06/01/75-12/31/79 FY79: $5,000 TOTAL: $61,614
Prin Invest *NASA Tech Officer* *CASE Category*
Keller, J. B. LERC/Labus, T. L. 49-Engr, NEC

NSG 5034 **New York University** **3009**
Research program in climatology and meteorology
Period *Obligations*
01/01/75-11/30/79 FY79: $122,000 TOTAL: $423,113
Prin Invest *NASA Tech Officer* *CASE Category*
Isaacson, E. GSFC/Halem, M. 31-Atmos Sci
Stoker, J. J., Jr.

NSG 5130 **New York University** **3010**
Short-term numerical weather prediction and very long term climate modeling
Period *Obligations*
10/01/76-09/30/81 FY79: $50,000 TOTAL: $70,312
Prin Invest *NASA Tech Officer* *CASE Category*
Isaacson, E. GSFC/Halem, M 31-Atmos Sci
Ghil, M.

NSG 5133 **New York University** **3011**
Air/sea interaction analysis applied to SEASAT data algorithm
Period *Obligations*
10/01/76-01/31/79 FY79: TOTAL: $88,094
Prin Invest *NASA Tech Officer* *CASE Category*
Hoffert, M. I. GSFC/Halem, M 39-Env Sci, NEC

NSG 5411 **New York University** **3012**
Multifrequency observations of selected galaxies and extragalactic sources
Period *Obligations*
10/01/79-09/30/80 FY79: $5,000 TOTAL: $5,000
Prin Invest *NASA Tech Officer* *CASE Category*
Huggins, P. J. GSFC/Boggess, A 11-Astronomy

NSG 7591 **New York University** **3013**
Modeling the Viking boundary layer and soil thermal measurements on Mars

Period	Obligations	
03/01/79-10/31/79	FY79: $15,000	TOTAL: $15,000

Prin Invest	NASA Tech Officer	CASE Category
Hoffert, M. I.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7636 **New York University** **3014**
Conduct research on the effectiveness of government-sponsored civilian research and development

Period	Obligations	
07/01/79-05/30/81	FY79: $168,524	TOTAL: $168,524

Prin Invest	NASA Tech Officer	CASE Category
Fusfeld, H. I. Nelson, R. R.	HQ-ET/Roberson, F. I. HQ-ET/Ault, L. A.	99-Multi-Discip

NAS 5-25076 **Polytechnic Institute of New York** **3015**
Wave propagation study

Period	Obligations	
06/01/78-04/01/79	FY79:	TOTAL: $15,700

Prin Invest	NASA Tech Officer	CASE Category
Gross, S. H.	GSFC/Pirraglia, J. A	31-Atmos Sci

NGR 33-006-068 **Polytechnic Institute of New York** **3016**
Study of escape of gases from comets, planets, and satellites

Period	Obligations	
12/26/72-12/31/78	FY79:	TOTAL: $198,118

Prin Invest	NASA Tech Officer	CASE Category
Gross, S. H.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 33-006-070 **Polytechnic Institute of New York** **3017**
Synthesis of polypeptides, sugar phosphates and polynucleotides from intermediates under simulated conditions

Period	Obligations	
04/26/73-06/14/80	FY79: $49,955	TOTAL: $319,903

Prin Invest	NASA Tech Officer	CASE Category
Eirich, F. R.	HQ-SB/Young, R. S.	12-Chemistry

NSG 1248 **Polytechnic Institute of New York** **3018**
Calculation of supersonic flow past aircraft with shocks

Period	Obligations	
10/01/75-10/31/79	FY79: $60,016	TOTAL: $217,991

Prin Invest	NASA Tech Officer	CASE Category
Moretti, G.	LARC/Salas, M. D.	41-Aero Engr

NSG 1559 **Polytechnic Institute of New York** **3019**
Spine collocation for viscous flow over after body configurations

Period	Obligations	
11/01/78-10/31/79	FY79:	TOTAL: $32,992

Prin Invest	NASA Tech Officer	CASE Category
Rubin, S. G.	LARC/Swanson, R. C. LARC/Putnam, L. E.	41-Aero Engr

NSG 2147 **Polytechnic Institute of New York** **3020**
Exploratory synthesis of new fire-safe polymeric materials

Period	Obligations	
05/01/76-05/31/80	FY79: $43,664	TOTAL: $236,588

Prin Invest	NASA Tech Officer	CASE Category
Pearce, E. M. Zeldin, M. Emert, J.	ARC/Fohlen, G. M. ARC/Heimbuch, A. H.	12-Chemistry

NSG 2361 **Polytechnic Institute of New York** **3021**
The study of epoxy blends and catalysts

Period	Obligations	
01/01/79-09/30/79	FY79: $39,968	TOTAL: $39,968

Prin Invest	NASA Tech Officer	CASE Category
Pearce, E. M.	ARC/Fohlen, G. M. ARC/Parker, J. A.	12-Chemistry

NSG 2368 **Polytechnic Institute of New York** **3022**
Characteristic theory and high frequency approximations in helicopter acoustics

Period	Obligations	
02/01/79-01/31/80	FY79: $35,000	TOTAL: $35,000

Prin Invest	NASA Tech Officer	CASE Category
Isom, M.	ARC/Schmitz, F. H. ARC/Yu, Y. H.	41-Aero Engr

NSG 3108 **Polytechnic Institute of New York** **3023**
Application of Raman diagnostics to combustion

Period	Obligations	
06/01/76-05/31/79	FY79:	TOTAL: $47,987

Prin Invest	NASA Tech Officer	CASE Category
Lederman, S.	LERC/Will, H. A.	13-Physics

NSG 5284 **Polytechnic Institute of New York** **3024**
A morphological study of waves in the thermosphere

Period	Obligations	
07/01/78-07/31/80	FY79: $23,000	TOTAL: $47,652

Prin Invest	NASA Tech Officer	CASE Category
Gross, S. H. Reber, C. A	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 7321 **Queens College** **3025**
Phase stability and elastic wave velocity determinations for stoichiometric FeS

Period	Obligations	
02/01/77-11/30/78	FY79: $45,000	TOTAL: $119,578

Prin Invest	NASA Tech Officer	CASE Category
Takahashi, T.	HQ-SL/Quaide, W. L.	32-Geological Sci

NCA 2-625902 **Queensborough Community College** **3026**
Analysis of interaction of age, sex, and bed rest deconditioning on cardiovascular parameters and predictive indices

Period	Obligations	
01/01/79-12/01/80	FY79: $18,426	TOTAL: $18,426

Prin Invest	NASA Tech Officer	CASE Category
Yuster, R	ARC/Goldwater, D ARC/Sandler, H.	56-Medical Sciences

NAS 8-26146 **Rensselaer Polytechnic Institute** **3027**
Growth of single crystals by vapor transport in zero gravity environment

Period	*Obligations*	
06/04/70-10/06/78	FY79:	TOTAL: $262,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Wiedmann, H.	MSFC/Davidson, M. C.	
	MSFC/Thomas, P. E.	47-Materials Engr

NAS 8-32425 **Rensselaer Polytechnic Institute** **3028**
Dentritic solidification at small supercooling

Period	*Obligations*	
03/01/77-11/30/79	FY79:	TOTAL: $119,900

Prin Invest	*NASA Tech Officer*	*CASE Category*
Glicksman, M. E.	MSFC/Reeves, F. A.	47-Materials Engr
	MSFC/Chassay, R. P.	

NAS 8-32639 **Rensselaer Polytechnic Institute** **3029**
Space processing crystal growth from the vapor phase

Period	*Obligations*	
09/20/77-12/31/78	FY79:	TOTAL: $37,689

Prin Invest	*NASA Tech Officer*	*CASE Category*
Wiedemeier, H.	MSFC/Davidson, M. C.	
	MSFC/Thomas, P. E.	19-Phys Sci, NEC

NAS 8-32690 **Rensselaer Polytechnic Institute** **3030**
Solidification processes involving solutes

Period	*Obligations*	
07/24/78-10/31/79	FY79: $1,000	TOTAL: $62,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Glicksman, M. E.	MSFC/Reeves, F. A.	12-Chemistry
	MSFC/Lacy, L. L.	

NAS 8-32936 **Rensselaer Polytechnic Institute** **3031**
Vapor growth of alloy-type semiconductor crystals experiment

Period	*Obligations*	
03/20/78-03/20/83	FY79: $127,000	TOTAL: $279,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Wiedemeier, H.	MSFC/Williams, J. R.	47-Materials Engr
Davidson, M. C.	MSFC/Davidson, M. C.	
Irene, E. A.		

NAS 8-33074 **Rensselaer Polytechnic Institute** **3032**
Study nucleation and growth of immiscible phases

Period	*Obligations*	
06/01/78-09/30/79	FY79:	TOTAL: $32,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Ross, S.	MSFC/Lacy, L. L.	13-Physics
Ross, S.	MSFC/Witherow, W. K.	
Nishioka, G.		

NASW 3279 **Rensselaer Polytechnic Institute** **3033**
Data acquisition and path selection decision making for an autonomous roving vehicle

Period	*Obligations*	
03/01/79-02/28/80	FY79: $40,600	TOTAL: $40,600

Prin Invest	*NASA Tech Officer*	*CASE Category*
Yerazunis, S. W.	HQ-RT/Gevarter, W. B.	31-Atmos Sci

NGL 33-018-003 **Rensselaer Polytechnic Institute** **3034**
Interdisciplinary materials research including fundamental physics & chemistry of materials, environmental effects, and related problems

Period	*Obligations*	
09/01/70-04/30/82	FY79: $400,000	TOTAL: $5,709,400

Prin Invest	*NASA Tech Officer*	*CASE Category*
Wiberly, S. E.	HQ-RW/Gilstad, D. A.	
Ansell, G. S.	HQ-RW/Salkind, M. J.	47-Materials Engr

NGL 33-018-007 **Rensselaer Polytechnic Institute** **3035**
Investigation of composition & chemical behavior of atmosphere of Venus

Period	*Obligations*	
06/19/62-08/31/80	FY79:	TOTAL: $1,487,400

Prin Invest	*NASA Tech Officer*	*CASE Category*
Harteck, P.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 33-018-148 **Rensselaer Polytechnic Institute** **3036**
Photochemical investigations of the atmosphere of other planets

Period	*Obligations*	
08/27/70-10/31/79	FY79: $43,690	TOTAL: $346,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Ferris, J. P.	HQ-SB/Young, R. S.	12-Chemistry

NSG 1510 **Rensselaer Polytechnic Institute** **3037**
Improved high modulus carbon fibers

Period	*Obligations*	
04/01/78-09/30/79	FY79: $75,850	TOTAL: $282,150

Prin Invest	*NASA Tech Officer*	*CASE Category*
Ansell, G. S.	LARC/Swann, R. T.	47-Materials Engr
	LARC/Brewer, W. D.	

NSG 1624 **Rensselaer Polytechnic Institute** **3038**
Investigation of passive shock wave-boundary layer control for transonic airfoil drag reduction

Period	*Obligations*	
10/01/79-09/30/80	FY79: $50,000	TOTAL: $50,000

Prin Invest	*NASA Tech Officer*	*CASE Category*
Nagamatsu, H. T.	LARC/Barnwell, R. W.	41-Aero Engr
Brower, W. B.	LARC/Whitcomb, R. T.	

NSG 1628 **Rensselaer Polytechnic Institute** **3039**
Free-electron laser from wave mechanical beats of two electron beams

Period	Obligations	
07/01/79 06/30/80	FY79: $42,200	TOTAL: $42,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schwarz, H. J.	LARC/Meador, W. E., Jr. LARC/Hohl, F.	13-Physics

NSG 1636 **Rensselaer Polytechnic Institute** **3040**
Preliminary study on the potential usefulness of array processor techniques for structural synthesis

Period	Obligations	
07/15/79-02/14/80	FY79: $19,995	TOTAL: $19,995
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feeser, L. J.	LARC/Rogers, J. L. LARC/Giles, G. L.	44-Civil Engr

NSG 3170 **Rensselaer Polytechnic Institute** **3041**
Determination of physical and chemical states of lubricants in concentrated contacts using infrared Fourier transform spectroscopy

Period	Obligations	
01/01/78-01/01/80	FY79: $39,990	TOTAL: $75,990
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lauer, J. L.	LERC/Jones, W. R., Jr.	13-Physics

NSG 3262 **Rensselaer Polytechnic Institute** **3042**
Suggested programs for unsteady turbine heat transfer

Period	Obligations	
05/01/79-04/30/80	FY79: $60,520	TOTAL: $60,520
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mayle, R. E.	LERC/Simoneau, R. J. LERC/Graham, R. W.	41-Aero Engr

NSG 7065 **Rensselaer Polytechnic Institute** **3043**
Structure-function studies on bacillus stearothermophilus

Period	Obligations	
06/ '74-08/30/79	FY79:	TOTAL: $82,650
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sweller, F. C.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7184 **Rensselaer Polytechnic Institute** **3044**
Data acquisition and path selection decision making for an autonomous roving vehicle

Period	Obligations	
11/01/75-02/28/79	FY79:	TOTAL: $99,992
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shen, C. N. Yerazunis, S. W.	HQ-RE/Gevarter, W. B. JPL/Paine, G.	19-Phys Sci, NEC

NSG 7345 **Rensselaer Polytechnic Institute** **3045**
Biological adaptation to low temperature: A study of the molecular mechanism governing the responses of the protein synthesizing apparatuses to low temperature

Period	Obligations	
04/01/77-09/30/79	FY79:	TOTAL: $69,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pope, D. H.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 7369 **Rensselaer Polytechnic Institute** **3046**
Autonomous control of roving vehicles for unmanned exploration of the planets

Period	Obligations	
06/01/77-08/31/79	FY79:	TOTAL: $80,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yerazunis, S. W.	HQ-RE/Gevarter, W. B. JPL/Paine, G.	49-Engr, NEC

NSG 2380 **Rockefeller University** **3047**
Vestibulocollic reflexes of otolith origin

Period	Obligations	
04/01/79-03/31/80	FY79: $35,354	TOTAL: $35,354
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilson, V. J.	ARC/Daunton, N. G.	51-Biological Sci

NAS 8-32485 **State Univ of New York - Albany** **3048**
Skylab contamination results experiments

Period	Obligations	
06/16/77-12/15/77	FY79:	TOTAL: $13,893
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schuerman, D.	MSFC/Clifton, K. S. MSFC/Shriver, E. L.	31-Atmos Sci

NAS 8-32893 **State Univ of New York - Albany** **3049**
Night-time and daytime orbital survey of lightning and convective phenomena experiment support

Period	Obligations	
05/03/78-05/02/80	FY79: $15,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vonnegut, B.	MSFC/Vaughan, O.H. MSFC/Anderson, B. J.	39-Env Sci, NEC

NAS 8-32947 **State Univ of New York - Albany** **3050**
Static tube zero g electrophoresis of human pancreatic islets of Langerhans cells

Period	Obligations	
04/07/78-11/14/80	FY79: $45,800	TOTAL: $133,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanOss, C. J.	MSFC/Williams, J. R. MSFC/Snyder, R. S.	59-Life Sci, NEC

NAS 8-33380 **State Univ of New York - Albany** **3051**
Remote observations of severe storms

Period	Obligations	
04/30/79-04/29/80	FY79: $78,612	TOTAL: $78,612
Prin Invest	*NASA Tech Officer*	*CASE Category*
Orville, R. E.	MSFC/Turner, R. E. MSFC/Thomas, P. E.	31-Atmos Sci

NAS 9-15802 State Univ of New York - Albany 3052
Research study of non-invasive monitoring of cardio-pulmonary function

Period	Obligations	
05/01/79-04/30/80	FY79: $48,174	TOTAL: $48,174

Prin Invest	NASA Tech Officer	CASE Category
Farhi, L. E.	JSC/Horrigan, D. J.	59-Life Sci, NEC
Olszowka, A. J.		

NSG 2386 State Univ of New York - Albany 3053
Identification of tropospheric and stratospheric air by tracer

Period	Obligations	
05/01/79-04/30/80	FY79: $30,000	TOTAL: $30,000

Prin Invest	NASA Tech Officer	CASE Category
Lazrus, A. L.	ARC/Page, W. A.	31-Atmos Sci

NSG 3095 State Univ of New York - Albany 3054
Fundamentals of radiation tolerance in silicon solar cells

Period	Obligations	
01/26/76-04/25/80	FY79: $65,000	TOTAL: $195,000

Prin Invest	NASA Tech Officer	CASE Category
Corbett, J. W.	LERC/Weinberg, I.	39-Env Sci, NEC
	LERC/Brandhorst, H. W., Jr.	

NSG 3138 State Univ of New York - Albany 3055
Analysis of global air sampling program data

Period	Obligations	
01/10/77-03/10/80	FY79: $74,999	TOTAL: $225,922

Prin Invest	NASA Tech Officer	CASE Category
Falconer, P.	LERC/Holdeman, J. D.	31-Atmos Sci
Pratt, R.		

NSG 5274 State Univ of New York - Albany 3056
Global tectonic studies

Period	Obligations	
05/15/78-11/14/79	FY79:	TOTAL: $34,964

Prin Invest	NASA Tech Officer	CASE Category
Burke, K.	GSFC/Frey, H. V.	32-Geological Sci
DeLong, S. E.	GSFC/Mead, G. D.	
Dewey, J. F.		

NSG 7093 State Univ of New York - Albany 3057
Photoelectric studies of the night glow

Period	Obligations	
12/23/74-11/01/79	FY79: $63,398	TOTAL: $220,803

Prin Invest	NASA Tech Officer	CASE Category
Weinberg, J. L.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 7222 State Univ of New York - Albany 3058
Two-dimensional transport and aerosol model

Period	Obligations	
02/01/76-09/30/78	FY79:	TOTAL: $77,560

Prin Invest	NASA Tech Officer	CASE Category
Kiang, C. S.	HQ-ST/Greenwood, L. R.	31-Atmos Sci
Mohnen, V. A.	HQ-ST/Tilford, S. G.	

NSG 7241 State Univ of New York - Albany 3059
Studies of background starlight

Period	Obligations	
07/01/76-11/30/79	FY79: $29,136	TOTAL: $70,136

Prin Invest	NASA Tech Officer	CASE Category
Weinberg, J. L.	HQ-SC/Weiler, E. J.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7501 State Univ of New York - Albany 3060
Radiation induced rotation of small celestial bodies

Period	Obligations	
11/15/78-10/31/79	FY79: $39,612	TOTAL: $39,612

Prin Invest	NASA Tech Officer	CASE Category
Ratcliff, K. F.	HQ-RT/Randolph, L. P.	42-Astro Engr
	GSFC/Paddock, S. J.	

NSG 8040 State Univ of New York - Albany 3061
Research study of data analysis, Skylab Zodiacal light experiment

Period	Obligations	
06/28/76-11/01/79	FY79: $52,465	TOTAL: $141,059

Prin Invest	NASA Tech Officer	CASE Category
Weinberg, J. L.	MSFC/Gary, G. A.	11-Astronomy
	MSFC/Miller, E. R.	

NGR 33-015-108 State Univ of New York - Buffalo 3062
Planetary curriculum and related geologic research

Period	Obligations	
06/02/70-01/31/80	FY79: $80,824	TOTAL: $365,386

Prin Invest	NASA Tech Officer	CASE Category
King, J. S.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NSG 7071 State Univ of New York - Buffalo 3063
Experimental and theoretical investigation for the suppression of plasma arc drops in thermionic converters

Period	Obligations	
07/01/74-04/15/78	FY79:	TOTAL: $250,928

Prin Invest	NASA Tech Officer	CASE Category
Shaw, D. T.	LERC/Morris, J. F.	13-Physics

NAS 1-10493 State Univ of New York - Stony Brook 3064
Participation in the science planning for the Viking 1975 missions in the area of molecular analysis

Period	Obligations	
01/18/71-03/31/79	FY79:	TOTAL: $182,288

Prin Invest	NASA Tech Officer	CASE Category
Owen, T.	LARC/Williams, T. S., Jr.	
	LARC/Glenny, W. R.	39-Env Sci, NEC

NAS 2-10150 State Univ of New York - Stony Brook 3065
Carrot tissue development during spaceflight

Period	Obligations	
02/01/79-07/31/80	FY79: $34,250	TOTAL: $34,250

Prin Invest	NASA Tech Officer	CASE Category
Krikorian, A. D.	ARC/Souza, K. A.	51-Biological Sci
Steward, F. C.	ARC/Chetirkin, P. V.	

NAS 8-32904 **State Univ of New York - Stony Brook** **3066**
Scientific investigations in support of the space telescope project

Period	Obligations	
02/01/78-01/31/84	FY79: $13,500	TOTAL: $139,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Caldwell, J. J.	MSFC/O'Dell, C. R.	11-Astronomy

NCA 2-760801 **State Univ of New York - Stony Brook** **3067**
Laboratory spectroscopy at ultralong path-lengths

Period	Obligations	
10/01/77-09/30/79	FY79: $5,077	TOTAL: $16,077
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boudart, M.	ARC/Boese, R. W. ARC/Chang, S.	19-Phys Sci, NEC

NCA 2-760901 **State Univ of New York - Stony Brook** **3068**
An investigation of the photochemistry of the atmospheres of Jupiter and Titan

Period	Obligations	
02/01/79-01/31/80	FY79: $19,550	TOTAL: $19,550
Prin Invest	*NASA Tech Officer*	*CASE Category*
Owen, T. Scattergood, T.	ARC/Chang, S.	12-Chemistry

NCC 3 2 **State Univ of New York - Stony Brook** **3069**
Analytic modeling of soot formation under fuel-rich conditions

Period	Obligations	
07/01/79-06/30/80	FY79: $34,990	TOTAL: $34,990
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yang, C. H. Berlad, A. L.	LERC/Brabbs, T. A.	12-Chemistry

NCC 5 7 **State Univ of New York - Stony Brook** **3070**
Atmospheric pollution: Development and application

Period	Obligations	
04/09/79-11/30/79	FY79: $43,000	TOTAL: $43,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hogan, J. S. Hameed, S.	GSFC/Stewart, R. W.	31-Atmos Sci

NGL 33-015-130 **State Univ of New York - Stony Brook** **3071**
Lunar sample analysis

Period	Obligations	
02/11/71-01/31/81	FY79: $47,543	TOTAL: $954,840
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bence, A. E. Lindsley, D. H.	JSC/Harris, J. W.	13-Physics

NGL 33-015-174 **State Univ of New York - Stony Brook** **3072**
Lunar sample analysis

Period	Obligations	
02/01/73-01/31/80	FY79: $44,345	TOTAL: $570,396
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schaeffer, O. A.	JSC/Harris, J. W.	12-Chemistry

NGR 33-015-139 **State Univ of New York - Stony Brook** **3073**
Quantitative spectroscopic measurements on the principal constituents in planetary atmospheres

Period	Obligations	
04/12/71-05/31/81	FY79: $15,434	TOTAL: $279,524
Prin Invest	*NASA Tech Officer*	*CASE Category*
Varanasi, P.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NGR 33-015-141 **State Univ of New York - Stony Brook** **3074**
Spectroscopic observations of the planets

Period	Obligations	
01/26/71-12/31/79	FY79: $28,740	TOTAL: $232,211
Prin Invest	*NASA Tech Officer*	*CASE Category*
Owen, T.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NGR 33-015-165 **State Univ of New York - Stony Brook** **3075**
Planetary atmospheres research

Period	Obligations	
11/01/72-12/31/79	FY79: $154,954	TOTAL: $507,420
Prin Invest	*NASA Tech Officer*	*CASE Category*
Owen, T.	GSFC/Hansen, J. E.	31-Atmos Sci

NGR 33-015-180 **State Univ of New York - Stony Brook** **3076**
Cosmic rays in interplanetary space

Period	Obligations	
01/07/74-09/30/79	FY79: $1	TOTAL: $99,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Forman, M. A.	HQ-SC/Fishman, G. J. HQ-SC/Opp, A. G.	11-Astronomy

NSG 3051 **State Univ of New York - Stony Brook** **3077**
Combustion of porous solids at reduced gravitational conditions

Period	Obligations	
06/01/75-06/30/79	FY79: $500	TOTAL: $77,203
Prin Invest	*NASA Tech Officer*	*CASE Category*
Berlad, A. L.	LERC/Cochran, T. H.	43-Chem Engr

NSG 3298 **State Univ of New York - Stony Brook** **3078**
Combustion theory for clouds of porous solids at reduced gravitational conditions

Period	Obligations	
10/01/79-09/30/80	FY79: $40,000	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Berlad, A. L.	LERC/Cochran, T. H.	13-Physics

NSG 5102 **State Univ of New York - Stony Brook** **3079**
Atmospheric pollution development and applications of regional scale dispersion models

Period	Obligations	
03/01/76-04/30/79	FY79:	TOTAL: $189,458
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hogan, J. S.	GSFC/Stewart, R. W.	31-Atmos Sci

NSG 5125 **State Univ of New York - Stony Brook** **3080**
Research of thin-film Josephson-junction detector for millimeter and submillimeter wavelength applications

Period	Obligations	
11/01/76-06/30/79	FY79:	TOTAL: $42,101
Prin Invest	NASA Tech Officer	CASE Category
Kao, Y. H.	GSFC/Kerr, A. R. GSFC/Thaddeus, P.	11-Astronomy

NSG 5250 **State Univ of New York - Stony Brook** **3081**
Ultraviolet observations of planets, satellites and comets with International Ultraviolet Explorer

Period	Obligations	
03/01/78-06/30/80	FY79: $7,000	TOTAL: $23,993
Prin Invest	NASA Tech Officer	CASE Category
Caldwell, J. J. Owen, T. Ponnamperuma, C. A.	GSFC/Boggess, A GSFC/West, D. K.	11-Astronomy

NSG 5271 **State Univ of New York - Stony Brook** **3082**
Forecasting research to access the role of differential advection as a severe storm predictor

Period	Obligations	
04/15/78-04/14/79	FY79:	TOTAL: $21,000
Prin Invest	NASA Tech Officer	CASE Category
Atlas, R. M.	GSFC/Adler, R. F.	31-Atmos Sci

NSG 7003 **State Univ of New York - Stony Brook** **3083**
Research in grating technology and related areas

Period	Obligations	
11/01/73-12/31/79	FY79:	TOTAL: $83,999
Prin Invest	NASA Tech Officer	CASE Category
Stroke, G. W.	HQ-ST/Timothy, A. F.	11-Astronomy

NSG 7270 **State Univ of New York - Stony Brook** **3084**
Cells, embryos and development in space

Period	Obligations	
09/01/76-10/31/79	FY79: $61,800	TOTAL: $191,800
Prin Invest	NASA Tech Officer	CASE Category
Krikorian, A. D. Steward, F. C.	HQ-SB/Halstead, T. W. HQ-SB/Gelb, G. S.	51-Biological Sci

NSG 7286 **State Univ of New York - Stony Brook** **3085**
Infrared spectroscopy of Jupiter and Saturn

Period	Obligations	
09/01/76-05/31/80	FY79: $36,435	TOTAL: $71,730
Prin Invest	NASA Tech Officer	CASE Category
Knacke, R. F.	HQ-SL/Brunk, W. E. HQ-SL/Murphy, R. E.	11-Astronomy

NSG 7320 **State Univ of New York - Stony Brook** **3086**
Theoretical planetary physics

Period	Obligations	
04/01/77-04/30/80	FY79: $28,473	TOTAL: $78,410
Prin Invest	NASA Tech Officer	CASE Category
Caldwell, J. J.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7553 **State Univ of New York - Stony Brook** **3087**
Outer solar system nomenclature

Period	Obligations	
04/01/79-03/31/80	FY79: $10,821	TOTAL: $10,821
Prin Invest	NASA Tech Officer	CASE Category
Owen, T.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 9013 **State Univ of New York - Stony Brook** **3088**
Dating of lunar cratering events and rates of lunar surface processes

Period	Obligations	
07/15/74-01/31/80	FY79: $6,000	TOTAL: $308,669
Prin Invest	NASA Tech Officer	CASE Category
Hartung, J. B.	JSC/Harris, J. W.	32-Geological Sci

NSG 9044 **State Univ of New York - Stony Brook** **3089**
Petrologic and stratigraphic studies of lunar drill cores and drive tubes

Period	Obligations	
09/01/76-01/31/81	FY79: $44,763	TOTAL: $332,741
Prin Invest	NASA Tech Officer	CASE Category
Papike, J. J.	JSC/Harris, J. W.	13-Physics

NCA 2-765801 **State Univ of New York - Upstate Med Ctr** **3090**
Space flight associated alterations in erythrocyte membranes

Period	Obligations	
06/01/78-05/31/80	FY79: $19,980	TOTAL: $39,960
Prin Invest	NASA Tech Officer	CASE Category
Landaw, S. A.	ARC/Leon, H. A.	56-Medical Sciences

NSG 5077 **State Univ of New York College - Purchase** **3091**
Spectral and Monte Carlo predictability studies

Period	Obligations	
09/01/75-04/30/80	FY79: $26,363	TOTAL: $71,220
Prin Invest	NASA Tech Officer	CASE Category
Tenenbaum, J.	GSFC/Halem, M.	31-Atmos Sci

NSG 1602 **Syracuse University** **3092**
Advanced programmable image sensor/processor

Period	Obligations	
03/15/79-03/14/80	FY79: $51,281	TOTAL: $51,281
Prin Invest	NASA Tech Officer	CASE Category
Kowel, S. T. Kornreich, P. G.	LARC/Benz, H. F. LARC/Breckenridge, R. A.	45-Elec Engr

NSG 1611 **Syracuse University** **3093**
Surface Acoustic Waves (SAW)/silicon monolithic programmable sensor/processor

Period	Obligations	
05/01/79-04/30/80	FY79: $75,224	TOTAL: $75,224
Prin Invest	NASA Tech Officer	CASE Category
Kowel, S. T. Kornreich, P. G.	LARC/Segura, R.	45-Elec Engr

NEW YORK (Continued)

NSG 1654 — **Syracuse University** — **3094**
Magnetization changes in small volume elements by stress control

Period	Obligations	
09/01/79-08/31/80	FY79: $32,495	TOTAL: $32,495

Prin Invest	NASA Tech Officer	CASE Category
Schroder, K.	LARC/Hayes, P. J.	47-Materials Engr

NGR 33-032-004 — **Union College** — **3095**
Optically pumped submillimeter waveguide maser amplifiers and oscillators

Period	Obligations	
04/15/74-04/14/78	FY79:	TOTAL: $80,745

Prin Invest	NASA Tech Officer	CASE Category
Galantowicz, A.	GSFC/McAvoy, N. GSFC/McElroy, J. H.	13-Physics

NAS 8-33328 — **University of Rochester** — **3096**
Optical photometry and area spectrophotometry

Period	Obligations	
02/13/79-02/12/80	FY79: $13,632	TOTAL: $13,632

Prin Invest	NASA Tech Officer	CASE Category
Duthie, J. G. McMillan, R. S.	MSFC/Jones, J. B., Jr	11-Astronomy

NSG 2198 — **University of Rochester** — **3097**
Energy transfer between molecular collision systems and laser radiation fields

Period	Obligations	
12/31/76-12/31/79	FY79: $15,000	TOTAL: $145,408

Prin Invest	NASA Tech Officer	CASE Category
George, T. F.	ARC/Stallcop, J. R.	13-Physics

NSG 2343 — **University of Rochester** — **3098**
Determination of a galactic gradient: Measurements of the fine structure lines of AR-II, and S-III in galactic H-II regions

Period	Obligations	
10/01/78-10/31/79	FY79: $27,418	TOTAL: $27,418

Prin Invest	NASA Tech Officer	CASE Category
Pipher, J. L. Helfer, H. L.	ARC/Haughney, L. C.	11-Astronomy

NSG 5329 — **University of Rochester** — **3099**
Investigation of the far ultraviolet spectrum of Sirius B

Period	Obligations	
01/17/79-07/31/79	FY79: $853	TOTAL: $853

Prin Invest	NASA Tech Officer	CASE Category
Savedoff, M. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5354 — **University of Rochester** — **3100**
Search for coronal features or circumstellar clouds around Sirius

Period	Obligations	
06/01/79-05/31/80	FY79: $7,008	TOTAL: $7,008

Prin Invest	NASA Tech Officer	CASE Category
Savedoff, M. P VanHorn, H. M.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 7562 — **University of Rochester** — **3101**
Basic research in sunspot dynamics

Period	Obligations	
10/01/78-09/30/80	FY79: $19,000	TOTAL: $19,000

Prin Invest	NASA Tech Officer	CASE Category
Thomas, J. H.	HQ-ST/Bohlin, J. D.	13-Physics

NSG 5123 — **Yeshiva University** — **3102**
Investigation of the topographical features of surface carrier concentrations and lifetime determinations in silicon solar cells

Period	Obligations	
10/01/76-10/30/78	FY79.	TOTAL: $49,524

Prin Invest	NASA Tech Officer	CASE Category
Pollak, F.	LERC/Godlewski, M. P.	45-Elec Engr

NSG 7454 — **York College** — **3103**
Irradiation effects on surface of Moon, Mercury, Asteroids and solar system bodies

Period	Obligations	
06/01/78-05/31/80	FY79: $33,849	TOTAL: $64,429

Prin Invest	NASA Tech Officer	CASE Category
Spergel, M. S.	HQ-SL/Quaide, W. L. HQ-LU/Pohly, J. G	13-Physics

NORTH CAROLINA

NAS 5-25351 — **Duke University** — **3104**
Dynamics Explorer power subsystem study

Period	Obligations	
09/25/78-08/30/79	FY79:	TOTAL: $15,000

Prin Invest	NASA Tech Officer	CASE Category
Wilson, T. G. Owen, H.	GSFC/Rodriquez, G. E	45-Elec Engr

NGL 34-001-001 — **Duke University** — **3105**
Research on satellite electrical power conversion systems and circuit protection

Period	Obligations	
02/19/75-02/28/79	FY79:	TOTAL: $966,031

Prin Invest	NASA Tech Officer	CASE Category
Wilson, T. G.	GSFC/Rodriguez, G. E. GSFC/Pasciutti, E. R.	45-Elec Engr

NSG 1647 — **Duke University** — **3106**
Improvement of nonlinear transient analysis efficiency

Period	Obligations	
09/01/79-11/30/80	FY79: $42,189	TOTAL: $42,189

Prin Invest	NASA Tech Officer	CASE Category
Melosh, R. J.	LARC/Hayduk, R. J. LARC/Thomson, R. G.	49-Engr, NEC

NSG 3157 **Duke University** **3107**
Design feasibility of high-power lightweight dc-to-dc converters for space power applications

Period	Obligations	
07/01/77-05/31/80	FY79: $105,000	TOTAL: $223,000

Prin Invest	NASA Tech Officer	CASE Category
Wilson, T. G.	LERC/Gruber, R. P.	45-Elec Engr

NSG 3160 **Duke University** **3108**
Acceleration of convergence

Period	Obligations	
06/01/77-05/31/80	FY79: $13,502	TOTAL: $34,985

Prin Invest	NASA Tech Officer	CASE Category
Smith, D. A.	LERC/Ford, W. F.	21-Mathematics

NSG 7540 **Duke University** **3109**
Millimeter and submillimeter spectroscopy of molecules of atmospheric importance

Period	Obligations	
03/01/79-02/28/80	FY79: $43,659	TOTAL: $43,659

Prin Invest	NASA Tech Officer	CASE Category
DeLucia, F. C.	HQ-ST/Kakar, R. K. HQ-ST/Seals, R. K., Jr.	31-Atmos Sci

NAS 5-24101 **North Carolina A&T State University** **3110**
Feasibility study for conducting experimental research in curriculum sharing

Period	Obligations	
04/14/77-08/13/78	FY79:	TOTAL: $30,000

Prin Invest	NASA Tech Officer	CASE Category
Williams, L. J	GSFC/Henry, V.	45-Elec Engr

NSG 1296 **North Carolina A&T State University** **3111**
Effect of temperature on composite sandwich structures subjected to low velocity impact

Period	Obligations	
05/17/76-08/16/79	FY79:	TOTAL: $76,617

Prin Invest	NASA Tech Officer	CASE Category
Sharma, A. V.	LARC/Rhodes, M.D. LARC/Mikulas, M. M., Jr.	47-Materials Engr

NSG 1390 **North Carolina A&T State University** **3112**
Material growth and characterization of III-V compounds for solid state devices

Period	Obligations	
02/01/77-01/31/80	FY79: $150,000	TOTAL: $450,000

Prin Invest	NASA Tech Officer	CASE Category
Stefanakos, E. Alexander, W. E. Collis, W.	LARC/Hutchby, J. A. LARC/Hendricks, H. D.	45-Elec Engr

NSG 1516 **North Carolina A&T State University** **3113**
Patterns of residual stresses within complex welded steel structures

Period	Obligations	
04/15/78-05/14/80	FY79: $12,445	TOTAL: $44,860

Prin Invest	NASA Tech Officer	CASE Category
Botros, B. M.	LARC/Buckley, J. D.	47-Materials Engr

NSG 1631 **North Carolina A&T State University** **3114**
Design and testing of small composite specimens

Period	Obligations	
08/17/79-08/16/80	FY79: $35,000	TOTAL: $35,000

Prin Invest	NASA Tech Officer	CASE Category
Sharma, A. V.	LARC/Rhodes, M. D. LARC/Mikulas, M. M., Jr.	44-Civil Engr

NSG 5406 **North Carolina A&T State University** **3115**
Two-dimensional recursive digital filters for new real time image processing

Period	Obligations	
09/13/79-09/14/80	FY79: $55,000	TOTAL: $55,000

Prin Invest	NASA Tech Officer	CASE Category
Alexander, W. E Olson, D. E	GSFC/Ramapriyan, H. K. GSFC/Alford, W. L.	21-Mathematics

NSG 8045 **North Carolina A&T State University** **3116**
Research study of composites as substrate materials in large space telescopes

Period	Obligations	
10/15/76-08/15/79	FY79	TOTAL: $48,155

Prin Invest	NASA Tech Officer	CASE Category
Sharma, A. V.	MSFC/Stuckey, J. M. MSFC/Kent, M. I	46-Mech Engr

NSG 5120 **North Carolina Central University** **3117**
Optically pumped submillimeter waves and applications

Period	Obligations	
06/07/76-08/31/80	FY79: $39,871	TOTAL: $151,799

Prin Invest	NASA Tech Officer	CASE Category
Dutta, J. M. Jones, C. R	GSFC/McAvoy, N. GSFC/Lawandy, N	13-Physics

NAS 5-25751 **North Carolina State Univ. - Raleigh** **3118**
Survey and assessment of existing optical instruments applicable to chemical release observations

Period	Obligations	
05/15/79-11/15/79	FY79: $28,735	TOTAL: $28,735

Prin Invest	NASA Tech Officer	CASE Category
Manring, E. R	GSFC/Heppner, J. P. GSFC/Dubin, M.	31-Atmos Sci

NAS 6-3018 **North Carolina State Univ - Raleigh** **3119**
Statistical modeling of surface water movements using radar altimeter data

Period	Obligations	
07/01/79-12/31/80	FY79: $24,982	TOTAL: $24,982

Prin Invest	NASA Tech Officer	CASE Category
Tung, C.	WFC/Huang, N. E. WFC/Long, S. R	33-Oceanography

NAS 8-31984 **North Carolina State Univ. - Raleigh** **3120**
Study of satellite sensing

Period	Obligations	
04/29/76-09/30/77	FY79:	TOTAL: $19,735
Prin Invest	*NASA Tech Officer*	*CASE Category*
Welby, G.	MSFC/Paludan, C. T.	39-Env Sci, NEC

NCC 1 13 **North Carolina State Univ. - Raleigh** **3121**
Investigation of aerodynamic characteristics of wings at subsonic speeds

Period	Obligations	
05/16/79-05/15/80	FY79: $28,636	TOTAL: $28,636
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dejarnette, F. R.	LARC/Lamar, J. E.	41-Aero Engr
Frink, N. T.	LARC/Campbell, J. F.	

NCC 1 22 **North Carolina State Univ. - Raleigh** **3122**
Computational fluid mechanics

Period	Obligations	
06/15/79-09/14/81	FY79: $91,935	TOTAL: $91,935
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hassan, H. A.	LARC/South, J. C., Jr.	41-Aero Engr

NGL 34-002-095 **North Carolina State Univ. - Raleigh** **3123**
Acoustic energy effects on sleep and human performance: The effects of certain fundamental parameters of acoustic stimuli

Period	Obligations	
04/11/69-12/31/79	FY79:	TOTAL: $395,582
Prin Invest	*NASA Tech Officer*	*CASE Category*
Horvath, J. J.	LARC/Mayes, W. H.	69-Psych, NEC
	LARC/Cawthorn, J. M.	

NGR 34-002-188 **North Carolina State Univ. - Raleigh** **3124**
Deployable reflector antenna study

Period	Obligations	
10/18/72-08/31/79	FY79:	TOTAL: $87,190
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kauffman, J. F.	LARC/Croswell, W. F.	45-Elec Engr
	LARC/Cockrell, C. R.	

NGR 34-002-195 **North Carolina State Univ. - Raleigh** **3125**
Theoretical analysis of current voltage characteristics of solar cells

Period	Obligations	
06/01/73-12/31/78	FY79:	TOTAL: $137,424
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hauser, J. R.	LERC/Godlewski, M. P.	45-Elec Engr
	LERC/Brandhorst, H. W., Jr.	

NSG 1058 **North Carolina State Univ. - Raleigh** **3126**
Analyses of nuclear induced plasmas by means of kinetic theory

Period	Obligations	
07/01/74-06/30/80	FY79: $30,000	TOTAL: $181,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hassan, H. A.	LARC/Meador, W. E., Jr.	13-Physics
	LARC/Hohl, F.	

NSG 1077 **North Carolina State Univ. - Raleigh** **3127**
Estimate the performance and dynamic response characteristics of an advanced technology light twin aircraft and compare with flight test results

Period	Obligations	
08/15/74-01/31/79	FY79.	TOTAL: $184,290
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smetana, F. O.	LARC/Crane, H. L.	41-Aero Engr

NSG 1205 **North Carolina State Univ. - Raleigh** **3128**
Research program in aeroacoustics for noise control of general aviation aircraft

Period	Obligations	
07/01/75-09/30/79	FY79	TOTAL: $116,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hart, F. D.	LARC/Mayes, W. H.	13-Physics
Bailey, J. R.	LARC/Cawthorn, J. M.	

NSG 1353 **North Carolina State Univ. - Raleigh** **3129**
Pattern classifiers using charge transfer devices applications

Period	Obligations	
11/22/76-01/31/80	FY79: $40,653	TOTAL: $105,430
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snyder, W. E.	LARC/Benz, H. F.	45-Elec Engr
	LARC/Husson, C.	

NSG 1355 **North Carolina State Univ. - Raleigh** **3130**
A study of real-time computer graphic display technology for aeronautical applications

Period	Obligations	
01/01/77-03/31/80	FY79: $15,818	TOTAL: $59,782
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rajala, S. A.	LARC/Hatfield, J. J.	45-Elec Engr
	LARC/Batson, V. M.	

NSG 1377 **North Carolina State Univ. - Raleigh** **3131**
Investigation of flow noise from streamlined and blunt bodies trailing edge effects

Period	Obligations	
01/01/77-12/31/79	FY79: $40,000	TOTAL: $117,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hodgson, T. H	LARC/Brooks, T. F.	41-Aero Engr
	LARC/Preisser, J. S.	

NSG 1463 **North Carolina State Univ. - Raleigh** **3132**
Nuclear magnetic resonance and infrared study of moisture in epoxy resins and resin-graphite fiber composites

Period	Obligations	
11/01/77-12/31/79	FY79:	TOTAL: $36,426
Prin Invest	*NASA Tech Officer*	*CASE Category*
Memory, J. D.	LARC/Long, E. R., Jr.	
Fornes, R. E		47-Materials Engr

NSG 1549 **North Carolina State Univ. - Raleigh** **3133**
Constrained interpolation and approximation with application to computer aided geometric design

Period	Obligations	
09/01/78-08/31/80	FY79: $47,926	TOTAL: $75,651
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roulier, J. A.	LARC/Park, S. K.	22-Computer Science
McAllister, D. F.	LARC/Smith, R. E.	

NSG 1562 **North Carolina State Univ. - Raleigh** **3134**
Study of the effects of high energy radiation on the mechanical properties of graphite-fiber reinforced epoxy resins

Period	Obligations	
10/01/78-10/15/79	FY79: $28,052	TOTAL: $38,180
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fornes, R. E.	LARC/Long, E. R., Jr.	13-Physics
Memory, J. D.		

NSG 1584 **North Carolina State Univ. - Raleigh** **3135**
Optimum nacelle shapes and flow port locations for minimum drag and effective engine cooling for general aviation aircraft

Period	Obligations	
01/01/79-12/31/79	FY79: $51,258	TOTAL: $51,258
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smetana, F. O.	LARC/Crane, H. L.	41-Aero Engr

NSG 1588 **North Carolina State Univ. - Raleigh** **3136**
Large reflector antenna analysis research

Period	Obligations	
01/01/79-12/31/79	FY79: $38,877	TOTAL: $38,877
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kauffman, J. F.	LARC/Croswell, W. F.	45-Elec Engr
	LARC/Cockrell, C. R.	

NSG 4025 **North Carolina State Univ. - Raleigh** **3137**
An investigation to improve the performance of a technique to identify lift, drag and power simultaneously from flight test data

Period	Obligations	
07/23/79-07/22/80	FY79: $47,804	TOTAL: $47,804
Prin Invest	*ASA Tech Officer*	*CASE Category*
Smetana, F. O.	DFRC/Kurtenbach, F. J.	41-Aero Engr
	DFRC/Iliff, K. W.	

NSG 2390 **University of North Carolina-Greensboro** **3138**
Automaticity and skill acquisition in a multiple task

Period	Obligations	
07/01/79-06/30/80	FY79: $36,216	TOTAL: $36,216
Prin Invest	*NASA Tech Officer*	*CASE Category*
Regan, J. E.	ARC/Curry, R. E.	69-Psych, NEC

OHIO

NSG 7022 **Bowling Green State University** **3139**
A radially streaming particle model for Seyfert galaxy nuclei and quasistellar objects

Period	Obligations	
07/01/74-12/31/77	FY79:	TOTAL: $65,083
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ptak, R. L.	HQ-SC/Roman, N. G.	11-Astronomy
Stoner, R. E.	HQ-SC/Rosendhal, J. D.	

NAS 3-21046 **Case Western Reserve University** **3140**
Spacelab experiment on surface tension driven convection

Period	Obligations	
09/16/77-12/31/79	FY79:	TOTAL: $97,730
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ostrach, S.	LERC/Labus, T. L.	46-Mech Engr

NAS 3-21365 **Case Western Reserve University** **3141**
Low sidelobe level low-cost earth station antennas for the twelve GHz broadcasting satellite service

Period	Obligations	
06/06/78-06/06/79	FY79:	TOTAL: $59,601
Prin Invest	*NASA Tech Officer*	*CASE Category*
Collin, R. E.	LERC/Smetana, J.	49-Engr, NEC

NAS 3-21946 **Case Western Reserve University** **3142**
Determination of fatigue characteristics of ion beam textured orthopedic implant alloy MP35N in physiological solution

Period	Obligations	
06/11/79-06/10/80	FY79: $10,131	TOTAL: $10,131
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bahniuk, E	LERC/Wintucky, E. G.	49-Engr, NEC

NAS 3-21965 **Case Western Reserve University** **3143**
Vapor phase diamond growth technology

Period	Obligations	
09/21/79-10/20/80	FY79: $17,360	TOTAL: $17,360
Prin Invest	*ech Officer*	*CASE Category*
Angus, J. C.	L.. /Riley, T. J.	12-Chemistry
Mann, A., Jr.	LERC/Myers, I. T.	

NAS 3-22259 **Case Western Reserve University** **3144**
Biomedical application of ion thruster technology

Period	Obligations	
09/25/79-04/25/80	FY79: $23,100	TOTAL: $23,100
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gibbons, D. F.	LERC/Weigand, A. J.	19-Phys Sci, NEC

NAS 5-24144 **Case Western Reserve University** **3145**
Axially grooved heat pipe study

Period	Obligations	
04/25/77-09/25/78	FY79:	TOTAL: $13,257
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kamotani, Y.	GSFC/Ollendorf, S.	46-Mech Engr
	GSFC/McIntosh, R.	

NAS 8-31907 **Case Western Reserve University** **3146**
Convection in crystal growing
Period 03/15/76-06/30/78 *Obligations* FY79: TOTAL: $39,981
Prin Invest Ostrach, S.
NASA Tech Officer MSFC/Schafer, C. F.; MSFC/Fichtl, G. H.
CASE Category 12-Chemistry

NAS 8-33015 **Case Western Reserve University** **3147**
Surface tension driven convection phenomena experiment
Period 05/23/78-05/07/80 *Obligations* FY79: $111,718 TOTAL: $213,093
Prin Invest Ostrach, S.; Mann, J. A., Jr.
NASA Tech Officer MSFC/Reeves, F. A.; MSFC/Zwiener, J. M.
CASE Category 13-Physics

NCC 3 4 **Case Western Reserve University** **3148**
Interactive flow-field calculations in turbomachinery
Period 08/01/79-07/31/80 *Obligations* FY79: $35,642 TOTAL: $35,642
Prin Invest Reshotko, E.
NASA Tech Officer LERC/Sockol, P. M.
CASE Category 41-Aero Engr

NGL 36-003-094 **Case Western Reserve University** **3149**
The effects of deformation on dispersion
Period 10/18/66-08/31/78 *Obligations* FY79: TOTAL: $275,461
Prin Invest Ebert, L. J.
NASA Tech Officer LERC/Glasgow, T. K.
CASE Category 47-Materials Engr

NGR 36-027-050 **Case Western Reserve University** **3150**
Catalysts for electrochemical generation of oxygen
Period 02/22/72-11/14/79 *Obligations* FY79: $24,859 TOTAL: $369,606
Prin Invest Yeager, E.; Cahan, B. D.
NASA Tech Officer ARC/Quattrone, P. D.
CASE Category 12-Chemistry

NGR 36-027-064 **Case Western Reserve University** **3151**
Study of effects of layer control on shock wave turbulent boundary layer interactions in supersonics inlets
Period 08/01/73-09/30/79 *Obligations* FY79: $45,362 TOTAL: $206,369
Prin Invest Reshotko, E.
NASA Tech Officer LERC/Bishop, A. R.
CASE Category 41-Aero Engr

NGT 36-027-011 **Case Western Reserve University** **3152**
Summer program of NASA-ASEE summer faculty fellowships
Period 12/16/69-03/ '80 *Obligations* FY79: $153,000 TOTAL: $1,255,933
Prin Invest Prahe, J. M.
NASA Tech Officer HQ-LU/Carter, C. H.
CASE Category 49-Engr, NEC

NGT 36-027-790 **Case Western Reserve University** **3153**
Pre-cooperative engineering education program
Period 08/01/79-07/31/80 *Obligations* FY79: $6,224 TOTAL: $6,224
Prin Invest Chenelle, D. W.
NASA Tech Officer HQ-LU/Pohly, J. G.; LERC/Allen, R. P.
CASE Category 49-Engr, NEC

NSG 2384 **Case Western Reserve University** **3154**
Prediction of system invariants in the presence of failure
Period 06/01/79-05/31/80 *Obligations* FY79: $29,601 TOTAL: $29,601
Prin Invest Martin, C. F.
NASA Tech Officer ARC/Doolin, B. F.
CASE Category 49-Engr, NEC

NSG 3009 **Case Western Reserve University** **3155**
An X-ray photoelectric spectroscopy study of nickel and nickel-base alloy: Surface alteration in simulated hot corrosion conditions
Period 06/01/74-02/15/78 *Obligations* FY79: TOTAL: $58,900
Prin Invest Mateescu, G. D.
NASA Tech Officer LERC/Kohl, F. J.; LERC/Stearns, C. A.
CASE Category 12-Chemistry

NSG 3040 **Case Western Reserve University** **3156**
Heat transfer characteristics of porous materials
Period 10/01/74-10/30/80 *Obligations* FY79: $70,000 TOTAL: $180,000
Prin Invest Dybbs, A.
NASA Tech Officer LERC/Fortini, A.
CASE Category 47-Materials Engr

NSG 3062 **Case Western Reserve University** **3157**
Interactive compressor flow-field calculations
Period 02/01/75-01/31/79 *Obligations* FY79: TOTAL: $55,986
Prin Invest Reshotko, E.
NASA Tech Officer LERC/Sockol, P. M.
CASE Category 41-Aero Engr

NSG 3074 **Case Western Reserve University** **3158**
Applications of high power lasers
Period 05/29/75-02/15/79 *Obligations* FY79: TOTAL: $149,655
Prin Invest Angus, J. C.; Edwards, R. V.; Mann, J. A., Jr.
NASA Tech Officer LERC/Dunning, J. W., Jr.
CASE Category 43-Chem Engr

NSG 3085 **Case Western Reserve University** **3159**
Demonstration experiment on utilization of buffer memory system for transmission of color video using moderate bandwidth communications satellite channels
Period 10/23/75-11/20/79 *Obligations* FY79: $108,217 TOTAL: $518,511
Prin Invest Pao, Y. H.; Claspy, P. C.
NASA Tech Officer LERC/Stevens, G. H.
CASE Category 45-Elec Engr

NSG 3115 **Case Western Reserve University** **3160**
Computer graphic techniques for visualizing and interpreting fluid flow models

Period	Obligations	
06/30/76-06/29/79	FY79:	TOTAL: $48,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lynch, W. C.	LERC/Anderson, B. H.	41-Aero Engr
Parke, F. R.		

NSG 3126 **Case Western Reserve University** **3161**
Effect of surface texture by ion beam sputtering on implant biocompatibility and soft tissue attachment

Period	Obligations	
10/01/76-10/01/79	FY79:	TOTAL: $40,577
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gibbons, D. F.	LERC/Weigand, A. J.	49-Engr, NEC
	LERC/Banks, B. A.	

NSG 3131 **Case Western Reserve University** **3162**
Adaptation of ion beam technology to microfabrication of solid state devices and transducers

Period	Obligations	
11/01/76-10/31/79	FY79: $20,938	TOTAL: $85,184
Prin Invest	*NASA Tech Officer*	*CASE Category*
Topich, J. A.	LERC/Mirtich, M. J.	19-Phys Sci, NEC
Ko, W. H.	LERC/Banks, B. A.	

NSG 3140 **Case Western Reserve University** **3163**
Spectroscopic investigation of the effects of moisture on epoxy resins

Period	Obligations	
02/01/77-01/31/80	FY79:	TOTAL: $58,680
Prin Invest	*NASA Tech Officer*	*CASE Category*
Koenig, J. L.	LERC/Serafini, T. T.	12-Chemistry
	LERC/Lauver, R. W	

NSG 3142 **Case Western Reserve University** **3164**
Characterization of structure of a polymer with a magnetic resonance spectroscopy

Period	Obligations	
03/01/77-10/01/78	FY79:	TOTAL: $38,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ritchey, W. M.	LERC/Lauver, R. W.	12-Chemistry

NSG 3151 **Case Western Reserve University** **3165**
The evaluation of surface texturing, by ion beam sputtering, on the mechanical fixation and biological compatibility of orthopedic alloys in bone

Period	Obligations	
05/01/77-10/31/79	FY79: $15,047	TOTAL: $28,569
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gibbons, D. F.	LERC/Weigand, A. J.	
Heiple, K. G.	LERC/Banks, B. A.	56-Medical Sciences
Makley, J. T.		

NSG 3197 **Case Western Reserve University** **3166**
Secondary electron emission yield

Period	Obligations	
07/01/78-06/30/80	FY79: $49,920	TOTAL: $98,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gordan, W. L.	LERC/Purvis, C. K.	13-Physics
Hoffman, R. W.	LERC/Stevens, N. J.	

NSG 3203 **Case Western Reserve University** **3167**
The development of sensors and techniques for in-situ water quality monitoring

Period	Obligations	
07/01/78-02/28/80	FY79: $29,968	TOTAL: $59,964
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liu, C. C.	LERC/Fordyce, J. S.	43-Chem Engr

NSG 3206 **Case Western Reserve University** **3168**
Experiments on jet mixing in compact reverse flow combustor configurations

Period	Obligations	
07/01/78-06/30/81	FY79:	TOTAL: $67,850
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greber, I.	LERC/Riddlebaugh, S. M.	41-Aero Engr

NSG 3207 **Case Western Reserve University** **3169**
Shaded computer graphic techniques for visualizing and interpreting analytic fluid flow models

Period	Obligations	
07/01/78-07/01/81	FY79:	TOTAL: $53,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parke, F. I.	LERC/Anderson, B. H.	41-Aero Engr

NSG 3211 **Case Western Reserve University** **3170**
Experimental investigation of shock-wave-boundary layer interaction

Period	Obligations	
06/01/78-05/30/81	FY79:	TOTAL: $58,690
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greber, I	LERC/Hingst, W. R.	41-Aero Engr

NSG 3221 **Case Western Reserve University** **3171**
Convection in crystal growth and G-jitter

Period	Obligations	
09/01/78-08/31/80	FY79: $45,000	TOTAL: $100,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ostrach, S.	LERC/Labus, T. L.	13-Physics
	LERC/Cochran, T. H.	

NSG 3230 **Case Western Reserve University** **3172**
Modeling of transient operations of monolith catalytic combustors

Period	Obligations	
11/01/78-10/31/80	FY79: $69,000	TOTAL: $69,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
T'len, J. S.	LERC/Anderson, D. N.	46-Mech Engr
Reshotko, E.		

NSG 3241 **Case Western Reserve University** **3173**
Characterization of structure of a polymer with a magnetic resonance spectroscopy

Period 12/01/78-12/01/79 *Obligations* FY79: $30,000 TOTAL: $30,000
Prin Invest Ritchey, W. M. *NASA Tech Officer* LERC/Lauver, R. W. *CASE Categ* 12-Chemistry

NSG 3246 **Case Western Reserve University** **3174**
Anisotropy of directionally solidified nickel base superalloy monocrystals

Period 06/15/79-06/15/82 *Obligations* FY79: $49,935 TOTAL: $49,935
Prin Invest Maier, R. D. *NASA Tech Officer* LERC/Scheuermann, C. M. *CASE Categ* 47-Materials Engr

NSG 3251 **Case Western Reserve University** **3175**
Use of the method of lines in fracture mechanics analyses with application to curved crack fronts

Period 03/01/79-03/30/80 *Obligations* FY79: $34,790 TOTAL: $34,790
Prin Invest Mendelson, A. *NASA Tech Officer* LERC/Brown, W. F., Jr. *CASE Categ* 46-Mech Engr

NSG 3252 **Case Western Reserve University** **3176**
Microstructure and mechanical properties of bulk and plasma-sprayed Y2O3 partially stabilized zirconia

Period 04/02/79-04/02/80 *Obligations* FY79: $29,990 TOTAL: $29,990
Prin Invest Maier, R. D. *NASA Tech Officer* LERC/Gedwill, M. A. *CASE Categ* 47-Materials Engr
LERC/Levine, S. R.

NSG 3268 **Case Western Reserve University** **3177**
Performance of high temperature annular heat pipes

Period 03/30/79-03/29/80 *Obligations* FY79: $19,902 TOTAL: $19,902
Prin Invest Kamotani, Y. *NASA Tech Officer* LERC/Tower, L. K. *CASE Categ* 47-Materials Engr
LERC/Morris, J. F.

NSG 3271 **Case Western Reserve University** **3178**
Model development for shock wave boundary layer interaction experiments

Period 04/24/79-04/24/80 *Obligations* FY79: $32,110 TOTAL: $32,110
Prin Invest Greber, I. *NASA Tech Officer* LERC/Hingst, W. R. *CASE Categ* 41-Aero Engr

NSG 3272 **Case Western Reserve University** **3179**
Molecular mechanism of thermal degradation of polyimide resins

Period 05/07/79-05/07/80 *Obligations* FY79: $14,990 TOTAL: $14,990
Prin Invest Ishida, H.
Koenig, J. L. *NASA Tech Officer* LERC/Lauver, R. W. *CASE Categ* 12-Chemistry

NSG 3276 **Case Western Reserve University** **3180**
Three-dimensional bispectra and the mean rate of transfer of energy in turbulence

Period 05/15/79-05/14/80 *Obligations* FY79: $34,990 TOTAL: $34,990
Prin Invest Koenig, J. L.
Mateescu, G. D. *NASA Tech Officer* LERC/Hsu, L. C.
LERC/Philipp, W. *CASE Categ* 12-Chemistry

NSG 3279 **Case Western Reserve University** **3181**
Thermal fatigue behavior of dies for aluminum die casting after deposition of various ion sputtered coatings

Period 06/01/79-05/31/80 *Obligations* FY79: $12,000 TOTAL: $12,000
Prin Invest Wallace, J. F. *NASA Tech Officer* LERC/Mirtich, M. J. *CASE Categ* 19-Phys Sci, NEC

NSG 3282 **Case Western Reserve University** **3182**
The influence of surface morphology modification by ion beam sputtering on the tissue response to percutaneous implants, of various compositions

Period 06/01/79-11/30/79 *Obligations* FY79: $19,579 TOTAL: $19,579
Prin Invest Gibbons, D. F.
Picha, G. *NASA Tech Officer* LERC/Weigand, A. J.
LERC/Banks, B. A. *CASE Categ* 56-Medical Sciences

NSG 3288 **Case Western Reserve University** **3183**
Optical studies of lubrication and transfer films for prosthetic devices

Period 07/01/79-12/31/79 *Obligations* FY79: $20,000 TOTAL: $20,000
Prin Invest Cahan, B. D. *NASA Tech Officer* LERC/Jones, W. R., Jr. *CASE Categ* 12-Chemistry

NSG 3289 **Case Western Reserve University** **3184**
Ion beam texturing of polymers

Period 07/17/79-11/14/79 *Obligations* FY79: $8,475 TOTAL: $8,475
Prin Invest Geil, K. H.
Hurwitz, E. I. *NASA Tech Officer* LERC/Souey, J. S. *CASE Categ* 47-Materials Engr

NSG 3291 **Case Western Reserve University** **3185**
Self-diffusion of oxygen and aluminum in doped alumina

Period 09/01/79-08/31/80 *Obligations* FY79: $33,000 TOTAL: $33,000
Prin Invest Cooper, A. R. *NASA Tech Officer* LERC/Smialek, J. L. *CASE Categ* 47-Materials Engr

NSG 5392 **Case Western Reserve University** **3186**
Theoretical determination of structures, bending energies and vibrational frequencies

Period 07/01/79-12/31/79 *Obligations* FY79: $4,025 TOTAL: $4,025
Prin Invest Anderson, A. B. *NASA Tech Officer* GSFC/Donn, B. D. *CASE Categ* 12-Chemistry

NSG 7035 **Case Western Reserve University** **3187**
Development of a generalized technology for life prediction in the high-temperature creep and fatigue range

Period	Obligations	
05/01/74-05/01/80	FY79: $39,993	TOTAL: $218,269
Prin Invest	*NASA Tech Officer*	*CASE Category*
Powell, N. L.	LERC/Hirschberg, M. H. LERC/Halford, G. R.	47-Materials Engr

NGR 36-033-003 **Central State University - Ohio** **3188**
Effects of some selected atmospheric pollutants on animal population surrounding the Cleveland area

Period	Obligations	
04/25/73-04/31/79	FY79:	TOTAL: $136,807
Prin Invest	*NASA Tech Officer*	*CASE Category*
Craft, T. J., Sr.	LERC/Fordyce, J. S.	54-Env Biology
Johnson, M. A., Jr.	LERC/King, R. B.	

NAS 3-18547 **Cleveland State University** **3189**
Synthesis and optimization of spur gear tooth profile shapes for high load capacity

Period	Obligations	
06/04/74-12/24/79	FY79:	TOTAL: $69,980
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kasuba, R.	LERC/Townsend, D. P.	46-Mech Engr

NCC 3 3 **Cleveland State University** **3190**
Graduate study program in unsteady heat transfer in turbomachinery

Period	Obligations	
09/29/79-09/30/82	FY79: $67,512	TOTAL: $67,512
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gorla, R. S.	LERC/Simoneau, R. J. LERC/Graham, R. W.	46-Mech Engr

NGT 36-025-780 **Cleveland State University** **3191**
Pre-cooperative engineering education program

Period	Obligations	
10/01/77-07/31/80	FY79: $2,412	TOTAL: $6,669
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bennett, W. R.	HQ-LU/Pohly, J. G. LERC/Allen, R. P.	49-Engr, NEC

NSG 1445 **Cleveland State University** **3192**
Boundedness of solutions and controllability of systems and pursuit games described by nonlinear neutral functional differential equations

Period	Obligations	
08/16/77-12/31/79	FY79:	TOTAL: $17,768
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chukwu, E. N.	LARC/Dunning, R. S. LARC/Elliott, J. R.	41-Aero Engr

NSG 3155 **Cleveland State University** **3193**
Dense silicon-nitride bodies without additives

Period	Obligations	
06/30/77-06/30/80	FY79:	TOTAL: $44,850
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yeh, H. C.	LERC/Ashbrook, R. L.	43-Chem Engr

NSG 3222 **Cleveland State University** **3194**
Investigation of power and energy measuring devices for monitoring non-sinusoidal ac and pulsed dc signals

Period	Obligations	
10/01/78-10/01/79	FY79:	TOTAL: $32,986
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maisel, J. F.	LERC/Nieberding, W. C. LERC/Weikle, D. H.	45-Elec Engr

NSG 3223 **Cleveland State University** **3195**
Control of a hybrid system with flywheel energy storage and continuously variable transmission

Period	Obligations	
10/01/78-03/31/80	FY79:	TOTAL: $56,819
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Burghart, J. H. Donoghue, J. F.	LERC/Beach, R. F.	49-Engr, NEC

NSG 3257 **Cleveland State University** **3196**
A study of dynamic energy equations

Period	Obligations	
03/15/79-03/14/80	FY79: $29,868	TOTAL: $29,868
Prin Invest	*NASA Tech Officer*	*CASE Category*
Larson, V. H. Loparo, K. A.	LERC/Lorenzo, C. F.	46-Mech Engr

NSG 3259 **Cleveland State University** **3197**
Nitridation kinetics and reaction sintering of silicon nitride

Period	Obligations	
03/26/79-03/26/81	FY79: $51,119	TOTAL: $51,119
Prin Invest	*NASA Tech Officer*	*CASE Category*
Yeh, H. C.	LERC/Herbell, T. P.	47-Materials Engr

NSG 3308 **Cleveland State University** **3198**
Development of a data system for multi channel spectrometers

Period	Obligations	
09/14/79-09/13/80	FY79: $52,395	TOTAL: $52,395
Prin Invest	*NASA Tech Officer*	*CASE Category*
Megargle, R.	LERC/Gordon, W. A.	12-Chemistry

NAS 3-21945 **Kent State University** **3199**
Identification of new application technology

Period	Obligations	
06/28/79-06/26/80	FY79: $21,000	TOTAL: $21,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gelerinter, I Spielberg, N.	LERC/Sater, B. L.	19-Phys Sci, NEC

NSG 2013 **Kent State University** **3200**
Transport of trace contaminants through porous media
Period 03/15/74-12/31/80 *Obligations* FY79: TOTAL: $98,700
Prin. Invest Madey, R. *NASA Tech. Officer* ARC/Quattrone, P. D. *CASE Category* 12-Chemistry

NSG 3159 **Kent State University** **3201**
Evaluation of surface alignment mechanisms for nematic liquid crystals
Period 08/01/77-11/01/79 *Obligations* FY79: $6,179 TOTAL: $16,336
Prin Invest Johnson, D. L. *NASA Tech Officer* LERC/Wintucky, E. G. LERC/Banks, B. A. *CASE Category* 47-Materials Engr

NAS 9-14538 **Miami University** **3202**
Research on a possible mechanism of 0-g sickness
Period 02/15/75-03/31/80 *Obligations* FY79: $25,900 TOTAL: $127,971
Prin Invest Parker, D. E. *NASA Tech Officer* JSC/Homick, J. L. JSC/Reschke, M. F. *CASE Category* 59-Life Sci, NEC

NCC 1 12 **Miami University** **3203**
Basic research on radiation induced lasers
Period 05/15/79-07/31/80 *Obligations* FY79: $63,536 TOTAL: $63,536
Prin Invest Wells, W. E. *NASA Tech Officer* LARC/Hohl, F. LARC/Jalufka, N. W. *CASE Category* 13-Physics

NSG 1383 **Miami University** **3204**
High pressure laser plasma studies
Period 03/01/77-02/28/79 *Obligations* FY79: TOTAL: $45,757
Prin Invest Wells, W. E. *NASA Tech Officer* LARC/Hohl, F. *CASE Category* 13-Physics

NSG 1396 **Miami University** **3205**
Nuclear pumped lasers
Period 03/01/77-08/31/79 *Obligations* FY79: TOTAL: $72,997
Prin Invest Wells, W. E. *NASA Tech Officer* LARC/Hohl, F. *CASE Category* 13-Physics

NSG 3278 **Muskingum College** **3206**
Chemically modified electrodes
Period 06/11/79-12/30/79 *Obligations* FY79: $7,100 TOTAL: $7,100
Prin Invest Wallace, W. J. *NASA Tech Officer* LERC/Reid, M. A. *CASE Category* 12-Chemistry

NAS 1-14406 **Ohio State University** **3207**
General aviation low-speed airfoil design and development service
Period 06/30/76-06/29/80 *Obligations* FY79: $49,999 TOTAL: $348,107
Prin Invest Gregorek, G. M. Burggraf, O. R. *NASA Tech Officer* LARC/Barnwell, R. W. LARC/McGhee, R. J. *CASE Category* 41-Aero Engr

NAS 1-15680 **Ohio State University** **3208**
Flight evaluation of the aeroacoustics of general aviation propellers
Period 01/04/79-06/03/80 *Obligations* FY79: $70,489 TOTAL: $70,489
Prin Invest Gregorek, G. M. Korkan, K. D. Weislogel, G. S. *NASA Tech Officer* LARC/Greene, G. C. LARC/Pegg, R. J. *CASE Category* 41-Aero Engr

NAS 1-15969 **Ohio State University** **3209**
Determine the IFR operation profile of the general aviation single pilot
Period 09/12/79-12/26/80 *Obligations* FY79: $61,000 TOTAL: $61,000
Prin Invest Weislogel, G. S. Chapman, G. C. *NASA Tech Officer* LARC/Bergeron, H. P. LARC/Shaughnessy, J. D. *CASE Category* 41-Aero Engr

NAS 2-10047 **Ohio State University** **3210**
An investigation in pilot and system response to critical in-flight events
Period 11/01/78-05/31/80 *Obligations* FY79: $106,017 TOTAL: $106,017
Prin Invest Rockwell, T. H. Giffin W. C. *NASA Tech Officer* ARC/Lauber, J. K. ARC/Billings, C. E. *CASE Category* 69-Psych, NEC

NAS 5-22575 **Ohio State University** **3211**
Communications link characterization experiment
Period 09/02/75-05/01/80 *Obligations* FY79: $58,474 TOTAL: $347,417
Prin Invest Hodge, D. B. *NASA Tech Officer* GSFC/Hirschmann, E. *CASE Category* 45-Elec Engr

NAS 5-25888 **Ohio State University** **3212**
Utilization of range difference observations in geodynamics
Period 09/19/79-12/18/82 *Obligations* FY79: $20,000 TOTAL: $20,000
Prin Invest Mueller, I. I. *NASA Tech Officer* GSFC/Stephanides, C. C. *CASE Category* 32-Geological Sci

NASW 3149 **Ohio State University** **3213**
Solar Terrestrial Climatic Relationships symposium
Period 05/15/78-11/14/79 *Obligations* FY79: TOTAL: $24,946
Prin Invest Seliga, T. A. *NASA Tech Officer* HQ-ST/Simon, N. K. *CASE Category* 31-Atmos Sci

NASW 3194 **Ohio State University** **3214**
Support of ninth geodesy solid earth and ocean physics
Period *Obligations*
01/01/78-06/30/79 FY79: TOTAL: $16,000
Prin. Invest *NASA Tech Officer* *CASE Category*
Mueller, I. I. HQ-ER/Murphy, J. P. 31-Atmos Sci

NCA 2-565901 **Ohio State University** **3215**
Relaxation algorithms applied to grid generation (ADI)
Period *Obligations*
07/01/79-06/30/80 FY79: $18,000 TOTAL: $18,000
Prin Invest *NASA Tech Officer* *CASE Category*
Nakamura, S. ARC/Holst, T. L. 41-Aero Engr

NGL 36-008-051 **Ohio State University** **3216**
Stress corrosion cracking of titanium alloys
Period *Obligations*
06/23/66-06/01/79 FY79: TOTAL: $208,696
Prin. Invest *NASA Tech Officer* *CASE Category*
Beck, F. H. LERC/Gray, H. R. 47-Materials Engr

NGR 36-008-161 **Ohio State University** **3217**
The direct combination of satellite and gravity data
Period *Obligations*
05/01/71-02/29/80 FY79: $25,974 TOTAL: $247,025
Prin Invest *NASA Tech Officer* *CASE Category*
Rapp, R. H. GSFC/Marsh, J. G. 32-Geological Sci

NGR 36-008-204 **Ohio State University** **3218**
Activity related to earth and ocean physics application program
Period *Obligations*
10/01/73-09/30/78 FY79: TOTAL: $244,112
Prin Invest *NASA Tech Officer* *CASE Category*
Mueller, I. I. HQ-ER/Murphy, J. P. 32-Geological Sci
Uotila, U. A.

NGT 36-008-007 **Ohio State University** **3219**
Training of post graduate medical students in field of aerospace medicine
Period *Obligations*
04/02/64-08/31/78 FY79: TOTAL: $606,066
Prin Invest *NASA Tech Officer* *CASE Category*
Keller, M. D. HQ-LU/Nicogossian, A. E. 56-Medical Sciences

NGT 36-008-780 **Ohio State University** **3220**
Pre-cooperative engineering education program
Period *Obligations*
10/01/78-09/30/79 FY79: TOTAL: $2,030
Prin Invest *NASA Tech Officer* *CASE Category*
Stranges, J. HQ-LU/Pohly, J. G. 49-Engr, NEC
LERC/Allen, R. P.

NSG 1498 **Ohio State University** **3221**
Analysis of airborne antenna patterns
Period *Obligations*
01/16/78-01/15/81 FY79: $84,910 TOTAL: $119,511
Prin Invest *NASA Tech Officer* *CASE Category*
Burnside, W. D. LARC/Gilreath, M. C. 45-Elec Engr
LARC/Croswell, W. F.

NSG 1613 **Ohio State University** **3222**
Radar cross section studies
Period *Obligations*
05/01/79-04/30/80 FY79: $49,929 TOTAL: $49,929
Prin Invest *NASA Tech Officer* *CASE Category*
Peters, L. LARC/Gilreath, M. C. 45-Elec Engr
Burnside, W. D.

NSG 1620 **Ohio State University** **3223**
Applications of a kinesthetic tactual display for aircraft control
Period *Obligations*
05/16/79-01/15/80 FY79: $40,000 TOTAL: $40,000
Prin Invest *NASA Tech Officer* *CASE Category*
Gilson, R. D. LARC/Holmes, B. J. 41-Aero Engr
Shulman, H. G. LARC/Brown, P. W.

NSG 1622 **Ohio State University** **3224**
Viscous interaction effects on airfoil performances
Period *Obligations*
07/01/79-06/30/80 FY79: $39,984 TOTAL: $39,984
Prin Invest *NASA Tech Officer* *CASE Category*
Burggraf, O. R. LARC/Barnwell, R. W. 41-Aero Engr
Duck, P. W. LARC/South, J. C., Jr.

NSG 2162 **Ohio State University** **3225**
Electronic search technology applicable to the search for extraterrestrial intelligence problem
Period *Obligations*
06/01/76-07/31/80 FY79: $10,181 TOTAL: $35,181
Prin Invest *NASA Tech Officer* *CASE Category*
Kraus, J. D. ARC/Billingham, J. 45-Elec Engr
Dixon, R. S. ARC/Stull, M. A.

NSG 2175 **Ohio State University** **3226**
Laboratory infrared research relevant to atmospheric and planetary studies
Period *Obligations*
10/01/76-09/30/80 FY79: $48,238 TOTAL: $156,238
Prin Invest *NASA Tech Officer* *CASE Category*
Rao, K. N. ARC/Boese, R. W. 13-Physics

NSG 2179 **Ohio State University** **3227**
Study of tactual sensing and transmittal of information
Period *Obligations*
09/01/76-01/31/80 FY79: $45,186 TOTAL: $155,683
Prin Invest *NASA Tech Officer* *CASE Category*
Jagacinski, R. J. ARC/Dunn, R. S. 69-Psych, NEC
Gilson, R. D.

NSG 2220 **Ohio State University** **3228**
Environmental and genetic effects on gravity receptors: A morphological, physiological and behavioral study

Period	Obligations	
05/01/77-10/31/79	FY79:	TOTAL: $78,849
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Lim, D. J.	ARC/Mehler, W. R.	51-Biological Sci

NSG 2298 **Ohio State University** **3229**
Experimental analyses of trailing edge flows

Period	Obligations	
02/01/78-01/31/80	FY79: $70,996	TOTAL: $140,763
Prin. Invest	*NASA Tech. Officer*	*CASE Category*
Petrie, S. L.	ARC/McDevitt, J. B.	41-Aero Engr
Korkan, K. D.	ARC/Levy, L. L., Jr.	
Hoffmann, M.		

NSG 3164 **Ohio State University** **3230**
Deformation structures in metal crystals due to wear and machining at high speed

Period	Obligations	
12/01/77-12/31/79	FY79: $24,302	TOTAL: $48,167
Prin Invest	*NASA Tech Officer*	*CASE Category*
Black, J. T.	LERC/Bill, R. C.	47-Materials Engr
	LERC/Ludwig, L. P.	

NSG 3235 **Ohio State University** **3231**
Mechanism of fiber release during pyrolysis of carbon fiber reinforced plastics

Period	Obligations	
12/01/78-11/30/81	FY79: $93,186	TOTAL: $93,186
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Smith, E. E.	LERC/Bowles, K. J.	49-Engr, NEC
	LERC/Serafini, T. T.	

NSG 3247 **Ohio State University** **3232**
Propeller aero-acoustic methodology

Period	Obligations	
01/15/79-01/15/80	FY79: $97,104	TOTAL: $97,104
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Gregorek, G. M.	LERC/Mikkelson, D. C.	41-Aero Engr
Korkan, K. D.		

NSG 3269 **Ohio State University** **3233**
In search of a theoretical foundation for quantitative ultrasonic measurement of fracture toughness

Period	Obligations	
05/01/79-02/07/80	FY79: $10,887	TOTAL: $10,887
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fu, L. S.	LERC/Vary, A.	47-Materials Engr

NSG 3302 **Ohio State University** **3234**
The application of optical computing techniques to jet engine controls

Period	Obligations	
08/01/79-07/31/80	FY79: $39,964	TOTAL: $39,964
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Collins, S. A., Jr.	LERC/Baumbilk, R. J.	45-Elec Engr
Damon, E. K.	LERC/Sellers, J. F.	
Long, R. K.		

NSG 5141 **Ohio State University** **3235**
A search for variations in the spectrum of gamma gas

Period	Obligations	
12/01/76-05/31/78	FY79: $10	TOTAL: $384
Prin Invest	*NASA Tech Officer*	*CASE Category*
Slettebak, A. E.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5247 **Ohio State University** **3236**
Exploratory observations of the ultraviolet spectra of late-type stars

Period	Obligations	
03/01/78-06/30/79	FY79:	TOTAL: $9,187
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wing, R. F.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5265 **Ohio State University** **3237**
Basic research for the earth dynamics program

Period	Obligations	
04/01/78-01/31/81	FY79: $120,000	TOTAL: $185,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mueller, I. I.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5275 **Ohio State University** **3238**
Research of altimeter data in order to improve existing gravity models

Period	Obligations	
05/15/78 09/30/79	FY79:	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmidt, E. G.	GSFC/Smith, D. E.	32-Geological Sci

NSG 5299 **Ohio State University** **3239**
A search for variations in the spectrum

Period	Obligations	
08/15/78-09/14/80	FY79:	TOTAL: $1,735
Prin Invest	*NASA Tech Officer*	*CASE Category*
Slettebak, A. E.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5368 **Ohio State University** **3240**
Research of binary systems and composite sources involving cool and hot components

Period	Obligations	
06/01/79-05/31/80	FY79: $7,700	TOTAL: $7,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wing, R. F.	GSFC/Boggess, A.	11-Astronomy

NSG 7479 **Ohio State University** **3241**
Investigation of infrared spectra of atmospheric gases to support stratospheric spectroscopic observations

Period	Obligations	
11/01/78-10/31/79	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shaw, J. H.	HQ-ST/Kakar, R. K. HQ-ST/Tilford, S. G.	31-Atmos Sci

NGR 36-009-017 **Ohio University** **3242**
Air transportation systems: Emphasis on low frequency navigation

Period	Obligations	
02/26/71-11/30/81	FY79: $75,000	TOTAL: $600,458
Prin Invest	*NASA Tech Officer*	*CASE Category*
McFarland, R. H.	LARC/Downing, D. R. LARC/MacE, W. D.	45-Elec Engr

NSG 7352 **Ohio University** **3243**
Study of mechanism of thigmonorphogensis in plants with special reference to role of ethylene and its significance to research with plants in space

Period	Obligations	
06/05/77-06/14/80	FY79: $35,000	TOTAL: $95,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jaffe, M. J.	HQ-SB/Halstead, T.W.	51-Biological Sci

NSG 3283 **University of Akron** **3244**
Finite elements for rotor/stator interactive forces in general engine dynamic simulator

Period	Obligations	
08/31/79-05/31/80	FY79: $51,950	TOTAL: $51,950
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, M. L. Padovan, J. Pertis, D. G.	LERC/Chamis, C. C. LERC/Kiraly, L. J.	41-Aero Engr

NAS 3-21609 **University of Cincinnati** **3245**
Viscous flow analysis in turbomachine rotors

Period	Obligations	
02/27/79-12/10/79	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tabakoff, W. Hamed, A.	LERC/McFarland, E. R. LERC/Sockol, P. M.	41-Aero Engr

NCA 2-130801 **University of Cincinnati** **3246**
Design and analysis of closed loop guidance laws for VTOL and STOL vehicles

Period	Obligations	
08/15/78-11/15/79	FY79:	TOTAL: $14,412
Prin Invest	*NASA Tech Officer*	*CASE Category*
Slater, G. L.	ARC/Erzberger, H. ARC/Xenakis, G.	41-Aero Engr

NCA 2-130901 **University of Cincinnati** **3247**
Development of a parabolized Navier-Stokes solver and numerical coordinate generator for subsonic and transonic plane flows

Period	Obligations	
06/01/79-05/31/80	FY79: $12,377	TOTAL: $12,377
Prin Invest	*NASA Tech Officer*	*CASE Category*
Davis, R. T.	ARC/Rakich, J. V.	41-Aero Engr

NSG 1185 **University of Cincinnati** **3248**
Thermal analysis of composite panels with three-dimensional reinforced composites

Period	Obligations	
05/01/75-10/31/79	FY79: $21,997	TOTAL: $93,417
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Mikulas, M. M., Jr. LARC/Card, M. F.	49-Engr, NEC

NSG 1486 **University of Cincinnati** **3249**
Investigation of improved modal parameter estimation techniques

Period	Obligations	
01/16/78-02/28/80	FY79: $40,390	TOTAL: $73,902
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brown, D. L.	LARC/Monteith, J. H LARC/Pappa, R. S.	46-Mech Engr

NSG 3022 **University of Cincinnati** **3250**
Investigation of a new family of semiconductor diodes based upon bulk effects of deep impurities

Period	Obligations	
07/01/74-10/01/80	FY79: $242	TOTAL: $141,349
Prin Invest	*NASA Tech Officer*	*CASE Category*
Henderson, H. T.	LERC/Sundberg, G. R.	45-Elec Engr

NSG 3024 **University of Cincinnati** **3251**
Research into the use of silane pyrolytic deposition methods for SiO_2 growth in the construction of stable high energy density capacitors

Period	Obligations	
07/01/74-10/01/80	FY79:	TOTAL: $95,118
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nevin, J. H	LERC/Riley, T. J. LERC/Myers, I. T.	45-Elec Engr

NSG 3066 **University of Cincinnati** **3252**
Study of the fluid mechanics of a radial turbine scroll

Period	Obligations	
07/01/75-06/30/79	FY79:	TOTAL: $46,213
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tabakoff, W.	LERC/Stepka, F. S.	41-Aero Engr

NSG 3091 **University of Cincinnati** **3253**
Study of suitable isomers for gamma ray lasers

Period	Obligations	
12/15/75-06/01/79	FY79:	TOTAL: $34,268
Prin Invest	*NASA Tech Officer*	*CASE Category*
Selberg, B. P.	LERC/Blue, J. W.	13-Physics
Cronin, D. L.	LERC/Leonard, R. F.	

NSG 3147 **University of Cincinnati** **3254**
High-temperature low-cycle fatigue and crack propagation

Period	Obligations	
06/01/77-05/31/80	FY79: $28,522	TOTAL: $80,652
Prin Invest	*NASA Tech Officer*	*CASE Category*
Antolovich, S. D.	LERC/Miner, R. V., Jr	47-Materials Engr

NSG 3188 **University of Cincinnati** **3255**
Investigations into the geometry of straight and spiral bevel gears

Period	Obligations	
04/01/78-03/31/80	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huston, R. L.	LERC/Coy, J. J.	46-Mech Engr

NSG 3218 **University of Cincinnati** **3256**
Study of environmental solid particle effects on axial flow compressor

Period	Obligations	
11/15/78-11/15/8	FY79: $59,667	TOTAL: $59,667
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tabakoff, W.	LERC/Cobb, D. L.	46-Mech Engr
Hamed, A.		

NSG 3263 **University of Cincinnati** **3257**
A mechanistic evaluation of deformation and fracture in high temperature low cycle fatigue

Period	Obligations	
03/26/79-03/26/80	FY79: $29,579	TOTAL: $29,579
Prin Invest	*NASA Tech Officer*	*CASE Category*
Antolovich, S. D.	LERC/Hirschberg, M. H.	
	LERC/Halford, G. R.	47-Materials Engr

NSG 3267 **University of Cincinnati** **3258**
Analysis of internal viscous flows using theory of spines and implicit numerical methods

Period	Obligations	
04/02/79-04/02/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ghia, K. N.	LERC/Kao, H. C.	41-Aero Engr
Ghia, U.		

NAS 3-20392 **University of Dayton** **3259**
Continuation of the study for development of ATS and communications technology satellite: User experiments history

Period	Obligations	
02/04/77-01/04/78	FY79:	TOTAL: $49,904
Prin Invest	*NASA Tech Officer*	*CASE Category*
Engler, N. A.	LERC/Gentile, L. C.	42-Astro Engr
Scheffler, F. L.		

NAS 3-21355 **University of Dayton** **3260**
Cross impact assessment of fiber optic technology development

Period	Obligations	
03/21/78-03/14/79	FY79: $800	TOTAL: $17,576
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martino, J. P.	LERC/Stevenson, S. M.	
Lenz, R. C., Jr.	LERC/Merutka, J. P.	47-Materials Engr
Chen, K. L.		

NAS 3-21370 **University of Dayton** **3261**
Compilation of ATS-1, 3, 5, 6 and CTS user experiments documentation

Period	Obligations	
06/08/78-05/08/79	FY79:	TOTAL: $58,567
Prin Invest	*NASA Tech Officer*	*CASE Category*
Engler, N. A.	LERC/Gentile, L. C.	42-Astro Engr
Nash, T.		

NAS 3-21698 **University of Dayton** **3262**
Meeting for AGARD/NATO representatives

Period	Obligations	
08/31/78-11/10/78	FY79: $10,711	TOTAL: $16,711
Prin Invest	*NASA Tech Officer*	*CASE Category*
Militello, J.	LERC/Acurio, J.	41-Aero Engr

NAS 6-2456 **University of Dayton** **3263**
Atmospheric phenomena associated with falling spheres

Period	Obligations	
03/25/74-02/29/80	FY79: $30,036	TOTAL: $228,721
Prin Invest	*NASA Tech Officer*	*CASE Category*
Luers, J. K.	WFC/Duke, J. R.	31-Atmos Sci
	WFC/Schmidlin, F. J.	

NAS 8-31294 **University of Dayton** **3264**
Examination of requirements and methods for reporting atmospheric information

Period	Obligations	
01/16/75-01/31/79	FY79: $8,447	TOTAL: $166,471
Prin Invest	*NASA Tech Officer*	*CASE Category*
Leurs, J. K.	MSFC/Camp, D. W.	41-Aero Engr
Engler, N. A.	MSFC/Alexander, M. B.	

NAS 8-32111 — **University of Dayton** — **3265**
Turbulence study
Period: 07/21/76-02/29/80 | Obligations: FY79 $34,983 TOTAL: $139,602
Prin Invest: Luers, J. K. | NASA Tech Officer: MSFC/Camp, D. W.; MSFC/Alexander, M. B. | CASE Category: 41-Aero Engr

NAS 8-33369 — **University of Dayton** — **3266**
Examination of requirements and methods for reporting atmospheric information
Period: 02/12/79-02/11/80 | Obligations: FY79 $40,000 TOTAL: $40,000
Prin Invest: Leurs, J. K | NASA Tech Officer: MSFC/Camp, D. W.; MSFC/Thomas, P. E. | CASE Category: 31-Atmos Sci

NSG 2373 — **University of Dayton** — **3267**
Thermal protection coatings for improved weapons cook-off
Period: 02/01/79-12/31/79 | Obligations: FY79 $27,000 TOTAL: $27,000
Prin Invest: Salyer, I. O. | NASA Tech Officer: ARC/Kourtides, D. A. | CASE Category: 12-Chemistry

NSG 2374 — **University of Dayton** — **3268**
Combat damage-tolerant fire containment barriers
Period: 02/01/79-10/31/79 | Obligations: FY79 $22,873 TOTAL: $22,873
Prin Invest: Salyer, I. O. | NASA Tech Officer: ARC/Kourtides, D. A. | CASE Category: 12-Chemistry

NSG 6026 — **University of Dayton** — **3269**
Study of the effects of heavy rains on aircraft aerodynamics
Period: 04/01/79-09/30/79 | Obligations: FY79 $10,918 TOTAL: $10,918
Prin Invest: Luers, J. K | NASA Tech Officer: WFC/Melson, W. E., Jr; WFC/Parker, L. C. | CASE Category: 41-Aero Engr

NSG 7444 — **University of Dayton** — **3270**
An investigation of the cratering-induced motions occurring during the formation of bowl-shaped craters
Period: 06/01/78-02/29/80 | Obligations: FY79: TOTAL: $46,704
Prin Invest: Piekutowski, A. J | NASA Tech Officer: HQ-SL/Quaide, W. L.; HQ-SL/French, B. I. | CASE Category: 32-Geological Sci

NCC 3-5 — **University of Toledo** — **3271**
Evaluation of the performance of wind turbine concepts and operating wind turbines
Period: 09/15/79-09/14/80 | Obligations: FY79 $99,993 TOTAL: $99,993
Prin Invest: Keith, T. G., Jr. | NASA Tech Officer: LERC/Finnegan, P. M.; LERC/Cooksey, D. | CASE Category: 49-Engr, NEC

NSG 3084 — **University of Toledo** — **3272**
Multi-variable control and sensor evaluation for integrated air breathing propulsion systems
Period: 01/01/76-12/31/79 | Obligations: FY79 $12,000 TOTAL: $64,790
Prin Invest: Leininger, G. G. | NASA Tech Officer: LERC/Merrill, W. C.; LERC/Zeller, J. R. | CASE Category: 45-Elec Engr

NSG 3099 — **University of Toledo** — **3273**
Energy transfer mechanism in a laser-sustained flowing-gas plasma
Period: 03/15/76-08/14/79 | Obligations: FY79: TOTAL: $17,169
Prin Invest: Rush, W. F. | NASA Tech Officer: LERC/Connolley, D. J | CASE Category: 43-Physics

NSG 3121 — **University of Toledo** — **3274**
Mass transport phenomena between bubbles and dissolved gases in liquids in a zero-g environment
Period: 09/01/76-01/01/80 | Obligations: FY79 TOTAL: $6,001
Prin Invest: Dewitt, K. J. | NASA Tech Officer: LERC/Labus, T. L. | CASE Category: 49-Engr, NEC

NSG 3139 — **University of Toledo** — **3275**
Stability analysis of wind turbines with long, flexible blades
Period: 02/22/77-01/31/80 | Obligations: FY79 $51,947 TOTAL: $141,943
Prin Invest: Koza, K. R. | NASA Tech Officer: LERC/Chamis, C. C. | CASE Category: 41-Aero Engr

NSG 3156 — **University of Toledo** — **3276**
Analysis of the stirling engine oil pumping ring seal
Period: 07/01/77-02/28/81 | Obligations: FY79 TOTAL: $36,384
Prin Invest: Keith, T. G., Jr; Smith, P. J | NASA Tech Officer: LERC/Cunningham, R. E.; LERC/Ludwig, L. P. | CASE Category: 46-Mech Engr

NSG 3171 — **University of Toledo** — **3277**
Properties of the multivariable Nyquist array method
Period: 01/01/77-10/31/79 | Obligations: FY79: $31,200 TOTAL: $61,200
Prin Invest: Leininger, G. G. | NASA Tech Offic: LERC/Lehtinen, B. | CASE Category: 45-Elec Engr

NSG 3250 — **University of Toledo** — **3278**
Thermodynamics of the potassium-sulfur-oxygen and related items
Period: 06/15/79-06/13/80 | Obligations: FY79 $38,326 TOTAL: $38,326
Prin Invest: Edwards, J. G. | NASA Tech Officer: LERC/Stearns, C. A.; LERC/Kohl, F. J. | CASE Category: 14-Materials

NSG 3281 **University of Toledo** **3279**
An investigation of the high frequency performance of series resonant inverters

Period	Obligations	
06/01/79-05/31/81	FY79: $24,962	TOTAL: $24,962
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stuart, T. A	LERC/Gruber, R. P.	45-Elec Engr

NSG 5183 **University of Toledo** **3280**
Research of the temporal line-blanketing effects for photometric variations

Period	Obligations	
07/01/77-06/30/78	FY79:	TOTAL $2,285
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molnar, M. R.	GSFC/Kupperian, J. E., Jr	11-Astronomy

NSG 5207 **University of Toledo** **3281**
Coordinated Copernicus and ground-based observations of the radio binaries

Period	Obligations	
09/01/77-03/31/79	FY79:	TOTAL $2,753
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bopp, B. W	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5359 **University of Toledo** **3282**
Ultraviolet observations of various type supergiants

Period	Obligations	
06/01/79-05/31/80	FY 79: $4,700	TOTAL: $4,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morrison, N. D.	GSFC/Boggess, A	11-Astronomy
Kunasz, P. B.		

NSG 5388 **University of Toledo** **3283**
Phase function studies in reflection nebulae with the international ultraviolet experiment

Period	Obligations	
07/01/79-12/31/79	FY79: $8,028	TOTAL: $8,028
Prin Invest	*NASA Tech Officer*	*CASE Category*
Witt, A. N	GSFC/Boggess, A.	11-Astronomy
Stecher, T. P.		
Bohlin R. C		

NSG 7041 **University of Toledo** **3284**
Measurement of the ultraviolet surface brightness of reflection nebulae with the Dutch national satellite

Period	Obligations	
12/15/74-03/15/78	FY79	TOTAL $29,396
Prin Invest	*NASA Tech Officer*	*CASE Category*
Witt, A. N.	HQ-SC/Rosendhal, J. D.	11-Astronomy
	HQ-SC/Roman, N. G	

NSG 7138 **University of Toledo** **3285**
Satellite ultraviolet data analysis program

Period	Obligations	
05/01/75-04/30/78	FY79:	TOTAL: $31,030
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molnar, M. R.	HQ-SC/Roman, N. G	11-Astronomy
	HQ-SC/Rosendhal, J. D	

NSG 7301 **University of Toledo** **3286**
Physical study of comets

Period	Obligations	
01/01/77-09/30/79	FY79:	TOTAL $19,928
Prin Invest	*NASA Tech Officer*	*CASE Category*
Delsemme, A. H	HQ-SL/Murphy, R. E.	11-Astronomy
	HQ-SL/Fellows, R. F	

NSG 7424 **University of Toledo** **3287**
Conference, April 1978 'Cella Molecular Biology in Space'

Period	Obligations	
03/15/78-03/15/79	FY79:	TOTAL $19,511
Prin Invest	*NASA Tech Officer*	*CASE Category*
Diehn, B.	HQ-SB/Geib, D. S	51-Biological Sci
Deamer, D	HQ-SB/Young, R. S	

NSG 7431 **University of Toledo** **3288**
Ultraviolet studies of reflection nebulae

Period	Obligations	
03/01/78-12/31/79	FY79:	TOTAL $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Witt, A. N.	HQ-SC/Rosendhal, J. D	11-Astronomy
	HQ-SC/Roman, N. G	

NSG 7475 **University of Toledo** **3289**
Copernicus and buss observations of AP stars

Period	Obligations	
07/01/78-06/30/79	FY79:	TOTAL $11,628
Prin Invest	*NASA Tech Officer*	*CASE Category*
Molnar, M. R	HQ-SC/Roman, N. G	11-Astronomy
	HQ-SC/Rosendhal, J. D	

NSG 7620 **University of Toledo** **3290**
Phase function studies in reflection nebulae

Period	Obligations	
09/01/79-08/01/80	FY79: $13,245	TOTAL $13,245
Prin Invest	*NASA Tech Officer*	*CASE Category*
Witt, A. N.	HQ-SC/Weiler, E. J	11-Astronomy
	HQ-SC/Roman, N. G.	

W-14168 **University of Toledo** **3291**
The Proceedings of International Astronautical Union - Colloquium

Period	Obligations	
09/01/76-08/31/77	FY79	TOTAL $4,723
Prin Invest	*NASA Tech Officer*	*CASE Category*
Delsemme, A. H	HQ-SL/Fellows, R. F	19-Phys Sci, NEC

OHIO (Continued)

NCA 2-875801 **Wright State University** **3292**
Motion sickness in the cat: An evaluation of vestibular habituation rates and the incidence of sickness

Period	Obligations	
01/01/78-12/31/79	FY79: $26,496	TOTAL: $44,644
Prin Invest	*NASA Tech Officer*	*CASE Category*
Crampton, G. H.	ARC/Daunton, N. G.	59-Life Sci, NEC

NGT 36-024-790 **Wright State University** **3293**
Aerospace medicine residency program

Period	Obligations	
07/01/78-06/30/80	FY79: $312,569	TOTAL: $312,569
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mohler, S. R	HQ-SB/Nicogossian, A. E.	
Beljan, J.	HQ-SB/Billingham, J.	59-Life Sci, NEC

NSG 1417 **Wright State University** **3294**
Computation of unsteady stability derivatives from a simplified aerodynamic force model

Period	Obligations	
09/01/77-09/30/79	FY79:	TOTAL: $32,874
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wells, W. R.	LARC/Queijo, M. J.	41-Aero Engr
	LARC/Suit, W. T.	

NSG 3240 **Wright State University** **3295**
Atomic structure relationship in amorphous and crystalline boron fibers

Period	Obligations	
12/01/78-08/01/79	FY79: $11,306	TOTAL: $11,306
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bambakidis, G.	LERC/DiCarlo, J. A.	13-Physics
	LERC/Grimes, H. H.	

OKLAHOMA

NAS13-111 **Murray State College** **3296**
Conduct short courses in remote sensing

Period	Obligations	
04/02/79-04/02/80	FY79: $24,231	TOTAL: $24,231
Prin Invest	*NASA Tech Officer*	*CASE Category*
Franklin, W. A.	NSTL/Atwell, B. H.	31-Atmos Sci

NAS 2-9877 **Oklahoma State University** **3297**
Development and execution of a visitor and tour program

Period	Obligations	
11/01/77-10/31/79	FY79: $137,100	TOTAL: $279,736
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wiggins, K. E.	ARC/Miller, S. A.	99-Multi-Discip

NAS 6-2970 **Oklahoma State University** **3298**
Mobile telemetry tracking systems

Period	Obligation	
02/01/79-05/30/80	FY79: $207,290	TOTAL: $207,290
Prin Invest	*NASA Tech Officer*	*CASE Category*
Buck, R. F.	WFC/West, W. W.	49-Engr, NEC
	WFC/Powell, W. R.	

NAS 9-15692 **Oklahoma State University** **3299**
Study of benefits of LANDSAT data

Period	Obligations	
11/01/78-12/31/79	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ray, D. E.	JSC/Marquis, D. L.	32-Geological Sci

NSG 1467 **Oklahoma State University** **3300**
An experimental study of the noise generating mechanism in supersonic jets

Period	Obligations	
11/15/77-10/31/79	FY79:	TOTAL: $34,120
Prin Invest	*NASA Tech Officer*	*CASE Category*
McLaughlin, D. K.	LARC/Seiner, J. M.	41-Aero Engr
	LARC/Maestrello, L.	

NSG 2396 **Oklahoma State University** **3301**
Study of boundary layer transition using transonic-cone preston-tube data

Period	Obligations	
07/01/79-09/30/80	FY79: $47,830	TOTAL: $47,830
Prin Invest	*NASA Tech Officer*	*CASE Category*
Moretti, P. M.	ARC/Steinle, F. W., Jr.	41-Aero Engr
Reed, T. D.	ARC/Daugherty, J. C.	

NSG 4018 **Oklahoma State University** **3302**
Study of handling qualities of large control configured aircraft

Period	Obligations	
01/01/79-12/31/79	FY79: $24,680	TOTAL: $24,680
Prin Invest	*NASA Tech Officer*	*CASE Category*
Swain, R. L.	DFRC/Gilyard, G. B	41-Aero Engr

NSG 6018 **Oklahoma State University** **3303**
Investigation for improved precision in aerial application equipment

Period	Obligations	
10/01/77-09/30/79	FY79: $39,404	TOTAL: $99,794
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roth, L. O.	WFC/Carr, R. E.	49-Engr, NEC
Whitney, R. W.		

NSG 7640 **Oklahoma State University** **3304**
Remote sensing applications to Oklahoma resources and environmental problems

Period	Obligations	
09/01/79-08/31/82	FY79: $165,000	TOTAL: $165,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Walsh, S.	HQ-ET/Vitale, J. A.	31-Atmos Sci

OKLAHOMA (Continued)

NASW 3007 **Southeastern Oklahoma State College** **3305**
Operation of the technology use center

Period	Obligations	
01/01/77-06/30/78	FY79:	TOTAL: $128,480
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Gold, C. H.	HQ-ET/Bivins, R. G.	99-Multi-Discip

NASW 3180 **Southeastern Oklahoma State College** **3306**
Operation of a NASA Industrial Applic... n Center

Period	Obligations	
10/01/78-06/30/79	FY79: $160,272	TOTAL: $160,272
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Oliver, R.	HQ-ET/Bivins, R. G.	49-Engr, NEC

NSG 2282 **University of Oklahoma - Health Center** **3307**
Central and peripheral mechanisms underlying cardiovascular deconditioning in the unanesthetized primate

Period	Obligations	
11/01/77-10/31/79	FY79: $43,344	TOTAL: $88,579
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Stone, H. L.	ARC/Sandler, H.	56-Medical Sciences

NAS 5-25375 **University of Oklahoma - Norman** **3308**
Satellite data assimilation in numerical forecast models

Period	Obligations	
12/05/78-12/04/80	FY79: $55,835	TOTAL: $55,835
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Sasaki, Y. K.	GSFC/Greaves, J. R. GSFC/Stetina, F. L.	31-Atmos Sci

NAS 8-31377 **University of Oklahoma - Norman** **3309**
Integrating upper and lower atmospheric wind profiles and statistics

Period	Obligations	
03/17/75-04/20/79	FY79:	TOTAL: $82,929
Prin Invest	*NASA Tech Officer*	*CASE Categor*
McCarthy, J. Blick, E. F.	MSFC/Camp, D. W. MSFC/Fichtl, G. H.	31-Atmos Sci

NAS 8-33330 **University of Oklahoma - Norman** **3310**
Observations of the rapid variable AE Aquarius in the HEAO-B guest investigator program: Observations of selected superclusters

Period	Obligations	
02/05/79-02/04/80	FY79: $3,886	TOTAL: $3,886
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Chincarini, G. L. Herczeg, T. J.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS13-122 **University of Oklahoma - Norman** **3311**
To provide for a second year of effo... establishing LANDSAT workshop

Period	Obligations	
06/01/79-05/31/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Harrington, J. A.	NSTL/Atwell B. H.	32-Geological Sci

NCA 2-580901 **University of Oklahoma - Norman** **3312**
Cardiac function and exercise training

Period	Obligations	
07/01/79-06/30/81	FY79: $4,000	TOTAL: $4,000
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Stone, H. L.	ARC/Sandler, H.	51-Biological Sci

NGT 37-003-760 **University of Oklahoma - Norman** **3313**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/76-05/31/80	FY79:	TOTAL: $31,500
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Thomas, G.	HQ-LU/Pohly, J. G. HQ-U/Jenkins, H. G.	49-Engr, NEC

NSG 1481 **University of Oklahoma - Norman** **3314**
Miniature piezoresistive solid state integrated pressure sensor

Period	Obligations	
01/01/78-10/31/79	FY79: $53,811	TOTAL: $90,462
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Kahng, S. K.	LARC/Gross, C. LARC/Ocheltree, S. L.	45-Elec Engr

NSG 5257 **University of Oklahoma - Norman** **3315**
Research of the ultraviolet spectrum of a massive triple system OAO

Period	Obligations	
03/15/78-03/14/79	FY79:	TOTAL: $572
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Herczeg, T. J.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

OREGON

NSG 2387 **Oregon Graduate Center** **3316**
Evaluation of turbulence-induced noise in coherent anti Stokes/Raman scattering

Period	Obligations	
06/01/79-02/28/80	FY79: $14,970	TOTAL: $14,970
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Elliott, R. A.	ARC/McKenzie, R. L.	13-Physics

NSG 7457 **Oregon Graduate Center** **3317**
Spatial and temporal variations in atmospheric carbon concentration

Period	Obligations	
05/01/78-05/30/80	FY79: $75,000	TOTAL: $149,100
Prin Invest	*NASA Tech Officer*	*CASE Categor*
Rasmussen, R. A.	HQ-EB/Kakar, R. K.	31-Atmos Sci

OREGON (Continued)

NAS 5-23738 **Oregon State University** **3318**
Ocean color ground truth support

Period	Obligations	
10/21/76-10/31/79	FY79:	TOTAL: $101,558
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zaneveld, R. V.	GSFC/Mueller, J. L.	39-Env Sci, NEC
Pak, H.		

NAS 8-32694 **Oregon State University** **3319**
Frontogenesis study

Period	Obligations	
07/01/78-06/30/79	FY79:	TOTAL: $12,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barber, D. A.	MSFC/Hill, C. K.	31-Atmos Sci
	MSFC/Thomas, P. E.	

NAS 9-14860 **Oregon State University** **3320**
Assessment of the impact of increased solar ultraviolet radiation upon marine ecosystems

Period	Obligations	
10/08/75-12/07/79	FY79: $60,000	TOTAL: $260,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Worrest, R. C.	JSC/Nachtwey, D. S.	54-Env Biology

NCA 2-586901 **Oregon State University** **3321**
Joint use of resources for improved LANDSAT data processing capability

Period	Obligations	
06/01/79-12/20/79	FY79: $15,364	TOTAL: $15,364
Prin Invest	*NASA Tech Officer*	*CASE Category*
Murray, R. J.	ARC/Wilson, D. E	21-Mathematics

NGL 38-002-020 **Oregon State University** **3322**
Study of elemental abundances in meteorite and terrestrial matter

Period	Obligations	
08/26/66-02/28/78	FY79:	TOTAL: $413,622
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmitt, R. A.	HQ-SL/Bryson, R. P.	32-Geological Sci
	HQ-SL/Roberson, F. I.	

NGL 38-002-039 **Oregon State University** **3323**
Lunar sample analysis

Period	Obligations	
01/19/71-01/31/80	FY79: $55,210	TOTAL: $536,867
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schmitt, R. A.	JSC/Harris, J. W.	13-Physics

NGL 38-002-053 **Oregon State University** **3324**
Development and operation of an environmental remote sensing applications laboratory

Period	Obligations	
03/16/72-03/31/82	FY79: $175,000	TOTAL: $1,025,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schrumpf, B. J.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 4013 **Oregon State University** **3325**
Problems associated with flight control in turbulence

Period	Obligations	
09/01/77-09/30/78	FY79:	TOTAL: $23,818
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ruzicka, J.	DFRC/Illiff, K. W.	41-Aero Engr

NSG 5308 **Oregon State University** **3326**
Analyses of the surface heat balance over the world ocean

Period	Obligations	
12/01/78-11/30/79	FY79 $56,434	TOTAL $56,434
Prin Invest	*NASA Tech Officer*	*CASE Category*
Esbensen, S.	GSFC/Halem, M.	31-Atmos Sci

NSG 5343 **Oregon State University** **3327**
Techniques for applications of satellite data to the quantitative forecasting of precipitation

Period	Obligations	
05/01/79-04/30/80	FY79: $64,660	TOTAL: $64,660
Prin Invest	*NASA Tech Officer*	*CASE Category*
Decker, F. W	GSFC/Adler, R. F.	31-Atmos Sci

NSG 5353 **Oregon State University** **3328**
Numerical simulation of large scale ocean atmosphere coupling and the ocean's role in climate

Period	Obligations	
05/01/79-04/30/80	FY79: $194,059	TOTAL: $194,059
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gates, W. L.	GSFC/Halem, M.	31-Atmos Sci

NSG 7178 **Oregon State University** **3329**
Examination of the suggested modes of origin of channels found on the Moon and Mars

Period	Obligations	
01/01/76-01/31/80	FY79: $25,228	TOTAL: $85,878
Prin Invest	*NASA Tech Officer*	*CASE Category*
Komar, P. D.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

NCA 2-587801 **University of Oregon - Eugene** **3330**
A computer-based measure of vocal stress

Period	Obligations	
07/01/78-10/31/79	FY79: $5,035	TOTAL: $20,020
Prin Invest	*NASA Tech Officer*	*CASE Category*
Murray, R. J.	ARC/Wright, R. H.	69-Psych, NEC
Branscomb, H.		

NGL 38-003-022 **University of Oregon - Eugene** **3331**
Lunar sample analysis

Period	Obligations	
02/09/71-01/31/81	FY79: $44,[illegible]	TOTAL: $625,874
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weill, D. F.	JSC/Harris, J. W.	13-Physics

OREGON (Continued)

NGR 38-003-020 **University of Oregon - Eugene** **3332**
Inspection of petrologically significant physical and chemical properties of the silicate melts

Period	Obligations	
06/01/70-02/28/81	FY79: $62,387	TOTAL: $778,167
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Weill, D. F.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E	

NSG 7360 **University of Oregon - Eugene** **3333**
Far-infrared measurements of trace constituents

Period	Obligations	
06/01/77-09/30/79	FY79: $44,760	TOTAL: $88,640
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nolt, I. G.	HQ-ST/Kakar, R. K.	31-Atmos Sci
Radostitz, J. V.	HQ-ST/Tilford, S. G.	
Donnelly, R. J.		

NSG 7531 **University of Oregon - Eugene** **3334**
Infrared & visible polarimetry of planetary bodies

Period	Obligations	
01/01/79-12/31/79	FY79: $12,333	TOTAL: $12,333
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kemp, J. C.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NSG 7639 **University of Oregon - Eugene** **3335**
Spectrum of the continuous gravitational radiation background

Period	Obligations	
09/30/79-09/29/80	FY79: $11,045	TOTAL: $11,045
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zimmerman, R. L.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Weiler, E. J.	

NAS 8-32162 **University of Oregon-Health Sci. Ctr.** **3336**
Analytical study of electrophoretic characterization of kidney cells

Period	Obligations	
08/06/76-06/05/78	FY79:	TOTAL: $53,666
Prin Invest	*NASA Tech Officer*	*CASE Category*
Knox, R. J.	MSFC/Scott, F. E.	59-Life Sci, NEC
	MSFC/Miller, T. Y.	

NAS 8-32353 **University of Oregon-Health Sci. Ctr.** **3337**
SPAR project: Counter current distribution of biologicals

Period	Obligations	
12/01/76-12/31/77	FY79:	TOTAL: $57,664
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brooks, D. E.	MSFC/Reeves, F. A.	51-Biological Sci
	MSFC/Chassay, R. P.	

NAS 8-32609 **University of Oregon-Health Sci. Ctr.** **3338**
Electrophoretic separator experiments

Period	Obligations	
08/08/77-04/30/79	FY79: $22,842	TOTAL: $87,741
Prin Invest	*NASA Tech Officer*	*CASE Category*
Seaman, G. V.	MSFC/Reeves, F. A.	59-Life Sci, NEC
	MSFC/Snyder, R. S.	

NAS 8-32817 **University of Oregon-Health Sci. Ctr.** **3339**
Counter current distribution of biologic cells

Period	Obligations	
03/07/78-03/31/79	FY79:	TOTAL: $49,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brooks, D. E.	MSFC/Nerrin, B. N.	59-Life Sci, NEC
	MSFC/Snyder, R. S.	

PENNSYLVANIA

NSG 3136 **Bucknell University** **3340**
Development of a predictive model for thermal and thermo-oxidative stability of PMR polyimide graphite fiber composites

Period	Obligations	
02/01/77-01/31/80	FY79: $15,975	TOTAL: $44,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snyder, W. J.	LERC/Gluyas, R. E.	43-Chem Engr
	LERC/Serafini, T. T.	

NAS 3-20370 **Carnegie - Mellon University** **3341**
Evaluation of the mechanical properties of electroslag refined Fe-12 Ni alloys

Period	Obligations	
09/02/76-08/01/78	FY79:	TOTAL: $36,977
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bhat, G. K.	LERC/Witzke, W. R.	47-Materials Engr

NGT 39-087-790 **Carnegie - Mellon University** **3342**
Pre-cooperative engineering education program

Period	Obligations	
08/01/79-07/31/80	FY79: $4,229	TOTAL: $4,229
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cathie, W.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	LERC/Allen, R. P.	

NSG 3172 **Carnegie - Mellon University** **3343**
Evaluation of failure mechanics in composites

Period	Obligations	
12/01/77-11/30/79	FY79: $30,000	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Swedlow, J. L.	LERC/Srawley, J. E.	46-Mech Engr
	LERC/Brown, W. F., Jr.	

NSG 3202 **Carnegie - Mellon University** **3344**
A preliminary thermal analysis of reciprocating seals for the stirling engine

Period	Obligations	
07/01/78-12/01/79	FY79: $29,632	TOTAL: $36,347
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hughes, W. F.	LERC/Cunningham, R.E.	46-Mech Engr
	LERC/Ludwig, L. P.	

NSG 7585 **Carnegie - Mellon University** **3345**
Iron-60 as a heat source and chronometer in early solar system

Period	Obligations	
05/01/79-04/30/81	FY79: $59,174	TOTAL: $59,174
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kohman, T. P.	HQ-SL/French, B. M. HQ-SL/Quaide, W. L.	32-Geological Sci

NAS 1-14393 **Drexel University** **3346**
Science support for the limb infrared monitor of the stratosphere experiment

Period	Obligations	
04/01/76-10/31/80	FY79: $53,556	TOTAL: $106,556
Prin Invest	*NASA Tech Officer*	*CASE Category*
House, F. B.	LARC/Russell, J. M., III LARC/James, R. L., Jr.	31-Atmos Sci

NAS 5-22946 **Drexel University** **3347**
Science support for the earth radiation budget experiment on Nimbus G

Period	Obligations	
01/12/76-10/01/80	FY79: $2,900	TOTAL: $123,008
Prin Invest	*NASA Tech Officer*	*CASE Category*
House, F. B.	GSFC/Nelsen, E. D.	13-Physics

NAS 8-33372 **Drexel University** **3348**
A critical experiment to support possible space flight

Period	Obligations	
02/12/79-02/11/80	FY79: $29,057	TOTAL: $29,057
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lord, A. E.	MSFC/Black, R. E. MSFC/Williams, J. R.	31-Atmos Sci

NAS 9-15915 **Drexel University** **3349**
Bone growth and alteration via endosseous implants

Period	Obligations	
07/01/79-12/31/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kamel, I. L.	JSC/Altchuler, S. I.	56-Medical Sciences

NSG 1496 **Drexel University** **3350**
Research on singular perturbation techniques for on-line optimal control

Period	Obligations	
02/01/78-12/31/79	FY79: $24,650	TOTAL: $49,418
Prin Invest	*NASA Tech Officer*	*CASE Category*
Calise, A. J.	LARC/Price, D. B.	41-Aero Engr

NSG 1545 **Drexel University** **3351**
Development of a climate model using a time-dependent energy balance formulation

Period	Obligations	
07/01/78-06/30/80	FY79: $23,100	TOTAL: $44,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
House, F. B. Jafolia, J. C.	LARC/Smith, G. L.	31-Atmos Sci

NSG 1606 **Drexel University** **3352**
Fracture behavior of boron aluminum and graphite polyimide composites and at room and elevated temperatures

Period	Obligations	
07/01/79-06/30/80	FY79: $49,400	TOTAL: $49,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Awerbuch, J. Koczak, M. J.	LARC/Poe, C. C., Jr. LARC/Kennedy, J. M.	47-Materials Engr

NSG 2357 **Drexel University** **3353**
Feasibility studies for light scattering experiments in space to determine the velocity relaxation of small particles in a fluid

Period	Obligations	
01/01/79-12/31/79	FY79: $23,000	TOTAL: $23,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Acquista, C. A. Narducci, L.	ARC/Brooks, W. F. ARC/Lum, H.	13-Physics

NSG 3090 **Drexel University** **3354**
Theory for nonlinear reaction-diffusion phenomena with application to free radical recombination

Period	Obligations	
10/01/75-09/31/78	FY79:	TOTAL: $75,188
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosen, G. H.	LERC/Zeleznik, F. J.	21-Mathematics

NSG 3128 **Drexel University** **3355**
Interface characterization of metal matrix composites

Period	Obligations	
10/01/76-10/31/79	FY79: $35,000	TOTAL: $105,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Koczak, M. J. Lawley, A.	LERC/Grimes, H. H.	47-Materials Engr

NSG 5162 **Drexel University** **3356**
Utilization of satellite data and regional scale numerical models in short range weather forecasting

Period	Obligations	
03/01/77-06/30/80	FY79: $40,000	TOTAL: $244,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kreitzberg, C.	GSFC/Ucellini, L. W.	31-Atmos Sci

NSG 6007 **Drexel University** **3357**
Electrochemical concentration cell ozonesonde performance tests

Period	Obligations	
05/01/76-08/31/79	FY79:	TOTAL: $103,250
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hackney, R. L. Hackney, K. R.	WFC/Holland, A. C.	31-Atmos Sci

NSG 6019 **Drexel University** **3358**
Theoretical investigations into the scattering of light by real aerosols

Period	Obligations	
11/01/77-10/31/79	FY79:	TOTAL: $17,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Acquista, C. R.	WFC/Holland, A. C.	13-Physics

NSG 6035 **Drexel University** **3359**
A study of optimal electrode preparation for the electrochemical concentration cell ozonesonde

Period	*Obligations*	
07/01/79-09/30/79	FY79: $5,600	TOTAL: $5,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thornton, D. C.	WFC/Torres, A. L.	12-Chemistry

NSG 7491 **Drexel University** **3360**
Theory for nonlinear reaction-diffusion phenomena with application to free radical recombination IV

Period	*Obligations*	
10/01/78-09/30/79	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosen, G. H.	HQ-RR/Lundholm, J. G., Jr.	13-Physics

NSG 7494 **Drexel University** **3361**
Vectoroculography: Mathematical lead vector improvement for the electroculogram

Period	*Obligations*	
11/01/78-10/31/79	FY79: $40,700	TOTAL: $40,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dubin, S.	HQ-SB/Larson, C. A.	59-Life Sci, NEC
Kwatny, E.	HQ-SB/Winter, D. L.	

NAS 8-32951 **Lehigh University** **3362**
Experiment for materials processing in space production of large particle size monodisperse latexes

Period	*Obligations*	
02/22/78-02/22/83	FY79: $91,000	TOTAL: $265,315
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanDerHoff, J. W.	MSFC/Williams, J. R.	13-Physics
	MSFC/Kornfeld, D. M.	

NCA 2-380901 **Lehigh University** **3363**
The long wavelength infrared absorption by SO2 and its importance in forming Venus' greenhouse

Period	*Obligations*	
05/15/79-11/30/79	FY79: $8,880	TOTAL: $8,880
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lovejoy, R. W.	ARC/Boese, R. W	12-Chemistry

NGR 39-007-011 **Lehigh University** **3364**
Investigation of fatigue-crack propagation in thin plates and shells

Period	*Obligations*	
11/30/64-10/31/79	FY79: $30,000	TOTAL: $442,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Erdogan, F.	LARC/Everett, R. A., Jr.	
	LARC/Fichter, W. B.	21-Mathematics

NGR 39-007-043 **Lehigh University** **3365**
Shock and thermal history of unusual iron meteorites

Period	*Obligations*	
05/24/71-03/31/80	FY79: $78,346	TOTAL: $293,586
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goldstein, J. I.	HQ-SL/French, B. M.	32-Geological Sci
	HQ-SL/Quaide, W. L.	

NGR 39-007-056 **Lehigh University** **3366**
Lunar sample analysis

Period	*Obligations*	
01/12/71-01/31/81	FY79:	TOTAL: $474,096
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goldstein, J. I.	JSC/Harris, J. W.	12-Chemistry

NGR 39-007-061 **Lehigh University** **3367**
Investigation of generation of X-rays in close binary stars

Period	*Obligations*	
03/10/73-06/30/80	FY79:	TOTAL: $47,965
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCluskey, G. E., Jr.	JSC/Potter, A. E.	11-Astronomy

NGR 39-007-064 **Lehigh University** **3368**
Lunar sample analysis

Period	*Obligations*	
06/07/71-03/31/79	FY79:	TOTAL $325,915
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sclar, C. B.	JSC/Harris, J. W.	13-Physics

NSG 3162 **Lehigh University** **3369**
Blade flutter in compressors and fans: Numerical simulation of aerodynamic loading

Period	*Obligations*	
01/01/78-12/31/80	FY79:	TOTAL: $67,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rockwell, D. O.	LERC/Batterton, P. G.	41-Aero Engr
Johnson, S. H.	LERC/Kurkov, A. P.	

NSG 3179 **Lehigh University** **3370**
Time-dependent response of undirectional and laminate composites under static and impact loading

Period	*Obligations*	
02/13/78-02/12/80	FY79: $50,000	TOTAL: $102,315
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sih, G. C.	LERC/Chamis, C. C.	49-Engr, NEC
	LERC/Smith, G. T.	

NSG 3193 **Lehigh University** **3371**
Application of fine mesh particles to metal and organic substrates for ion beam texturing applications

Period	*Obligations*	
04/10/78-04/09/79	FY79:	TOTAL $14,844
Prin Invest	*NASA Tech Officer*	*CASE Category*
Micale, F. J.	LERC/Sovey, J. S.	47-Materials Engr

NSG 5386 **Lehigh University** **3372**
Mass flow and evolution in close binaries including simultaneous observations of X-ray binaries

Period	Obligations	
07/01/79-06/30/80	FY79: $8,000	TOTAL: $8,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCluskey, G. E., Jr. Boldt, E. A. Holt, S. S.	GSFC/Boggess, A.	11-Astronomy

NAS 5-23800 **Lincoln University** **3373**
Medical information management system

Period	Obligations	
11/22/76-03/02/80	FY79: $50,000	TOTAL: $128,336
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frankowsky, J. W.	GSFC/Alterescu, S. KSC/Buchanan, P.	56-Medical Sciences

NSG 2122 **Pennsylvania State Univ -hershey Med.** **3374**
Subfornical organ and salt/water balance

Period	Obligations	
01/01/76-12/31/79	FY79: $27,314	TOTAL: $95,152
Prin Invest	*NASA Tech Officer*	*CASE Category*
Severs, W. B.	ARC/Keil, L. C.	56-Medical Sciences

NAS 5-23859 **Pennsylvania State University** **3375**
U-2 and LANDSAT data processing and intralab analysis support

Period	Obligations	
01/21/77-11/15/79	FY79: $25,234	TOTAL: $159,477
Prin Invest	*NASA Tech Officer*	*CASE Category*
McMurtry, G. J.	GSFC/Alford, W. L.	39-Env Sci, NEC

NAS 5-24264 **Pennsylvania State University** **3376**
Application of satellite data to the study of urban heating patterns

Period	Obligations	
09/23/77-05/31/80	FY79: $21,955	TOTAL: $54,455
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carlson, T. N.	GSFC/Oseroff, H. GSFC/Stuart, L. M.	31-Atmos Sci

NAS 5-24329 **Pennsylvania State University** **3377**
Technology transfer study

Period	Obligations	
10/01/77-01/27/79	FY79:	TOTAL: $36,648
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feller, I. R.	GSFC/Golden, T. S.	99-Multi-Discip

NAS 5-25667 **Pennsylvania State University** **3378**
Development and evaluation of remote sensing techniques for soil surveys

Period	Obligations	
05/21/79-05/15/80	FY79: $9,993	TOTAL: $9,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Petersen, G. W.	GSFC/Irons, J.	39-Env Sci, NEC

NAS 5-25702 **Pennsylvania State University** **3379**
Office for remote sensing of earth resources analytical support

Period	Obligations	
06/14/79-02/14/80	FY79: $43,429	TOTAL: $43,429
Prin Invest	*NASA Tech Officer*	*CASE Category*
McMurtry, G. J.	GSFC/Labovitz, M.	21-Mathematics

NAS 6-2726 **Pennsylvania State University** **3380**
Stratosphere and mesosphere structure and circulation studies

Period	Obligations	
03/04/76-06/03/79	FY79:	TOTAL: $87,415
Prin Invest	*NASA Tech Officer*	*CASE Category*
Olivero, J.	WFC/Duke, J. R. WFC/Schmidlin, F. J.	31-Atmos Sci

NAS 6-2818 **Pennsylvania State University** **3381**
Development of a two-dimensional numerical model to test the relationship of rapid mesospheric warmings to intense tropospheric convection

Period	Obligations	
03/01/77-02/28/79	FY79:	TOTAL: $21,667
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, J. H.	WFC/Schmidlin, F. J.	31-Atmos Sci

NAS 6-2826 **Pennsylvania State University** **3382**
Analysis of stratospheric and mesospheric data

Period	Obligations	
04/18/77-07/17/78	FY79	TOTAL: $11,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hale, L. C.	WFC/Schmidlin, F. J. WFC/Duke, J. R.	31-Atmos Sci

NAS 9-15566 **Pennsylvania State University** **3383**
Purification and cultivation of human pituitary growth hormone secreting cells

Period	Obligations	
05/01/78-06/01/80	FY79: $85,000	TOTAL: $170,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hymer, W. C.	JSC/Morrison, D. R.	51-Biological Sci

NAS 9-15584 **Pennsylvania State University** **3384**
Kidney cell electrophoresis

Period	Obligations	
05/01/78-06/01/80	FY79: $74,800	TOTAL: $124,779
Prin Invest	*NASA Tech Officer*	*CASE Category*
Todd, P. W.	JSC/Morrison, D. R.	56-Medical Sciences

NAS 9-15798 **Pennsylvania State University** **3385**
Design and fabrication of a simulated remote acquisition unit for Spacelab experiments

Period	Obligations	
01/01/79-12/31/79	FY79: $28,460	TOTAL: $28,460
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mason, C. A.	JSC/Bailey, J. V.	45-Elec Engr

NASW 3256 **Pennsylvania State University** **3386**
Technology support for targeting the reentry of Skylab

Period	Obligations	
01/29/79-08/29/79	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-ML/Mahon, J. B.	42-Astro Engr

NCC 5 12 **Pennsylvania State University** **3387**
Research of combined use of remote sensing and seismic observations to infer geologically recent crust deformation

Period	Obligations	
05/01/79-04/30/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alexander, S. S. Gold, D. P.	GSFC/Allenby, R. J.	32-Geological Sci

NCC 5 19 **Pennsylvania State University** **3388**
Synthesis of regional crust and upper mantle structure from seismic and gravity data

Period	Obligations	
06/15/79-06/14/80	FY79: $52,800	TOTAL: $52,800
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Alexander, S. S.	GSFC/Allenby, R. J.	32-Geological Sci

NGL 39-009-003 **Pennsylvania State University** **3389**
Research on electron densities in upper ionosphere, including studies of rocket & separating capsule experimental techniques

Period	Obligations	
03/01/61-10/31/81	FY79: $174,000	TOTAL: $2,252,661
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nisbet, J. S.	HQ-ST/Kaiser, M. L. HQ-ST/Schmerling, E. R.	13-Physics

NGL 39-009-007 **Pennsylvania State University** **3390**
Investigation & analysis of flow phenomena of secondary motions in axial flow inducers

Period	Obligations	
12/15/63-02/29/80	FY79:	TOTAL: $279,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Britsch, W. R.	41-Aero Engr

NGL 39-009-010 **Pennsylvania State University** **3391**
Research to establish criteria for recognition of ancient meteorite impact craters whose characteristic surface forms have been obliterated by erosion

Period	Obligations	
08/08/63-10/31/79	FY79:	TOTAL: $169,563
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gold, D. P.	HQ-SL/Quaide, W. L.	32-Geological Sci

NGL 39-009-032 **Pennsylvania State University** **3392**
Study and evaluation of the constant-momentum mass spectrometer for ion analysis in the D and E regions of the ionosphere

Period	Obligations	
05/28/65-12/31/79	FY79:	TOTAL: $707,932
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kendall, B. R.	WFC/Ballance, C. W., Jr. WFC/Gray, J. W.	13-Physics

NGR 39-009-077 **Pennsylvania State University** **3393**
Investigation of near critical and supercritical burning of fuel droplets

Period	Obligations	
08/17/66-06/30/79	FY79:	TOTAL: $331,360
Prin Invest	*NASA Tech Officer*	*CASE Category*
Faeth, G. M.	LERC/Priem, R. J.	42-Astro Engr

NGR 39-009-180 **Pennsylvania State University** **3394**
Detection of microorganisms in their natural habitat

Period	Obligations	
06/12/70-09/30/78	FY79:	TOTAL: $285,141
Prin Invest	*NASA Tech Officer*	*CASE Category*
Casida, L. E., Jr.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 1308 **Pennsylvania State University** **3395**
Research in propellers for general aviation aircraft

Period	Obligations	
07/01/76-10/31/79	FY79: $67,928	TOTAL: $167,691
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCormick, B. W.	LARC/Fisher, B. D. LARC/Hall, A. W.	41-Aero Engr

NSG 1387 **Pennsylvania State University** **3396**
Growth, perfection, and characterization of triglycerine sulfate: A model for zero gravity growth

Period	Obligations	
03/01/77-08/31/79	FY79: $56,000	TOTAL: $106,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
White, W. B. Spear, K. E. Vedam, K.	LARC/Fripp, A. L. LARC/Crouch, R. K.	47-Materials Engr

NSG 1580 **Pennsylvania State University** **3397**
Broadbank jet noise amplification by a pure tone excitation

Period	Obligations	
12/01/78-11/30/79	FY79: $35,601	TOTAL: $35,601
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morris, P. J.	LARC/Gatski, T. B.	41-Aero Engr

NSG 2364 **Pennsylvania State University** **3398**
High polymers based on phosphazene and other inorganic systems

Period	Obligations	
01/01/79-12/31/79	FY79: $10,406	TOTAL: $10,406
Prin Invest	*NASA Tech Officer*	*CASE Category*
Allcock, H. R.	ARC/Fewell, L. L.	12-Chemistry

NSG 3012 **Pennsylvania State University** **3399**
Compressor or fan rotor wake characteristics

Period	Obligations	
06/28/74-01/27/80	FY79	TOTAL: $269,038
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eisenhuth, J.	LERC/Heidmann, M. F. LERC/Feiler, C. E.	41-Aero Engr

NSG 3016 **Pennsylvania State University** **3400**
Microstructural parameters and the impact resistance of ceramic turbine materials

Period	Obligations	
07/01/74-07/31/79	FY79:	TOTAL: $140,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bradt, R. C.	LERC/Sanders, W. A.	47-Materials Engr

NSG 3032 **Pennsylvania State University** **3401**
Blade end wall flows in compressors

Period	Obligations	
09/01/74-08/31/79	FY79:	TOTAL: $50,801
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3166 **Pennsylvania State University** **3402**
Mapping of electrical potential distributions with charged particle beams

Period	Obligations	
11/01/77-08/31/80	FY79: $34,857	TOTAL: $69,107
Prin Invest	*NASA Tech Officer*	*CASE Category*
Robinson, J. W.	LERC/Aron, P. R.	13-Physics

NSG 3212 **Pennsylvania State University** **3403**
End wall flows in rotors and stators of a single stage compressor

Period	Obligations	
08/01/78-10/09/79	FY79:	TOTAL: $61,114
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Sockol, P. M. LERC/Sandercock, D. M.	41-Aero Engr

NSG 3264 **Pennsylvania State University** **3404**
The boundary layer on compressor cascade blades

Period	Obligations	
06/04/79-06/30/80	FY79: $75,417	TOTAL: $75,417
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kubo, I.	LERC/Sanger, N. L.	41-Aero Engr

NSG 3265 **Pennsylvania State University** **3405**
The large scale structure of turbulance in a rotor wake

Period	Obligations	
07/01/79-06/30/80	FY79: $65,200	TOTAL: $65,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morris, P. J.	LERC/Englert, G. W.	41 Aero Engr

NSG 3266 **Pennsylvania State University** **3406**
Three-dimensional flow field inside compressor rotor passages, including blade boundary layers

Period	Obligations	
06/26/79-06/26/80	FY79: $74,556	TOTAL: $74,556
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lakshminarayana, B.	LERC/Sockol, P. M.	41-Aero Engr

NSG 3301 **Pennsylvania State University** **3407**
Mass analysis of neutral particles and ions released during electrical breakdowns on spacecraft surfaces

Period	Obligations	
09/04/79-09/03/80	FY79: $49,983	TOTAL: $49,983
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kendall, B. R.	LERC/Aron, P. R.	13-Physics

NSG 3304 **Pennsylvania State University** **3408**
Study of interactive aeroelastic and aerodynamic problems relating to general aviation propellers

Period	Obligations	
10/01/79-10/01/80	FY79: $77,955	TOTAL: $77,955
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCormick, B. W.	LERC/Mitchell, G. A.	41-Aero Engr

NSG 3306 **Pennsylvania State University** **3409**
An investigation of air solubility in jet fuel at high pressure

Period	Obligations	
09/01/79-08/31/80	FY79: $24,845	TOTAL: $24,845
Prin Invest	*NASA Tech Officer*	*CASE Category*
Faeth, G. M.	LERC/Marek, C. J.	46-Mech Engr

NSG 5185 **Pennsylvania State University** **3410**
Research of the nature and subsurface character of lineaments in Pennsylvania

Period	Obligations	
07/01/77-03/31/80	FY79:	TOTAL: $65,843
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alexander, S. S. Gold, D. P.	GSFC/Allenby, R. J. GSFC/Thomas, H. H.	32-Geological Sci

NSG 5205 **Pennsylvania State University** **3411**
Utilization of satellite data in mesoscale models

Period	Obligations	
09/01/77-11/30/79	FY79: $23,000	TOTAL: $69,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anthes, R. A.	GSFC/Ucellini, L. W.	31-Atmos Sci

NSG 5212 **Pennsylvania State University** **3412**
Study of nigh latitude thermospheric densities and flow patterns

Period	Obligations	
10/01/77-08/14/80	FY79: $23,000	TOTAL: $52,012
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nisbet, J. S.	GSFC/Spencer, N. W.	13-Physics

NSG 5276 **Pennsylvania State University** **3413**
Sythesis of regional crust and upper-mantle structure from seismic and gravity data

Period	Obligations	
06/15/78-06/14/79	FY79:	TOTAL: [illegible],000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alexander, S. S. Lavin, P. M.	GSFC/Allenby, R. J. GSFC/Mead, G. D.	32-Geological Sci

NSG 5347 **Pennsylvania State University** **3414**
Satellite data and dynamic principles in understanding global weather phenomena

Period	Obligations	
05/01/79-04/30/80	FY79: $58,905	TOTAL: $58,905
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clark, J. H.	GSFC/Greaves, J. R.	31-Atmos Sci
Dutton, J. A.		

NSG 6004 **Pennsylvania State University** **3415**
Studies of mesospheric ionization

Period	Obligations	
10/01/75-02/28/79	FY79:	TOTAL: $85,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ferguson, G. A.	WFC/Gray, J. W.	19-Phys Sci, NEC
	WFC/Pless, R. H.	

NSG 7120 **Pennsylvania State University** **3416**
Physicochemical basic for evaluating lunar petrogenesis

Period	Obligations	
02/01/75-04/30/79	FY79:	TOTAL: $67,894
Prin Invest	*NASA Tech Officer*	*CASE Category*
Muan, A.	HQ-SL/Goldstein, B. E.	
	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7193 **Pennsylvania State University** **3417**
Temporal and spatial stress distribution in the lunar interior and related phenomena

Period	Obligations	
03/01/76-12/31/78	FY79:	TOTAL: $75,182
Prin Invest	*NASA Tech Officer*	*CASE Category*
Alexander, S. S.	HQ-SL/Goldstein, B. E.	
Sammis, C.	HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7350 **Pennsylvania State University** **3418**
Wind tunnel test and laboratory evaluation of photo ionization probe

Period	Obligations	
05/01/77-07/31/78	FY79:	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hale, L. C.	HQ-ST/Tilford, S. G.	31-Atmos Sci
York, T. M.		

NSG 7465 **Pennsylvania State University** **3419**
Solubilities of C-O-S volatiles in lunar magmas and vapors

Period	Obligations	
07/01/78-03/31/80	FY79:	TOTAL: $26,218
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eggler, D.	HQ-SL/Quaide, W. E.	32-Geological Sci

NSG 7515 **Pennsylvania State University** **3420**
Structure-function studies on thermophilic glutamine synthetase

Period	Obligations	
10/01/78-12/31/79	FY79: $33,493	TOTAL: $33,493
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wedler, F. C.	HQ-SB/Young, R. S.	12-Chemistry

NCA 2-769901 **Swarthmore College** **3421**
Evaluation and modeling of the cardiovascular response to Lower Body Negative Pressure (LBNP)

Period	Obligations	
06/01/79-08/31/79	FY79: $8,468	TOTAL: $8,468
Prin Invest	*NASA Tech Officer*	*CASE Category*
Aburdene, M. F.	ARC/Goldwater, D.	56-Medical Sciences

NAS 9-14979 **Temple University** **3422**
Ultraviolet radiation-induced skin cancer in experimental animals

Period	Obligations	
04/26/76-07/31/80	FY79: $70,000	TOTAL: $294,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Urback, F.	JSC/Nachtwey, D. S.	
		56-Medical Sciences

NAS 2-10070 **University of Pennsylvania** **3423**
Development of theoretical models for graphite-like atomic structures

Period	Obligations	
10/02/78-08/30/79	FY79: $18,995	TOTAL: $18,995
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rabii, S.	ARC/Hansen, C. F.	13-Physics

NAS 5-25136 **University of Pennsylvania** **3424**
Synthetic aperture radiometry study

Period	Obligations	
08/18/78-09/18/79	FY79:	TOTAL: $9,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kritikos, H. N.	GSFC/Shiue, J. C.	45-Elec Engr

NAS 8-33088 **University of Pennsylvania** **3425**
X-ray variability of high galactic latitude sources

Period	Obligations	
06/01/78-05/31/79	FY79:	TOTAL: $17,145
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shen, B. S.	MSFC/Dailey, C. C.	11-Astronomy

NAS 8-33336 **University of Pennsylvania** **3426**
Simultaneous X-ray and radio observation of extragalactic sources

Period	Obligations	
02/20/79-02/19/80	FY79: $6,243	TOTAL: $6,243
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shen, B. S.	MSFC/Jones, J. B., Jr.	11-Astronomy
Johnston, K. J.		

NAS 9-15531 **University of Pennsylvania** **3427**
Development phase for Spacelab experiment (INS)

Period	Obligations	
03/01/78-07/01/81	FY79: $132,000	TOTAL: $280,774
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brown, A. H.	JSC/Lintott, J. E.	59 Life Sci, NEC

NAS 9-15789 **University of Pennsylvania** **3428**
Development of a computer code to determine interactions of cosmic rays with spacecraft and biological materials

Period	Obligations	
04/01/79-10/31/79	FY79: $29,750	TOTAL: $29,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shen, B. S.	JSC/Barnes, C. M.	39-Env Sci, NEC

NGR 39-010-149 **University of Pennsylvania** **3429**
Plant morphogenesis under conditions of hypo and hypergravia

Period	Obligations	
09/01/73-03/31/80	FY79: $29,711	TOTAL: $400,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brown, A. H.	HQ-SB/Halstead, T. W.	51-Biological Sci
	HQ-SB/Geib, D. S.	

NSG 1596 **University of Pennsylvania** **3430**
High resistivity graphite fibers

Period	Obligations	
02/01/79-09/30/79	FY79: $49,500	TOTAL: $49,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vogel, F. L.	LARC/Brewer, W. D.	19-Phys Sci, NEC
	LARC/Tompkins, S. S.	

NSG 5296 **University of Pennsylvania** **3431**
Ultraviolet spectroscopy of peculiar eclipsing binary stars

Period	Obligations	
08/01/78 03/31/80	FY79:	TOTAL: $12,871
Prin Invest	*NASA Tech Officer*	*CASE Category*
Koch, R. H.	GSFC/Boggess, A.	11-Astronomy
	GSFC/Fischel, D.	

NAS 5-22892 **University of Pittsburgh** **3432**
Laser plasma laser system study

Period	Obligations	
02/26/76-02/26/79	FY79:	TOTAL: $42,918
Prin Invest	*NASA Tech Officer*	*CASE Category*
Falk, J.	GSFC/Kostiuk, T.	43-Chem Engr

NAS 5-25013 **University of Pittsburgh** **3433**
Study of infrared detection by intracavity upconversion

Period	Obligations	
05/09/78-05/31/80	FY79: $49,823	TOTAL: $94,640
Prin Invest	*NASA Tech Officer*	*CASE Category*
Falk, J.	GSFC/Kostiuk, T.	13-Physics
	GSFC/Ogilvie, K. W.	

NASW 3042 **University of Pittsburgh** **3434**
Operation of an industrial applications center

Period	Obligations	
06/29/77-05/31/79	FY79: $300,000	TOTAL: $624,750
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	HQ-KT/Bivins, R. G.	99-Multi-Discip

NCA 2-592901 **University of Pittsburgh** **3435**
Vestibular nuclei neuron activity in freely moving cats

Period	Obligations	
03/01/79-02/28/81	FY79: $8,000	TOTAL: $8,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tomko, D. L.	ARC/Daunton, N. G.	51-Biological Sci

NGL 39-011-013 **University of Pittsburgh** **3436**
Investigation of airglow excitation mechanisms using atomic beam techniques

Period	Obligations	
04/26/65-01/31/81	FY79: $22,000	TOTAL: $693,734
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fite, W. L.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 39-011-030 **University of Pittsburgh** **3437**
Studies of excitation and collision deactivation of measurable A3 state of nitrogen in the aurora and day airglow

Period	Obligations	
05/07/65-04/30/81	FY79: $134,534	TOTAL: $1,014,886
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zipf, E. C.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 39-011-085 **University of Pittsburgh** **3438**
Studies relating to surfaces of moon & planets

Period	Obligations	
03/17/69-03/31/80	FY79:	TOTAL: $339,299
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cassidy, W. A.	HQ-SL/Quaide, W. L.	32 Geological Sci
Hapke, B. W.		

NGR 39-011-137 **University of Pittsburgh** **3439**
Dissociative recombination coefficients for planetary ionospheric ions

Period	Obligations	
07/28/71-05/30/79	FY79: $39,824	TOTAL: $214,336
Prin Invest	*NASA Tech Officer*	*CASE Category*
Biondi, M. A.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGR 39-011-161 **University of Pittsburgh** **3440**
Laboratory studies of kinetics of tropospheric and stratospheric aircraft pollutant reactions using atomic and molecular resonance fluorescence detection

Period	Obligations	
06/03/73-02/29/80	FY79: $63,000	TOTAL: $331,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kaufman, F.	HQ-ST/Kakar, R. K.	12-Chemistry
	HQ-ST/Seals, R. K., Jr.	

NSG 2117 **University of Pittsburgh** **3441**
Survey nearby stars for the perturbative effects of extrasolar planetary systems

Period	Obligations	
01/01/76-02/28/80	FY79: $50,500	TOTAL: $116,144
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L. Elhady, N. M.	ARC/Black, D. C.	11-Astronomy

NSG 2407 **University of Pittsburgh** **3442**
Theoretical studies of the electronic structure of small metal clusters

Period	Obligations	
10/01/79-09/30/80	FY79: $24,000	TOTAL: $24,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jordan, K. D.	ARC/Cooper, D. M.	13-Physics

NSG 3163 **University of Pittsburgh** **3443**
Determination of efficiencies, loss mechanisms and performance degradation factors in chopper controlled dc vehicle motors

Period	Obligations	
09/01/77-06/30/80	FY79: $49,805	TOTAL: $140,112
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hamilton, H. B.	LERC/McBrien, E. F.	45-Elec Engr

NSG 3168 **University of Pittsburgh** **3444**
Studies of magnetostriction and spin polarized band structures of rare earth intermetallics

Period	Obligations	
09/26/77-05/31/79	FY79:	TOTAL: $52,804
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wallace, W. E. Sankar, S. G.	LERC/Brown, G. V.	13-Physics

NSG 3214 **University of Pittsburgh** **3445**
Investigation of initiation stage of hot corrosion in NU-base alloys

Period	Obligations	
09/01/78-09/01/81	FY79:	TOTAL: $59,996
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meier, G. H.	LERC/Kohl, F. J. LERC/Stearns, C. A.	47-Materials Engr

NSG 5270 **University of Pittsburgh** **3446**
Lithological characterization of crystalline basement rock provinces in the United States

Period	Obligations	
04/15/78-07/14/80	FY79: $22,400	TOTAL: $44,755
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lidiak, E. G.	GSFC/Thomas, H. H. GSFC/Mead, G. D.	32-Geological Sci

NSG 5362 **University of Pittsburgh** **3447**
Measurement of the far ultraviolet spectral reflections of selected lunar areas

Period	Obligations	
05/09/79-12/08/79	FY79: $11,000	TOTAL: $11,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hapke, B. W.	GSFC/Boggess, A.	11-Astronomy

NSG 6011 **University of Pittsburgh** **3448**
Studies of the physics and chemistry of the terrestrial atmosphere

Period	Obligations	
10/01/75-10/31/79	FY79: $107,778	TOTAL: $637,745
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zipf, E. C. Bernstein, W.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7147 **University of Pittsburgh** **3449**
Photometric analyses of Mariner 10 images of Venus and Mercury

Period	Obligations	
06/23/75-11/30/79	FY79: $28,523	TOTAL: $122,303
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hapke, B. W.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	11-Astronomy

NSG 7631 **University of Pittsburgh** **3450**
Measurement of reflectivities of rocks, minerals and glasses in the vacuum ultraviolet

Period	Obligations	
06/01/79-02/29/80	FY79: $46,292	TOTAL: $46,292
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hapke, B. W.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 9056 **University of Pittsburgh** **3451**
Measurement of reflectivities of rocks, minerals, glasses in the vacuum ultraviolet

Period	Obligations	
03/01/77-02/29/80	FY79: $12,099	TOTAL: $114,596
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hapke, B. W.	JSC/Harris, J. W.	13-Physics

NSG 5375 **Villanova University** **3452**
Ultraviolet observations of hot white dwarfs in binary systems

Period	Obligations	
07/01/79-06/30/80	FY79: $5,580	TOTAL: $5,580
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sion, E. M Guinan, E. F.	GSFC/Boggess, A	11-Astronomy

RHODE ISLAND

NASW 3285 **Brown University** **3453**
Support for a regional planetary image facility
Period: 10/01/78-01/31/80 Obligations: FY79: $44,081 TOTAL: $44,081
Prin Invest: Mutch, T. A. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
HQ-SL/Boyce, J. M.

NGR 40-002-088 **Brown University** **3454**
Analysis of Martian geologic features of earth analogs
Period: 10/20/69-11/30/79 Obligations: FY79: $105,367 TOTAL: $586,736
Prin Invest: Head, J. W. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
HQ-SL/Boyce, J. M.

NGR 40-002-116 **Brown University** **3455**
Lunar basins processes and structure
Period: 02/20/73-01/31/80 Obligations: FY79: $75,000 TOTAL: $517,539
Prin Invest: Head, J. W. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
Mutch, T. A. HQ-SL/Boyce, J. M.

NGR 40-002-123 **Brown University** **3456**
Lunar sample analysis
Period: 05/01/73-09/30/79 Obligations: FY79: $15,000 TOTAL: $207,223
Prin Invest: Rutherford, M. J. NASA Tech Officer: JSC/Harris, J. W. CASE Category: 32-Geological Sci

NSG 1617 **Brown University** **3457**
Analytical and numerical gas dynamics
Period: 06/01/79-05/31/80 Obligations: FY79: $25,370 TOTAL: $25,370
Prin Invest: Sirovich, L. NASA Tech Officer: LARC/Townsend, J. C CASE Category: 41-Aero Engr

NSG 3118 **Brown University** **3458**
Effect of processing parameters on reaction bonding silicon nitride
Period: 08/01/76-10/01/79 Obligations: FY79: TOTAL: $138,200
Prin Invest: Richman, M. H. NASA Tech Officer: LERC/Herbell, T. P. CASE Category: 47-Materials Engr

NSG 7569 **Brown University** **3459**
Analysis of rocks and substrate as revealed in Viking Lander images
Period: 04/01/79-03/31/80 Obligations: FY79: $43,000 TOTAL: $43,000
Prin Invest: Mutch, T. A. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7570 **Brown University** **3460**
Surface processes on Mars and its satellites with emphasis on cratering, volcanism and the evolution of Valles Marineris
Period: 04/01/79-03/31/80 Obligations: FY79: $48,000 TOTAL: $48,000
Prin Invest: Head, J. W. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7589 **Brown University** **3461**
Experimental investigation of basalt-C-O-H-S gas equilibria and fumarolic alteration on Mars
Period: 03/01/79-02/29/80 Obligations: FY79: $22,705 TOTAL: $22,705
Prin Invest: Rutherford, M. J. NASA Tech Officer: HQ-SL/Quaide, W. L. CASE Category: 32-Geological Sci
HQ-SL/Dwornik, S. E.

NSG 7605 **Brown University** **3462**
Endogenic processes affect in the surfaces of Ganymede and Callisto
Period: 05/01/79-04/30/80 Obligations: FY79: $41,722 TOTAL: $41,722
Prin Invest: Parmentier, E. M. NASA Tech Officer: HQ-SL/Quaide, W. L. CASE Category: 32-Geological Sci
HQ-SL/French, B. M.

NAS13-112 **University of Rhode Island** **3463**
Conduct a workshop for remotely sensed coastal and oceanographic data in the U.S. North Atlantic region
Period: 04/13/79-08/10/79 Obligations: FY79: $6,000 TOTAL: $6,000
Prin Invest: Tippie, V. NASA Tech Officer: NSTL/Zetka, E. F. CASE Category: 33-Oceanography

NSG 1495 **University of Rhode Island** **3464**
Use of numerical continental shelf circulation and pollutant transport models for analysis of remotely sensed data
Period: 02/01/78-01/31/80 Obligations: FY79: $40,000 TOTAL: $69,098
Prin Invest: Spaulding, M. L. NASA Tech Officer: LARC/Campbell, J. W. CASE Category: 33-Oceanography

NSG 7414 **University of Rhode Island** **3465**
Paleoflow processes and formation of Martian channels
Period: 10/01/77-12/31/79 Obligations: FY79: $22,765 TOTAL: $57,981
Prin Invest: Boothroyd, J. C. NASA Tech Officer: HQ-SL/Dwornik, S. E. CASE Category: 32-Geological Sci
HQ-SL/Boyce, J. M.

SOUTH CAROLINA

NAS 9-13669 **Clemson University - Clemson** **3466**
High temperature hyperfiltration water reclamation unit
Period *Obligations*
08/14/73-02/15/78 FY79: TOTAL: $121,200
Prin Invest *NASA Tech Officer* *CASE Category*
Gaddis, J. L. JSC/Revele W. F. 46-Mech Engr
Brandon, C. A.

NSG 1297 **Clemson University - Clemson** **3467**
Crack growth in bonded isotropic and orthotropic elastic half-planes
Period *Obligations*
04/01/76-10/15/79 FY79: TOTAL: $98,058
Prin Invest *NASA Tech Officer* *CASE Category*
Goree, J. G. LARC/Poe, C. C., Jr. 46-Mech Engr
LARC/Kennedy, J. M.

NSG 1411 **Clemson University - Clemson** **3468**
Optimization of fiber reinforced structures to satisfy aeroelastic requirements
Period *Obligations*
07/01/77-06/30/80 FY79: TOTAL: $29,355
Prin Invest *NASA Tech Officer* *CASE Category*
Rudisill, C. S. LARC/Doggett, R. V., Jr. 41-Aero Engr
Bauld, N. R., Jr.

NSG 3225 **Clemson University - Clemson** **3469**
Development of a percutaneous implant using ion-beam sputtering technique
Period *Obligations*
09/15/78-09/14/80 FY79: TOTAL: $16,545
Prin Invest *NASA Tech Officer* *CASE Category*
Park, J. B. LERC/Weigand, A. J.
Vonrecum, A. F. LERC/Banks, B. A. 56-Medical Sciences
Kenner, G. H.

NSG 5349 **Clemson University - Clemson** **3470**
Forecasting tropical cyclone recurvature with upper tropospheric winds
Period *Obligations*
05/01/79-04/30/80 FY79: $30,837 TOTAL: $30,837
Prin Invest *NASA Tech Officer* *CASE Category*
Gentry, R. C. GSFC/Rodgers, E. B. 31-Atmos Sci

NSG 5350 **Clemson University - Clemson** **3471**
Research of the geneses of tornadoes associated with hurricanes
Period *Obligations*
05/01/79-04/30/80 FY79: $32,585 TOTAL: $32,585
Prin Invest *NASA Tech Officer* *CASE Category*
Gentry, R. C. GSFC/Wexler, R. 31-Atmos Sci
Miller, R. C.
Ulbrich, C.

NAS 8-28660 **University of South Carolina** **3472**
Study of microwave down-converters operating in KU band
Period *Obligations*
04/19/72-06/30/79 FY79: TOTAL: $104,998
Prin Invest *NASA Tech Officer* *CASE Category*
Fellers, R. G. MSFC/Lowrey, D. O. 45-Elec Engr
MSFC/Stephens, J. K.

NGL 41-002-003 **University of South Carolina** **3473**
Infrared spectra of molecules & materials of astrophysical interest
Period *Obligations*
05/10/65-05/31/79 FY79. TOTAL: $280,498
Prin Invest *NASA Tech Officer* *CASE Category*
Durig, J. R. HQ-SL/Fellows, R. F. 31-Atmos Sci
HQ-SL/Brunk, W. E.

NSG 7076 **University of South Carolina** **3474**
Paleohydrology of Mars
Period *Obligations*
07/01/74-09/30/78 FY79: TOTAL: $104,599
Prin Invest *NASA Tech Officer* *CASE Category*
Nummedal, D. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M

NSG 7096 **University of South Carolina** **3475**
A model for the formation of protocells from glycine-rich proteinoids
Period *Obligations*
10/08/74-04/30/80 FY79: $27,539 TOTAL: $138,037
Prin Invest *NASA Tech Officer* *CASE Category*
Rohlfing, D. L. HQ-SB/Young, R. S. 51-Biological Sci

NSG 7504 **University of South Carolina** **3476**
Application of LANDSAT data in South Carolina
Period *Obligations*
12/01/78-11/30/81 FY79: $200,000 TOTAL: $200,000
Prin Invest *NASA Tech Officer* *CASE Category*
Cooper, J. M. HQ-ET/Vitale, J. A. 39-Env Sci, NEC

SOUTH DAKOTA

NAS 9-15522 **South Dakota School of Mines & Tech** **3477**
Development of microprocessor-controlled Lower Body Negative Pressure (LBNP) system
Period *Obligations*
05/15/78-08/15/79 FY79: TOTAL: $23,000
Prin Invest *NASA Tech Officer* *CASE Category*
Gowen, R. J. JSC/Hull, W. E. 59-Life Sci, NEC

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SOUTH DAKOTA (Continued)

NAS 5-24206 **South Dakota State University** **3478**
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns

Period	Obligations	
06/22/77-02/21/80	FY79: $16,500	TOTAL: $93,770
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Moore, D. G.	GSFC/Gordon, F., Jr.	99-Multi-Discip

NAS 9-15345 **South Dakota State University** **3479**
Preparation of agrophysical maps

Period	Obligations	
05/17/77-07/01/80	FY79: $30,000	TOTAL: $59,460
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Westin, F. C.	JSC/Bullock, H. E., Jr.	32-Geological Sci

NGL 42-003-007 **South Dakota State University** **3480**
Remote sensing of soils, land forms, and land use in the northern great plains in preparation for ERTS applications

Period	Obligations	
07/27/70-06/30/82	FY79: $150,000	TOTAL: $1,500,000
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Myers, V. I.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 5396 **South Dakota State University** **3481**
Advanced microwave soil moisture studies

Period	Obligations	
07/01/79-02/29/80	FY79: $30,701	TOTAL: $30,701
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Heilman, J. L.	GSFC/Schmugge, T. J.	39-Env Sci, NEC
Moore, D. G.	GSFC/Wang, J. R.	
Myers, V. I.		

TENNESSEE

NSG 5297 **Fisk University** **3482**
Neutrino interactions at cosmic ray energies

Period	Obligations	
09/01/78-08/31/80	FY79: $29,100	TOTAL: $56,600
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Mickens, R. E.	GSFC/Stecker, F. W.	13-Physics

NSG 8035 **Fisk University** **3483**
Asymptotic properties of scattering amplitudes

Period	Obligations	
06/02/76-12/01/78	FY79:	TOTAL: $55,641
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Mickens, R. E.	MSFC/Kent, M. I.	12-Chemistry

NSG 8060 **Fisk University** **3484**
Optical characterization of zero-gravity grown crystals

Period	Obligations	
04/17/78-02/16/80	FY79: $50,948	TOTAL: $100,123
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Silberman, E.	MSFC/Kroes, R. L.	13-Physics
	MSFC/Kent, M. I	

NSG 1593 **Le Moyne-Owen College** **3485**
Calibration of the quartz crystal microbalance cascade impactor using the Berglund-Liu monodisperse aerosol generator for aerosol studies in the atmosphere

Period	Obligations	
02/01/79-01/31/80	FY79: $33,032	TOTAL: $33,032
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Matthews, N.	LARC/Woods, D. C.	31-Atmos Sci

NAS 5-23801 **Meharry Medical College** **3486**
Investigation of medical information management system application in a complex health care facility

Period	Obligations	
12/07/76-02/07/80	FY79: $55,000	TOTAL: $110,564
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Braun, G.	GSFC/Alterescu, S.	56-Medical Sciences

NAS 9-15862 **Tennessee State University** **3487**
Study and report: Comparison of generalist vs specialist concept in personnel management

Period	Obligations	
06/15/79-06/22/80	FY79: $34,730	TOTAL: $34,730
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Sampson, C.	JSC/Kochner, J	62-Social Aspects

NGT 43-014-750 **Tennessee State University** **3488**
Training of undergraduate students in sciences and engineering

Period	Obligations	
06/01/75-05/31/80	FY79: $16,750	TOTAL: $72,750
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Malkani, M. J.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	HQ-U/Jenkins, H. G	

NGT 43-014-790 **Tennessee State University** **3489**
Pre-cooperative engineering education program

Period	Obligations	
08/01/79-07/31/80	FY79: $2,455	TOTAL: $2,455
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Malkani, M. J.	HQ-LU/Pohly, J. G.	49-Engr, NEC
	LERC/Allen, R. P	

NAS 8-31564 **Tennessee Technological University** **3490**
Study of utilization of solar energy for residential heating and cooling application

Period	Obligations	
07/01/75-09/01/77	FY79:	TOTAL: $32,890
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Griggs, E. I.	MSFC/Humphries, W. R.	31-Atmos Sci
	MSFC/Hall, C.	

NGR 43-003-015 **Tennessee Technological University** **3491**
Investigation of open-loop amplification of Reynolds number-dependent processes

Period	Obligations	
09/16/71-10/31/79	FY79: $12,370	TOTAL: $170,120
Prin Invest	*NASA Tech Officer*	*CASE Categ*
Ventrice, M. B.	LERC/Priem, R. J	46-Mech Engr

NAS 5-25101 **University of Tennessee - Knoxville** **3492**
Energy conservation task

Period	Obligations	
06/23/78-02/23/79	FY79: $350	TOTAL: $19,109
Prin Invest	*NASA Tech Officer*	*CASE Category*
Snyder, W. M.	GSFC, Golden, T. S.	39-Env Sci, NEC

NAS 5-25428 **University of Tennessee - Knoxville** **3493**
Development of theoretical molecular models for line positions and strengths of several methane bands

Period	Obligations	
12/27/78-12/27/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fox, K.	GSFC/Maguire, W. C.	13-Physics
	GSFC/Kunde, V. G.	

NAS 8-29271 **University of Tennessee - Knoxville** **3494**
Application of image enhancement techniques to remote manipulator operations

Period	Obligations	
01/08/73-02/07/80	FY79: $49,976	TOTAL $253,692
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gonzalez, R. C.	MSFC/Craig, G. D.	45-Elec Engr
	MSFC/Bordelon, C	

NAS 8-29584 **University of Tennessee - Knoxville** **3495**
Study of wind profiles over nonuniform surface relative to ground design of aircraft & space vehicles

Period	Obligations	
02/02/73-09/12/78	FY79:	TOTAL: $426,446
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frost, W.	MSFC/Sloan, J.	46-Mech Engr

NAS 8-31718 **University of Tennessee - Knoxville** **3496**
Thunderstorm modeling and satellite ground truth cloud studies

Period	Obligations	
11/14/75-10/06/78	FY79:	TOTAL: $68,807
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frost, W.	MSFC/Hill, C. K.	31-Atmos Sci
Connell, J.	MSFC/Turner, R. E.	

NAS 8-32031 **University of Tennessee - Knoxville** **3497**
Field study of advection fog

Period	Obligations	
09/01/76-09/18/80	FY79: $14,000	TOTAL: $78,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Connett, J. R.	MSFC/Vaughan, O. H.	31-Atmos Sci
	MSFC/Anderson, B. J.	

NAS 8-32034 **University of Tennessee - Knoxville** **3498**
Applying NASA remote sensing data to geologically related regional plannings problems in Tennessee

Period	Obligations	
09/21/76-02/28/78	FY79:	TOTAL: $14,304
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shahrokhi, F.	MSFC/Bensko, J.	32-Geological Sci

NAS 8-32611 **University of Tennessee - Knoxville** **3499**
Ice chambers design and warm fog microphysics applicable to the understanding and interpretation of flight experiments under low gravity conditions

Period	Obligations	
07/29/77-06/30/80	FY79: $38,000	TOTAL: $75,708
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carter, J. M.	MSFC/Anderson, B. J.	39-Env Sci, NEC
	MSFC/Vaughan, O. H.	

NAS 8-32635 **University of Tennessee - Knoxville** **3500**
Feasibility study of slant-range visibility by lidar technique

Period	Obligations	
09/09/77-11/30/79	FY79: $15,070	TOTAL: $28,339
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kohl, R. H.	MSFC/Camp, D. W.	31-Atmos Sci
	MSFC/Moore, W. W., Jr.	

NAS 8-32692 **University of Tennessee - Knoxville** **3501**
Gust gradient analysis

Period	Obligations	
07/07/78-09/14/80	FY79: $77,335	TOTAL: $164,210
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frost, W.	MSFC/Camp, D. W	31-Atmos Sci
	MSFC/Alexander, M. B.	

NAS 8-33065 **University of Tennessee - Knoxville** **3502**
Accuracy analysis of pointing control system of solar power station

Period	Obligations	
04/26/78-12/12/78	FY79:	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hung, J. C.	MSFC/Guttman, C. H.	46-Mech Engr
Peebles, P. Z.		

NAS 8-33218 **University of Tennessee - Knoxville** **3503**
Digital LANDSAT data analysis of Tennessee

Period	Obligations	
12/01/78-01/31/80	FY79: $17,000	TOTAL: $17,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shahrokhi, F.	MSFC/Daniel, J. L.	39-Env Sci, NEC

NAS 8-33225 **University of Tennessee - Knoxville** **3504**
Air breathing engine/trajectory optimization study

Period	Obligations	
09/29/78-09/29/79	FY79:	TOTAL: $17,026
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, V. K., III	MSFC/Mercier, D. R.	41-Aero Engr
	MSFC/Stafford, W. H	

NAS 8-33386 **University of Tennessee - Knoxville** **3505**
Theoretical analysis of barochinic flows

Period	Obligations	
08/13/79-01/31/80	FY79: $5,000	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Antar, B. N.	MSFC/Fowlis, W. W	31-Atmos Sci
	MSFC/Thomas, P. E.	

NAS 8-33447 **University of Tennessee - Knoxville** **3506**
Vehicle motion requirements for scientific experiments in space

Period	Obligations	
05/10/79-02/09/80	FY79: $5,000	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Antar, B. N.	MSFC/Fichtl, G. H.	13-Physics
Collins, F. G.		

NAS 8-33604 **University of Tennessee - Knoxville** **3507**
Study relative to development of a microwave antenna pointing error sensing scheme

Period	Obligations	
08/01/79-02/01/80	FY79: $19,600	TOTAL: $19,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hung, J. C.	MSFC/Howell, J. T., Jr.	45-Elec Engr
Lee, C. W.		
Peebles, P. Z.		

NAS 9-15164 **University of Tennessee - Knoxville** **3508**
Influence of space flight on erythroprotein activity and inhibition

Period	Obligations	
10/21/76-04/30/80	FY79: $55,000	TOTAL: $175,600
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dunn, C. D.	JSC/Kimzey, S. L.	56-Medical Sciences
Chen, J. P.		

NCA 2-772901 **University of Tennessee - Knoxville** **3509**
Theoretical analysis of the boundary layer development over a slotted wind tunnel wall

Period	Obligations	
05/01/79-04/30/81	FY79: $39,956	TOTAL: $39,956
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tirres, C.	ARC/Steinle, F. W., Jr.	41-Aero Engr
Wu, J. M.		

NGL 43-001-006 **University of Tennessee - Knoxville** **3510**
Spectroscopic studies of life shape of atmospheric gases & of absorption bands of inorganic solids

Period	Obligations	
01/07/64-09/30/80	FY79:	TOTAL: $1,318,628
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gailar, N. M.	HQ-SL/Fellows, R. F.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 43-001-140 **University of Tennessee - Knoxville** **3511**
Experimental investigations of opaque minerals and cooling history of lunar rocks

Period	Obligations	
09/01/73-01/31/80	FY79: $1,250	TOTAL: $410,105
Prin Invest	*NASA Tech Officer*	*CASE Category*
Taylor, L. A.	JSC/Harris, J. W.	11-Astronomy

NSG 1224 **University of Tennessee - Knoxville** **3512**
A study of unsteady transonic flow analysis

Period	Obligations	
08/07/75-03/31/80	FY79: $29,821	TOTAL: $100,591
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kimble, K. R.	LARC/Bland, S. R.	41-Aero Engr
Wu, J. M.	LARC/Yates, E. C., Jr.	

NSG 2379 **University of Tennessee - Knoxville** **3513**
Transonic slotted wind tunnel wall boundary layer flow study

Period	Obligations	
05/01/79-04/30/80	FY79: $36,630	TOTAL: $36,630
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wu, J. M.	ARC/Steinle, F. W., Jr.	41-Aero Engr
Collins, F. G.	ARC/Daugherty, J. C.	
Reddy, K. C.		

NSG 3173 **University of Tennessee - Knoxville** **3514**
Assessment and development of analytical models for forced convective turbulent heat transfer in the near critical region

Period	Obligations	
11/01/77-11/01/79	FY79:	TOTAL: $29,890
Prin Invest	*NASA Tech Officer*	*CASE Category*
Reid, R. L.	LERC/Graham, R. W.	46-Mech Engr
	LERC/Hendricks, R. C.	

NSG 3224 **University of Tennessee - Knoxville** **3515**
Parametric study of potential early commercial power plants (MHD)

Period	Obligations	
11/01/78-12/15/79	FY79:	TOTAL: $150,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dicks, J. B.	LERC/Staiger, P. J.	49-Engr, NEC
Chapman, J. N.	LERC/Seikel, G. R.	
Markant, H. P.		

NSG 3287 **University of Tennessee - Knoxville** **3516**
Internal computational fluid mechanics program for turbomachinery

Period	Obligations	
07/01/79-09/01/80	FY79: $93,440	TOTAL: $93,440
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kurosaka, M.	LERC/Rostafinski, W. A.	41-Aero Engr
Coruthers, J.		

NSG 7413 **University of Tennessee - Knoxville** **3517**
Petrologic studies of meteorite groups

Period	Obligations	
02/01/78-01/31/80	FY79: $23,211	TOTAL: $45,186
Prin Invest	*NASA Tech Officer*	*CASE Category*
McSween, H. Y.	HQ-SL/French, B. M.	32-Geological Sci
Taylor, L. A.	HQ-SL/Quaide, W. L	

TENNESSEE (Continued)

NAS 9-15670 **University of Tennessee - Memphis** **3518**
Relative toxicity testing of spacecraft materials

Period	Obligations	
11/10/78-02/09/80	FY79: $77,823	TOTAL: $77,823
Prin Invest	*NASA Tech Officer*	*CASE Category*
Autian, J.	JSC/Schneider, H. J.	56-Medical Sciences
Lawrence, W. H.		

NSG 1455 **University of Tennessee - Nashville** **3519**
Research in high temperature, advanced composite structures

Period	Obligations	
11/01/77-11/30/79	FY79: $42,933	TOTAL: $81,628
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blackburn, C. L.	LARC/Robinson, J. C.	41-Aero Engr
	LARC/Cooper, P. A.	

NAS 8-32695 **Vanderbilt University** **3520**
Solar radiation on glasses

Period	Obligations	
06/27/78-06/25/80	FY79:	TOTAL: $49,799
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kinser, D. L.	MSFC/Nichols, R. L.	47-Materials Engr
	MSFC/King, H. M.	

NCC 1 8 **Vanderbilt University** **3521**
Advanced solar energy conversion

Period	Obligations	
05/01/79-08/31/80	FY79: $66,825	TOTAL: $66,825
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lee, J. H.	LARC/Hohl, F.	13-Physics
	LARC/Jalufka, N. W.	

NSG 1235 **Vanderbilt University** **3522**
Production and diagnostics of dense nuclear plasmas

Period	Obligations	
09/01/75-08/31/79	FY79:	TOTAL: $235,272
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lee, J. H.	LARC/Hohl, F.	13-Physics

NSG 7343 **Vanderbilt University** **3523**
Ultraviolet studies of galaxies

Period	Obligations	
05/01/77-11/30/79	FY79:	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Weedman, D. W.	HQ-SC/Roman, N. G	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 7463 **Vanderbilt University** **3524**
Ground-based photometry of HR 1099 coordinated with the October 1977 Copernicus campaign

Period	Obligations	
05/01/78-09/01/79	FY79:	TOTAL: $4,224
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hall, D.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Rosendhal, J. D.	

NSG 7543 **Vanderbilt University** **3525**
Ground based UBV photometry of RS Canis Venticorum binaries

Period	Obligations	
08/15/79-08/14/80	FY79: $27,906	TOTAL: $27,906
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hall, D.	HQ-SC/Roman, N. G.	11-Astronomy
	HQ-SC/Boggess, N. W	

TEXAS

NAS 2-10354 **Baylor College of Medicine** **3526**
Cosmos 1979 experiment: Trabeculae and mineralization in the long bones

Period	Obligations	
09/01/79-08/31/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Matthews, J. L.	ARC/Souza, K. A.	56-Medical Sciences
Judy, M.	ARC/Heinrich, M. R.	

NAS 9-13737 **Baylor College of Medicine** **3527**
Analysis of body calcium

Period	Obligations	
02/01/74-03/31/80	FY79: $10,000	TOTAL: $316,304
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, P. C.	JSC/Altchuler, S. I.	56-Medical Sciences
Sheld, W.		

NAS 9-14407 **Baylor College of Medicine** **3528**
Evaluate primary irritancy and allergenicity of materials proposed for crew apparel

Period	Obligations	
09/19/74-06/30/80	FY79:	TOTAL: $20,978
Prin Invest	*NASA Tech Officer*	*CASE Category*
Duncan, W. C.	JSC/Rippstein, W.J	56-Medical Sciences

NAS 9-14546 **Baylor College of Medicine** **3529**
Etiological study of motion sickness by using subhuman primates

Period	Obligations	
05/01/75-04/30/80	FY79: $40,000	TOTAL: $174,480
Prin Invest	*NASA Tech Officer*	*CASE Category*
Igarashi, M.	JSC/Homick, J. L.	56-Medical Sciences

NAS 9-14662 **Baylor College of Medicine** **3530**
Influence of the external parameters of space flight on the regulation of blood volume

Period	Obligations	
06/01/75-03/01/80	FY79: $63,445	TOTAL: $203,420
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Johnson, P. C.	JSC/Kimzey, S. L.	56-Medical Sciences

NAS 9-15457 **Baylor College of Medicine** **3531**
Early detection of disease by evaluation of the cellular immune response

Period	Obligations	
11/01/77-10/31/79	FY79: $99,900	TOTAL: $190,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Criswell, B. S.	JSC/Kimzey, S. L.	56-Medical Sciences

NAS 9-15478 **Baylor College of Medicine** **3532**
Study of bone and muscle protein degradation

Period	Obligations	
12/01/77-01/31/80	FY79: $20,000	TOTAL: $42,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Diferrante, N.	JSC/Leach, C. S.	56-Medical Sciences

NAS 9-15669 **Baylor College of Medicine** **3533**
Null lymphocytes separation

Period	Obligations	
08/17/78-12/01/79	FY79:	TOTAL: $37,382
Prin Invest	*NASA Tech Officer*	*CASE Category*
Twomey, J. J.	JSC/Morrison, D. R.	59-Life Sci, NEC

NAS 9-15891 **Baylor College of Medicine** **3534**
Renal responses to water immersion

Period	Obligations	
06/01/79-06/30/80	FY79: $32,382	TOTAL: $32,382
Prin Invest	*NASA Tech Officer*	*CASE Category*
Suki, W. N.	JSC/Leach, C. S.	59-Life Sci, NEC

NSG 1615 **Del Mar College** **3535**
On the power-spectral density of the dynamic response of an aircraft to nonhomogeneous atmospheric turbulence

Period	Obligations	
06/01/79-08/31/79	FY79: $11,939	TOTAL: $11,939
Prin Invest	*NASA Tech Officer*	*CASE Category*
Trevino, G.	LARC/Murrow, H. N. LARC/Rhyne, R. H.	41-Aero Engr

NGR 44-095-001 **Hardin - Simmons University** **3536**
Study of psychophilic organisms isolated from manufacture and assembly areas of spacecraft to be used in the Viking missions

Period	Obligations	
08/21/72-12/31/79	FY79: $65,000	TOTAL: $443,602
Prin Invest	*NASA Tech Officer*	*CASE Category*
Foster, T. L. Brewer, J. H.	HQ-SB/Young, R. S.	51-Biological Sci

NSG 9038 **Houston Baptist University** **3537**
Obtaining high spatial resolution planetary imagery with potential shuttle era instrumentation

Period	Obligations	
01/01/76-01/31/81	FY79: $15,000	TOTAL: $54,250
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morgan, T. H.	JSC/Potter, A. E.	11-Astronomy

NSG 9076 **Houston Baptist University** **3538**
Spectroscopic investigation of the species emitting diffuse light in Johnson Space Center: Solar panel plasma effects simulation

Period	Obligations	
04/01/79-10/31/79	FY79: $6,408	TOTAL: $6,408
Prin Invest	*NASA Tech Officer*	*CASE Category*
Warren, D. G.	JSC/McCoy, J.	19-Phys Sci, NEC

NSG 9033 **Pan American University** **3539**
Experimental tests and model calculations on wheat varieties grown in India/Pakistan and in Texas

Period	Obligations	
08/28/75-11/30/79	FY79:	TOTAL: $148,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lemaster, E. W.	JSC/Heydorn, R. P.	39-Env Sci, NEC

NSG 9070 **Pan American University** **3540**
Laboratory studies of the diffuse reflectance spectra of frosts and minerals occurring on astronomical objects

Period	Obligations	
06/01/78-05/31/80	FY79: $39,950	TOTAL: $78,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Glaser, F. M.	JSC/Mendell, W	11-Astronomy

NSG 9006 **Prairie View A&M University** **3541**
Measurement of growth morphological and bi-directional scattering parameters of wheat

Period	Obligations	
06/01/74-08/31/80	FY79: $44,000	TOTAL: $177,019
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brams, E. A.	JSC/Browne, I. D.	39-Env Sci, NEC

NAS 5-23338 **Rice University** **3542**
Theoretical predictions and data analysis

Period	Obligations	
02/04/74-12/31/79	FY79: $15,000	TOTAL: $26,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cloutier, P. A. Daniels, R.	GSFC/Taylor, H. A., Jr. GSFC/Gagnon, B. D	13-Physics

NAS 5-25032 **Rice University** **3543**
Data analysis support for Low Energy Gamma-ray Spectrometer (LEGS) balloon program

Period	Obligations	
05/04/78-05/04/80	FY79:	TOTAL: $12,615
Prin Invest	*NASA Tech Officer*	*CASE Category*
Haymes, R. C.	GSFC/Teegarden, B. J.	31-Atmos Sci

NAS 6-1667 **Rice University** **3544**
Investigation into relationship between field aligned currents and auroral particle fluxes

Period	Obligations	
07/23/69-12/31/79	FY79: $123,000	TOTAL: $2,219,059
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anderson, H. R., Jr. Cloutier, P. A. Pulliam, D. M.	WFC/Gray, J. W. WFC/Pless, R. H.	11-Astronomy

NAS 8-33023 **Rice University** **3545**
Study of the electrostatic protection of the solar power satellite and rectenna

Period	Obligations	
06/15/78-05/15/80	FY79: $107,718	TOTAL: $157,718

Prin Invest	NASA Tech Officer	CASE Category
Few, A. A.	MSFC/Brantley, W.	49-Engr, NEC
Freeman, J. W., Jr.	MSFC/Johnson, W. G.	

NAS 8-33199 **Rice University** **3546**
Measurement of high temperature properties of liquid and solid tungsten

Period	Obligations	
11/27/78-04/30/80	FY79: $20,000	TOTAL: $20,000

Prin Invest	NASA Tech Officer	CASE Category
Margrave, J.	MSFC/Oran, W. A.	47-Materials Engr
	MSFC/Williams, J. R.	

NAS 8-33361 **Rice University** **3547**
Correlative studies of cosmic gamma ray sources under the HEAO-A guest investigator program

Period	Obligations	
07/16/79-07/15/80	FY79: $13,651	TOTAL: $13,651

Prin Invest	NASA Tech Officer	CASE Category
Haymes, R. C.	MSFC/Jones, J. B., Jr.	11-Astronomy
Meegan, C. A.		

NAS 9-15274 **Rice University** **3548**
A fundamental study of liquid spray evaporation at a heated surface

Period	Obligations	
04/01/77-09/30/79	FY79:	TOTAL: $42,466

Prin Invest	NASA Tech Officer	CASE Category
Wierm, F. A.	JSC/Trevino, L. A.	46-Mech Engr

NAS 9-15630 **Rice University** **3549**
Trace contaminant co-adsorption by charcoal

Period	Obligations	
07/01/78-10/15/80	FY79: $2,500	TOTAL: $17,500

Prin Invest	NASA Tech Officer	CASE Category
Davis, S. H.	JSC/Howard, J. K.	43-Chem Engr

NAS 9-15940 **Rice University** **3550**
Spectral analysis of galactic and extragalactic Supernova remnants

Period	Obligations	
05/15/79-06/15/80	FY79: $13,360	TOTAL: $13,360

Prin Invest	NASA Tech Officer	CASE Category
DuFour, R. J.	JSC/Parker, R. A.	11-Astronomy

NASW 3164 **Rice University** **3551**
Effects of hypogravity on respiration and photosynthesis of higher plants

Period	Obligations	
05/12/78-05/12/80	FY79:	TOTAL: $20,000

Prin Invest	NASA Tech Officer	CASE Category
Ward, C. H.	HQ-SB/Halstead, T. W.	51-Biological Sci

NGL 44-006-001 **Rice University** **3552**
Research on physics of solid materials including study of basic laws governing behavior of solids at high temperatures

Period	Obligations	
05/01/72-06/30/78	FY79:	TOTAL: $4,567,282

Prin Invest	NASA Tech Officer	CASE Category
Rorschach, H. E.	LERC/Lad, R. A.	13-Physics

NGL 44-006-012 **Rice University** **3553**
Laboratory development of solar wind heavy-ion mass spectrometer

Period	Obligations	
06/27/64-06/30/80	FY79: $72,000	TOTAL: $1,453,736

Prin Invest	NASA Tech Officer	CASE Category
Michel, F. C.	HQ-ST/Cauffman, D. P.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGL 44-006-127 **Rice University** **3554**
Lunar fines, their origin, evolution, and interaction with solar wind and cosmic rays

Period	Obligations	
02/16/71-01/31/80	FY79:	TOTAL: $562,149

Prin Invest	NASA Tech Officer	CASE Category
Heymann, D.	JSC/Harris, J. W.	32-Geological Sci

NGR 44-006-137 **Rice University** **3555**
Analysis of data on the magnetotail and solar wind

Period	Obligations	
12/29/70-06/30/ 9	FY79:	TOTAL: $307,697

Prin Invest	NASA Tech Officer	CASE Category
Dessler, A. J.	HQ-ST/Cauffman, D. P.	13-Physics
	HQ-ST/Schmerling, E. R.	

NSG 5286 **Rice University** **3556**
Investigation of low altitude plasma phenomena

Period	Obligations	
07/01/78-09/30/80	FY79: $21,000	TOTAL: $41,000

Prin Invest	NASA Tech Officer	CASE Category
Reiff, P. H.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 5364 **Rice University** **3557**
Observations of the ultraviolet spectra of Magellanic Clouds

Period	Obligations	
06/01/79-05/31/80	FY79: $11,000	TOTAL: $11,000

Prin Invest	NASA Tech Officer	CASE Category
DuFour, R. J.	GSFC/Boggess, A.	11-Astronomy

NSG 7032 **Rice University** **3558**
Apollo data synthesis: Lunar atmosphere and ionosphere

Period	Obligations	
04/01/74-02/28/81	FY79:	TOTAL: $90,307

Prin Invest	NASA Tech Officer	CASE Category
Michel, F. C.	HQ-SL/Quaide, W. L.	31-Atmos Sci
	HQ-SL/French, B. E.	

NSG 7043 **Rice University** **3559**
Research on planetary atmospheres

Period	Obligations	
03/01/74-02/29/80	FY79: $29,427	TOTAL: $240,617
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chamberlain, J. W.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7157 **Rice University** **3560**
Analysis and synthesis of Apollo Lunar Surface Experiments package suprathermal ion

Period	Obligations	
07/01/75-10/31/79	FY79:	TOTAL: $199,715
Prin Invest	*NASA Tech Officer*	*CASE Category*
Freeman, J. W., Jr.	HQ-ST/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7361 **Rice University** **3561**
Origin of the solar system: The relationship of isotopic and chemical anomalies in meteorites Earth, Moon and planets to astrophysical models of their origin

Period	Obligations	
08/01/77-04/30/80	FY79:	TOTAL: $36,190
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clayton, D. D.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7362 **Rice University** **3562**
Thermal history of the inner planets

Period	Obligations	
07/01/77-12/31/79	FY79: $20,323	TOTAL: $60,357
Prin Invest	*NASA Tech Officer*	*CASE Category*
Debremaecker, J. C.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7386 **Rice University** **3563**
Study of ion-molecule reactions of importance in planetary atmosphere

Period	Obligations	
09/01/77-12/31/79	FY79: $20,014	TOTAL: $56,968
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stebbings, R. F.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7490 **Rice University** **3564**
Thermodynamic analysis of the combined free electron laser-storage ring system

Period	Obligations	
09/01/78-08/31/80	FY79: $38,000	TOTAL: $67,598
Prin Invest	*NASA Tech Officer*	*CASE Category*
Swain, P. H. Landgrebe, D. A.	HQ-RT/McKenzie, R. L.	13-Physics

NSG 9039 **Saint Mary's University** **3565**
X-ray diffraction studies of shocked lunar analogs

Period	Obligations	
01/10/76-12/31/79	FY79:	TOTAL: $57,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanss, R. E.	JSC/Horz, F.	32-Geological Sci

NSG 1548 **Southern Methodist University** **3566**
Measurements on an improved performance wall jet control for turbulent boundary layers

Period	Obligations	
07/01/78-12/31/79	FY79:	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, R. L.	LARC/Bushnell, D. M. LARC/Morrisette, E. L.	41-Aero Engr

NSG 2354 **Southern Methodist University** **3567**
Experimental measurements of unsteady turbulent boundary layers near separation

Period	Obligations	
12/01/78-09/30/80	FY79: $127,397	TOTAL: $127,397
Prin Invest	*NASA Tech Officer*	*CASE Category*
Simpson, R. L. Nasburg, R. E.	ARC/Marvin, J. G. ARC/Seegmiller, H. L.	42-Astro Engr

NAS 2-10272 **Texas A&M University** **3568**
Modification of a Swearingen metro wind tunnel model

Period	Obligations	
06/19/79-02/18/80	FY79: $86,400	TOTAL: $86,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brusse, J. C.	ARC/Gambucci, B. J. ARC/Williams, L. J.	41-Aero Engr

NAS 5-20796 **Texas A&M University** **3569**
ERTS follow-on investigation

Period	Obligations	
01/15/75-05/15/79	FY79:	TOTAL: $151,375
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, J. W., Jr.	GSFC/Stonesifer, G. R.	59-Life Sci, NEC

NAS 5-22966 **Texas A&M University** **3570**
Nimbus-G experiment team for coastal zone color scanner

Period	Obligations	
02/10/76-10/01/80	FY79: $144,960	TOTAL: $323,226
Prin Invest	*NASA Tech Officer*	*CASE Category*
El-Sayed, S. Z.	GSFC/Nelsen, E. D.	41-Aero Engr

NAS 5-24383 **Texas A&M University** **3571**
Applications of heat capacity mapping mission satellite data to the study of urban heating patterns

Period	Obligations	
01/16/78-04/30/80	FY79: $35,045	TOTAL: $87,090
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harlan, J. C.	GSFC/Stonesifer, G. R.	19-Phys Sci, NEC

NAS 5-25715 **Texas A&M University** **3572**
Assessment of thematic mapper simulator improved capabilities over multispectral scanner for arid and semi-arid rangeland application

Period	Obligations	
07/11/79-07/11/80	FY79: $10,000	TOTAL: $10,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Haos, R. H.	GSFC/Deering, D. W.	39-Env Sci, NEC

NAS 5-25846 **Texas A&M University** **3573**
Resolving the agricultural/residential image classification conflict

Period	Obligations	
09/04/79-09/03/80	FY79: $4,000	TOTAL: $4,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, E. D.	GSFC/Toll, D.	55-Agriculture Sci

NAS 6-2884 **Texas A&M University** **3574**
Study of the dynamics of ocean surface current and Kuroshio circulation

Period	Obligations	
02/01/78-09/30/80	FY79: $14,224	TOTAL: $34,199
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ichiye, T	WFC/Huang, N. E. WFC/Long, S. R.	33-Oceanography

NAS 8-31773 **Texas A&M University** **3575**
The relationship between severe storms and their environment

Period	Obligations	
01/02/76-05/31/80	FY79: $41,998	TOTAL: $226,981
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scoggins, J. R.	MSFC/Hill, C. K. MSFC/Vaughn, W. W.	31-Atmos Sci

NAS 8-32527 **Texas A&M University** **3576**
Bent crystal X-ray topography

Period	Obligations	
07/13/77-09/30/78	FY79:	TOTAL: $39,954
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parker, D. L.	MSFC/Nowakowski, M. MSFC/Holladay, A. M.	13-Physics

NAS 9-12434 **Texas A&M University** **3577**
Compression of rehydratable vegetables & cereals

Period	Obligations	
01/19/72-08/01/79	FY79:	TOTAL: $160,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burns, E. E.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC

NAS 9-13894 **Texas A&M University** **3578**
Classification techniques evaluation and yield modeling for a large crop inventory project

Period	Obligations	
01/15/74-11/17/79	FY79: $41,000	TOTAL: $471,842
Prin Invest	*NASA Tech Officer*	*CASE Category*
Freund, R. J.	JSC/Broune, I. D.	22-Computer Science

NAS 9-13904 **Texas A&M University** **3579**
Microwave soil moisture measurement and analysis

Period	Obligations	
02/11/74-11/30/79	FY79: $99,270	TOTAL: $499,096
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, J. W., Jr.	JSC/Buras, N. T.	39-Env Sci, NEC

NAS 9-14689 **Texas A&M University** **3580**
Application of feature selection

Period	Obligations	
06/01/75-10/31/79	FY79: $60,000	TOTAL: $266,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Guseman, L. F., Jr.	JSC/Browne, I. D.	22-Computer Science

NAS 9-14828 **Texas A&M University** **3581**
Lunar sample irradiation services

Period	Obligations	
11/01/75-08/31/80	FY79: $15,000	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Randall, J. D.	JSC/Blanchard, D.	39-Env Sci, NEC

NAS 9-14875 **Texas A&M University** **3582**
Joint soil moisture experiment scatterometer data processing

Period	Obligations	
01/22/76-08/31/79	FY79:	TOTAL: $94,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Newton, R. R.	JSC/Demel, K. J. JSC/Baldwin, R. R.	32-Geological Sci

NAS 9-15311 **Texas A&M University** **3583**
Investigation of microprocessor systems to be used in the development of a 4.76 GHz scatterometer real-time processor

Period	Obligations	
05/11/77-04/16/80	FY79: $50,000	TOTAL: $119,253
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jean, B. R.	JSC/Farris, G. W.	45-Elec Engr

NAS 9-15451 **Texas A&M University** **3584**
Microwave Remote Sensing symposium workshop

Period	Obligations	
10/12/77-10/31/78	FY79:	TOTAL: $66,513
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rouse, J. W., Jr.	JSC/Matthews, R. E.	13-Physics

NAS 9-15465 **Texas A&M University** **3585**
Rangeland resource evaluation from LANDSAT

Period	Obligations	
12/15/77-06/14/79	FY79:	TOTAL: $83,673
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harlan, J. C.	JSC/Amsbury, D. L.	32-Geological Sci

NAS 9-15468 **Texas A&M University** **3586**
Development of map products on state of rangelands

Period	Obligations	
12/05/77-08/31/79	FY79:	TOTAL: $64,748
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whitehorn, N.	JSC/Amsbury, D. L.	99-Multi-Discip

NAS 9-15873 **Texas A&M University** **3587**
Development of a photosynthetic link in a closed ecological life support system

Period	Obligations	
05/01/79-01/31/80	FY79: $10,000	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morgan, P. W.	JSC/Fricks, D.	51-Biological Sci

NAS 9-15962 **Texas A&M University** **3588**
Impact testing on orbiter high-temperature reuseable surface insulation tiles

Period	Obligations	
06/01/79-10/01/79	FY79: $15,366	TOTAL: $15,366
Prin Invest	*NASA Tech Officer*	*CASE Category*
Norton, D. Rand, J.	JSC/Strouhal, G.	47-Materials Engr

NCC 5 11 **Texas A&M University** **3589**
Altimeter data over trenches and island arcs and convection in the mantle

Period	Obligations	
05/01/79-04/30/80	FY79: $2 000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jones, G. M.	GSFC/Taylor, P. T.	32-Geological Sci

NCC 5 15 **Texas A&M University** **3590**
Determination of the spatial variability in localized precipitation patterns

Period	Obligations	
06/01/79-05/31/80	FY79: $25,478	TOTAL: $25,478
Prin Invest	*NASA Tech Officer*	*CASE Category*
Miller, L. D.	GSFC/Schmugge, T. J.	39-Env Sci, NEC
Blanchard, B. J.	GSFC/Wang, J. R.	

NGL 44-001-001 **Texas A&M University** **3591**
Interdisciplinary space-oriented research in physical, life and engineering sciences

Period	Obligations	
02/01/62-01/31/81	FY79:	TOTAL: $1,915,564
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blanchard, B. J.	HQ-ET/Vitale, J. A	39-Env Sci, NEC

NGR 44-001-117 **Texas A&M University** **3592**
Radiative transfer in realistic planetary atmospheres

Period	Obligations	
07/19/71-09/30/80	FY79:	TOTAL: $308,520
Prin Invest	*NASA Tech Officer*	*CASE Category*
Plass, G. N.	HQ-SL/Fellows, R. F. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 1174 **Texas A&M University** **3593**
Development of inverse transonic airfoil design methods including boundary layer and viscous interaction effects

Period	Obligations	
05/01/75-01/31/80	FY79: $19,998	TOTAL: $69,827
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carlson, L. A.	LARC/South, J. C., Jr.	41-Aero Engr

NSG 1374 **Texas A&M University** **3594**
Low cost avionics for the global positioning system

Period	Obligations	
01/15/77-10/14/79	FY79:	TOTAL: $46,587
Prin Invest	*NASA Tech Officer*	*CASE Category*
Painter, J. H. Noe, P. S. Rhyne, V. T.	LARC/Lytle, C. D. LARC/Hearn, C. P.	45-Elec Engr

NSG 1407 **Texas A&M University** **3595**
Investigation of the aerodynamics for preventing aircraft stall and the development of technology for stall proof general aviation aircraft

Period	Obligations	
04/01/77-02/29/80	FY79 $25,000	TOTAL: $96,033
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chevalier, H. L	LARC/Chambers, J. R. LARC/Johnson, J. L.	41-Aero Engr

NSG 1639 **Texas A&M University** **3596**
Design studies for a technology assessment receiver for the global positioning system

Period	Obligations	
09/01/79-05/31/80	FY79 $39,991	TOTAL $39,991
Prin Invest	*NASA Tech Officer*	*CASE Category*
Painter, J H Noe, P. S Rhyne, V T.	LARC/Hearn, C P. LARC/Lytle, C D	45-Elec Engr

NSG 2226 **Texas A&M University** **3597**
Applicability of reliability and survivability program-version I to model reliability and survivability characteristics of aircraft weapon systems

Period	Obligations	
05/01/77-02/28/80	FY79: $28,340	TOTAL: $39,340
Prin Invest	*NASA Tech Officer*	*CASE Category*
Phillips, D T. Foster, J. W.	ARC/Wong, J. T. ARC Andre, W. L	41-Aero Engr

NSG 3201 **Texas A&M University** **3598**
Theoretical calculations relevant to hydrogen storage

Period	Obligations	
06/15/78-11/15/79	FY79:	TOTAL $4,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ford, A. L.	LERC/Brown, G. V.	13-Physics

NSG 5134 **Texas A&M University** **3599**
Measurement of soil moisture trends with airborne scatterometers

Period	Obligations	
10/11/76-12/31/79	FY79: $75,000	TOTAL: $125,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blanchard, B. J.	GSFC/Chang, A. T.	32-Geological Sci

NSG 5156 **Texas A&M University** **3600**
Measurement of the hydrologic soil-cover complex with airborne scatterometers

Period	Obligations	
02/01/77-09/30/79	FY79:	TOTAL: $79,085
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blanchard, B. J.	GSFC/Chang, A. T.	32-Geological Sci

NSG 5193 **Texas A&M University** **3601**
Temporal correlations of antecedent precipitation with Nimbus-5 electrically scanning microwave radiometer brightness temperatures

Period	Obligations	
08/01/77-07/31/80	FY79 $42,384	TOTAL: $88,259
Prin Invest	*NASA Tech Officer*	*CASE Category*
McFarland, M. J	GSFC/Schmugge, T. J.	31-Atmos Sci
Blanchard, B. J.		

NSG 5266 **Texas A&M University** **3602**
Research on mathematical model of an orbiting microwave radiometer

Period	Obligations	
04/01/78-12/31/79	FY79:	TOTAL: $60,302
Prin Invest	*NASA Tech Officer*	*CASE Category*
Newton, R. R.	GSFC/Wang, J. R.	39-Env Sci, NEC
Rouse, J. W., Jr.		

NSG 7037 **Texas A&M University** **3603**
The origin of the genetic code. A physical chemical model of Codon assignment

Period	Obligations	
05/07/74-05/31/80	FY79: $44,000	TOTAL: $259,975
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fendler, J. H.	HQ-SB/Young, R. S.	12-Chemistry
Nagyvary, J.		

NSG 7189 **Texas A&M University** **3604**
A comparison of smooth, continuous velocity models and stepwise, layered velocity models for the lunar crust

Period	Obligations	
02/01/76-03/15/78	FY79:	TOTAL: $18,565
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gangi, A. F.	HQ-SL/Goldstein, B. E.	32-Geological Sci
Self, S. L.		

NSG 7370 **Texas A&M University** **3605**
Spacecraft evidence for sulfur in the clouds of Venus

Period	Obligations	
06/01/77-11/30/78	FY79:	TOTAL: $22,854
Prin Invest	*NASA Tech Officer*	*CASE Category*
Young, A. T.	HQ-SL/Murphy, R. E.	32-Geological Sci

NSG 7417 **Texas A&M University** **3606**
Velocity model of the shallow lunar crust

Period	Obligations	
03/01/78-09/30/79	FY79:	TOTAL: $21,837
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gangi, A. F.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NAS 9-11162 **Texas Tech University** **3607**
Insulated ECG electrodes

Period	Obligations	
06/29/70-02/01/80	FY79:	TOTAL: $134,892
Prin Invest	*NASA Tech Officer*	*CASE Category*
Portnoy, W. M.	JSC/Day, J. L.	45-Elec Engr

NSG 2137 **Texas Tech University** **3608**
Pharmacological prevention of calcium and bone loss

Period	Obligations	
05/01/76-04/30/80	FY79: $10,000	TOTAL: $38,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kenny, A. D.	ARC/Holton, E. M.	56-Medical Sciences

NSG 7435 **Texas Tech University** **3609**
Application of laser ranging and very long base interferometry data to a study of plate tectonic driving forces

Period	Obligations	
05/01/78-04/30/80	FY79: $16,458	TOTAL: $37,636
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hartman, H. B.	HQ-SB/Halstead, T. W.	32-Geological Sci

NAS 2-10087 **University of Houston - Houston** **3610**
Influence of weightlessness on lignification in developing plant seedlings

Period	Obligations	
11/01/78-10/31/79	FY79: $48,580	TOTAL: $48,580
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cowles, J. R.	ARC/Tremor, J. W.	59-Life Sci, NEC
Scheld, H. W.		

NAS 9-11676 **University of Houston - Houston** **3611**
Characterization of heat transfer in nutrient materials

Period	Obligations	
04/28/71-03/01/81	FY79: $9,99?	TOTAL: $99,948
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cox, J. E.	JSC/Sauer, R. L.	59-Life Sci, NEC

NAS 9-15193 University of Houston - Houston 3612
Analysis and problem-solving of space shuttle aerodynamics and structures

Period	Obligations	
11/01/76-02/01/79	FY79:	TOTAL: $82,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Michalopoulos, C. O. Wheeler, L. T.	JSC/Eggleston, J. M.	41-Aero Engr

NAS 9-15521 University of Houston - Houston 3613
Man-machine analysis of translation and work tasks of Skylab films

Period	Obligations	
02/01/78-12/01/78	FY79:	TOTAL: $10,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morrow, J. R.	JSC/Jackson, J. T.	19-Phys Sci, NEC

NAS 9-15543 University of Houston - Houston 3614
Development of mathematical techniques for the analysis of remote sensing data

Period	Obligations	
03/14/78-12/31/79	FY79: $59,875	TOTAL: $117,735
Prin Invest	*NASA Tech Officer*	*CASE Category*
Decell, H. P., Jr.	JSC/Browne, I. D.	39-Env Sci, NEC

NAS 9-15680 University of Houston - Houston 3615
Conceptual design of a flight operations planning scheduling system

Period	Obligations	
09/11/78-08/31/79	FY79:	TOTAL: $35,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lee, W. B. Steinberg, E.	JSC/Kennedy, M. G.	49-Engr, NEC

NAS 9-15767 University of Houston - Houston 3616
Study of multiwire proportional counter technology for medical application

Period	Obligations	
11/30/78-11/30/79	FY79: $42,500	TOTAL: $42,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lacy, J. L.	JSC/Alexander, W. C.	56-Medical Sciences

NAS 9-15882 University of Houston - Houston 3617
Analysis of volatile metabolites in biological fluids as indicators of prodromal disease conditions

Period	Obligations	
06/01/79-05/31/80	FY79: $49,948	TOTAL: $49,948
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zlatkis, A.	JSC/Schneider, H. J.	51-Biological Sci

NAS 9-15944 University of Houston - Houston 3618
Design of a food service habitat for a large scale space station

Period	Obligations	
08/23/79-11/30/80	FY79: $15,000	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bell, L. Rappole, C.	JSC/Smith, M. C., Jr.	99-Multi-Discip

NGR 44-005-002 University of Houston - Houston 3619
Studies in organic cosmochemistry, including consideration of compound formation under primitive earth conditions & of organic material in selected meteorites

Period	Obligations	
06/18/62-08/31/80	FY79: $165,000	TOTAL: $1,029,905
Prin Invest	*NASA Tech Off.*	*CASE Category*
Oro, J.	HQ-SB/Young, R. S.	32-Geological Sci

NGR 44-005-091 University of Houston - Houston 3620
Spectroscopic and photochemical study of photochromic compounds

Period	Obligations	
03/07/69-08/31/79	FY79:	TOTAL: $505,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Becker, R. S.	HQ-SB/Young, R. S.	12-Chemistry

NGT 44-005-114 University of Houston - Houston 3621
Program of faculty space systems engineering institute

Period	Obligations	
04/06/70-03/31/78	FY79:	TOTAL: $825,080
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huang, C. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 44-005-115 University of Houston - Houston 3622
Summer faculty fellowship program in research

Period	Obligations	
05/06/74-03/31/80	FY79: $150,987	TOTAL: $1,265,089
Prin Invest	*NASA Tech Officer*	*CASE Category*
Huang, C. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1475 University of Houston - Houston 3623
The large-scale coherent structure in the circular jet

Period	Obligations	
12/01/77-11/30/79	FY79: $35,000	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hussain, A. K.	LARC/Maestrello, L. LARC/Seiner, J. M	41-Aero Engr

NSG 1603 University of Houston - Houston 3624
Research on the application of a decoupling algorithm for structural analysis

Period	Obligations	
03/15/79-03/14/80	FY79: $19,800	TOTAL: $19,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Denman, E. D.	LARC/Horner, G. C.	45-Elec Engr

NSG 2337 University of Houston - Houston 3625
The high Reynolds number free shear layer (behind a backward facing step)

Period	Obligations	
09/01/78-06/30/80	FY79: $78,089	TOTAL: $143,712
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hussain, A. K. Kleis, S. J.	ARC/Uiegas, J. R.	47-Materials Engr

NSG 6008 **University of Houston - Houston** **3626**
Investigation of ionospheric disturbances using a parachute deployed payload

Period *Obligations*
12/01/75-08/31/79 FY79: TOTAL: $70,000
Prin Invest *NASA Tech Officer* *CASE Category*
Sheldon, W. R. WFC/Gray, J. W. 19-Phys Sci, NEC
WFC/Gray, J. W.

NSG 7228 **University of Houston - Houston** **3627**
Geologic mapping of the planet Mercury

Period *Obligations*
04/01/76-09/30/78 FY79: TOTAL: $27,358
Prin Invest *NASA Tech Officer* *CASE Category*
King, E. A. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Wahmann, R.

NSG 7300 **University of Houston - Houston** **3628**
The role cell membranes in the regulation of lignification in pine cells

Period *Obligations*
10/01/76-04/30/80 FY79: $29,997 TOTAL: $89,986
Prin Invest *NASA Tech Officer* *CASE Category*
Hendrix, D. H. HQ-SB/Halstead, T. W. 51-Biological Sci
HQ-SB/Geib, D. S.

NSG 7410 **University of Houston - Houston** **3629**
Wind regime of various dune types in the southeastern California desert

Period *Obligations*
11/01/77-04/30/80 FY79: $20,007 TOTAL: $38,714
Prin Invest *NASA Tech Officer* *CASE Category*
Smith, R. S. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7440 **University of Houston - Houston** **3630**
Evolutionary relationships in the microbial world

Period *Obligations*
06/01/78-05/31/80 FY79: $45,000 TOTAL: $90,000
Prin Invest *NASA Tech Officer* *CASE Category*
Fox, G. E. HQ-SB/Young, R. S. 51-Biological Sci

NSG 7551 **University of Houston - Houston** **3631**
Mars. Significance of large open spaces within the north polar dune fields

Period *Obligations*
04/01/79-10/01/79 FY79: $5,000 TOTAL: $5,000
Prin Invest *NASA Tech Officer* *CASE Category*
Smith, R. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 7609 **University of Houston - Houston** **3632**
Measure electron precipitation induced by barium injections in the magnetosphere: Flight of parachute deployed payloads during the barium GEOS experiment

Period *Obligations*
08/01/79-07/31/80 FY79: $42,000 TOTAL: $42,000
Prin Invest *NASA Tech Officer* *CASE Category*
Sheldon, W. R. HQ-ST/Wiskerchen, M. J. 19-Phys Sci, NEC
HQ-ST/Schmerling, E. R.

NSG 7617 **University of Houston - Houston** **3633**
Investigation of multizoned chondrules and dark rim materials in ordinary and carbonaceous chondrites

Period *Obligations*
07/01/79-06/30/80 FY79: $24,959 TOTAL: $24,959
Prin Invest *NASA Tech Officer* *CASE Category*
King, E. A. HQ-SL/French, B. M. 32-Geological Sci
HQ-SL/Quaide, W. L.

NSG 9042 **University of Houston - Houston** **3634**
Aromatic biosynthesis in pine tissues

Period *Obligations*
04/01/76-05/30/80 FY79: $30,000 TOTAL: $119,800
Prin Invest *NASA Tech Officer* *CASE Category*
Coules, J. R. HQ-SB/Halstead, T. W. 51-Biological Sci
Scheld, H. W. HQ-SB/Geib, D. S.

DEN 8-1 **University of Houston - Clear Lake** **3635**
Installation of a solar energy system

Period *Obligations*
06/14/78-10/01/78 FY79: TOTAL: $201,642
Prin Invest *NASA Tech Officer* *CASE Category*
Samfield, E. MSFC/Clark, J. 31-Atmos Sci

NAS 9-15642 **University of Houston - Clear Lake** **3636**
Development of quantitative exercise program for use in space flight

Period *Obligations*
07/17/78-04/30/80 FY79: $25,000 TOTAL: $30,000
Prin Invest *NASA Tech Officer* *CASE Category*
Coleman, A. E. JSC/Alexander, W. C. 56-Medical Sciences

NSG 9043 **University of Houston - Clear Lake** **3637**
Cosmic ray and solar flare irradiation history of regolith crystals and agglutinates

Period *Obligations*
06/01/76-01/31/80 FY79: $21,000 TOTAL: $114,600
Prin Invest *NASA Tech Officer* *CASE Category*
Blanford, G. E. JSC/Harris, J. W. 13-Physics

NSG 3255 **University of Texas - Arlington** **3638**
Generator (MHD) off-design performance with NoX chemical kinetics analysis

Period	Obligations	
03/01/79-01/15/80	FY79: $24,151	TOTAL: $24,151
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilson, D. R.	LERC/Smith, J. M.	49-Engr, NEC
Simmons, G. A., Jr.	LERC/Pian, C. C.	

NAS 5-22576 **University of Texas - Austin** **3639**
Communications link characterization experiment

Period	Obligations	
09/08/75-04/13/80	FY79:	TOTAL: $207,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vogel, W.	GSFC/Hirschmann, E.	45-Elec Engr
Staighton, A. W.		

NAS 5-25018 **University of Texas - Austin** **3640**
Research in identifying dominant error sources inherent in the estimation process by solving for points on the earth's surface

Period	Obligations	
05/17/78-08/31/80	FY79: $29,875	TOTAL: $48,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tapley, B. D.	GSFC/Kahn, W. D.	19-Phys Sci, NEC
Schutz, B. E.		
Sutton, H. E.		

NAS 5-25656 **University of Texas - Austin** **3641**
Space telescope/high resolution spectrograph

Period	Obligations	
05/09/79-01/31/82	FY79: $4,000	TOTAL: $4,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Trafton, L. M.	GSFC/Liberatore, F. J.	11-Astronomy

NAS 5-25756 **University of Texas - Austin** **3642**
Autonomous satellite navigation method using the global positioning satellite system

Period	Obligations	
07/18/79-07/17/80	FY79: $39,500	TOTAL: $39,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tapley, B. D.	GSFC/Fuchs, A. J.	42-Astro Engr
Schutz, B. E.		

NAS 8-31459 **University of Texas - Austin** **3643**
Analysis of ultraviolet stellar spectra obtained with Skylab experiment S-019

Period	Obligations	
06/30/75-08/31/80	FY79:	TOTAL: $391,821
Prin Invest	*NASA Tech Officer*	*CASE Category*
Henize, K. G.	MSFC/Snoddy, W. C.	11-Astronomy
Wray, J. D.		

NAS 8-32905 **University of Texas - Austin** **3644**
Scientific investigation in support of the space telescope project

Period	Obligations	
02/15/78-02/15/84	FY79:	TOTAL: $285,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lambert, D. L.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 8-32906 **University of Texas - Austin** **3645**
Scientific investigations in support of the space telescope project, to assure that the space telescope will perform astrometric functions

Period	Obligations	
02/01/78-02/23/84	FY79: $100,000	TOTAL: $400,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferys, W. H.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 9-13680 **University of Texas - Austin** **3646**
Assessment of real gas effects on the extrapolation of shuttle flow field phenomena to flight conditions

Period	Obligations	
09/27/73-03/15/80	FY79: $25,000	TOTAL: $181,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bertin, J. J.	JSC/Goodrich, W. D.	41-Aero Engr

NAS 9-14491 **University of Texas - Austin** **3647**
Adsorption pumping cryogenic refrigeration study

Period	Obligations	
02/10/75-02/07/80	FY79: $99,402	TOTAL: $376,602
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hartwig, W. H.	JSC/Richard, R. R.	49-Engr, NEC
Steinfink, H.	JSC/Nuss, R. W.	

NAS 9-15093 **University of Texas - Austin** **3648**
Data analysis and associated data storage unit for interferometer system

Period	Obligations	
08/01/76-01/31/78	FY79:	TOTAL: $14,872
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barnes, T.	JSC/Potter, A. E.	11-Astronomy

NAS 9-15217 **University of Texas - Austin** **3649**
Imaging radar mathematical model and airborne imaging radar data collecting system

Period	Obligations	
12/15/76-12/31/78	FY79:	TOTAL: $230,969
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tucker, A. J.	JSC/Pels, G. F.	49-Engr, NEC

NAS 9-15401 **University of Texas - Austin** **3650**
Shuttle imaging radar flight systems/antenna tradeoff and evaluation study

Period	Obligations	
08/01/77-01/01/80	FY79:	TOTAL: $66,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Crow, G. L.	JSC/Nitschke, H. A.	41-Aero Engr

NAS 9-15567 **University of Texas - Austin** **3651**
Interaction of numerical and dynamical stability

Period	Obligations	
04/26/78-06/30/80	FY79: $15,200	TOTAL: $22,200
Prin Invest	*NASA Tech Officer*	*CASE Category*
Szebekely, V. G.	JSC/Bond, V.	12-Chemistry

NASW 2974 University of Texas - Austin 3652
Design, development, construction and operational testing of a completely operational transportable lunar laser tracking station capable of attaining a three century range accuracy

Period	Obligations	
07/16/76-09/30/79	FY79:	TOTAL: $1,351,031
Prin Invest	NASA Tech Officer	CASE Category
Silverberg, E. C.	HQ-SM/Shirey, W. H.	19-Phys Sci, NEC

NGL 44-012-006 University of Texas - Austin 3653
Research on millimeter wavelength radiation from solar bodies

Period	Obligations	
04/29/63-03/31/80	FY79:	TOTAL: $1,466,333
Prin Invest	NASA Tech Officer	CASE Category
Wilson, W. J.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Quaide, W. L.	

NGL 44-012-055 University of Texas - Austin 3654
Polarization and time structure of Jovian decametric radiation and the structure of interplanetary plasma

Period	Obligations	
05/25/66-04/30/80	FY79: $19,908	TOTAL: $1,041,980
Prin Invest	NASA Tech Officer	CASE Category
Douglas, J. N.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 44-012-152 University of Texas - Austin 3655
A program of planetary studies

Period	Obligations	
06/25/69-04/30/80	FY79: $440,000	TOTAL: $3,689,198
Prin Invest	NASA Tech Officer	CASE Category
Smith, H. J.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 44-012-165 University of Texas - Austin 3656
Continuation of lunar laser ranging experiments at McDonald Observatory

Period	Obligations	
10/01/69-12/31/79	FY79: $348,775	TOTAL: $3,278,199
Prin Invest	NASA Tech Officer	CASE Category
Silverberg, E. C.	GSFC/White, W. W.	32-Geological Sci
	HQ-ER/Flinn, E. A.	

NGR 44-012-282 University of Texas - Austin 3657
Outer planet satellite studies

Period	Obligations	
09/01/73-07/31/80	FY79: $89,539	TOTAL: $284,507
Prin Invest	NASA Tech Officer	CASE Category
Mulholland, J. D.	HQ-SL/Brunk, W. E.	11-Astronomy
	HQ-SL/Murphy, R. E.	

NGR 44-012-283 University of Texas - Austin 3658
Precision orbit determination for near-earth satellites

Period	Obligations	
01/14/74-12/31/79	FY79:	TOTAL: $144,410
Prin Invest	NASA Tech Officer	CASE Category
Tapley, B. D.	GSFC/Kolenkiewicz, R.	
Schutz, B. E.	GSFC/Smith, D. E.	32-Geological Sci

NSG 1440 University of Texas - Austin 3659
Accelerating convergence of collocation methods

Period	Obligations	
09/01/77-08/31/79	FY79:	TOTAL: $27,618
Prin Invest	NASA Tech Officer	CASE Category
Daniel, J. W.	LARC/Shoosmith, J. N.	21-Mathematics

NSG 1446 University of Texas - Austin 3660
Research into a data management system for scientific/engineering applications

Period	Obligations	
09/01/77-12/31/79	FY79: $20,000	TOTAL: $97,890
Prin Invest	NASA Tech Officer	CASE Category
Browne, J. C.	LARC/Shipman, F. S.	22-Computer Science
	LARC/Shoosmith, J. N.	

NSG 1479 University of Texas - Austin 3661
Verification/validation of space shuttle flight computer programming language (HAL/S)

Period	Obligations	
01/01/78-12/31/79	FY79:	TOTAL: $51,747
Prin Invest	NASA Tech Officer	CASE Category
Browne, J. C.	LARC/Will, R. W.	22-Computer Science
Good, D. I.	LARC/Foudriat, E. C.	

NSG 1544 University of Texas - Austin 3662
Surface smoothing

Period	Obligations	
06/01/78-06/30/80	FY79: $13,000	TOTAL: $29,046
Prin Invest	NASA Tech Officer	CASE Category
Cline, A. K.	LARC/Schiess, J. R.	
		22-Computer Science

NSG 1632 University of Texas - Austin 3663
Algorithm and software development for multi-level schemes for partial differential equations

Period	Obligations	
07/01/79-06/30/80	FY79: $14,738	TOTAL: $14,738
Prin Invest	NASA Tech Officer	CASE Category
Sherman, A. H.	LARC/Smith, R. E.	21-Mathematics
Bank, R. E.	LARC/Shoosmith, J. N.	

NSG 2065 **University of Texas - Austin** **3664**
Antecedents of achievement and creativity

Period	Obligations	
02/01/75-11/30/79	FY79: $79,331	TOTAL: $295,517
Prin Invest	*NASA Tech Officer*	*CASE Category*
Frey, J.	ARC/Patton, R. M. ARC/Tanner, T. A.	69-Psych, NEC

NSG 2338 **University of Texas - Austin** **3665**
Finite elements and Navier-Stokes' problems

Period	Obligations	
10/01/78-10/01/79	FY79:	TOTAL: $5,329
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carey, G. F.	ARC/Ballhaus, W. F. ARC/Holst, T. L.	41-Aero Engr

NSG 2345 **University of Texas - Austin** **3666**
A program of far-infrared observations of star formation regions in molecular clouds

Period	Obligations	
10/01/78-09/30/80	FY79: $9,745	TOTAL: $9,745
Prin Invest	*NASA Tech Officer*	*CASE Category*
Evans, N. J., II	ARC/Haughney, L. C. ARC/Cameron, R. M.	11-Astronomy

NSG 3089 **University of Texas - Austin** **3667**
Plasma fluctuation diagnostic tool for the Bumpy Torus experiment

Period	Obligations	
11/17/75-12/31/78	FY79: $340	TOTAL: $80,340
Prin Invest	*NASA Tech Officer*	*CASE Category*
Powers, E. J.	LERC/Moeckel, W. E. LERC/Roth, J. R.	45-Elec Engr

NSG 3190 **University of Texas - Austin** **3668**
Preparation, characterization, physical testing and performance of fluorocarbon membranes and separators

Period	Obligations	
06/01/78-05/31/80	FY79: $40,000	TOTAL: $75,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lagow, R. J. Dumitru, E. T.	LERC/Sheibley, D. W. LERC/Hsu, L. C.	56-Medical Sciences

NSG 3198 **University of Texas - Austin** **3669**
Acoustic properties of duct lining materials

Period	Obligations	
07/01/78-06/30/81	FY79:	TOTAL: $60,000
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Blackstock, D. T. Panton, R. L. Perreira, N. D.	LERC/Rice, E. J. LERC/Baumeister, K. J.	13-Physics

NSG 5154 **University of Texas - Austin** **3670**
Research of autonomous satellite navigational methods using global positioning satellite system

Period	Obligations	
03/01/77-05/31/79	FY79:	TOTAL: $76,843
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tapley, B. D. Schutz, B. E.	GSFC/Fuchs, A. J. GSFC/Wooden, W. H., II	21-Mathematics

NSG 5167 **University of Texas - Austin** **3671**
Copernicus observations of stellar winds in early B-type stars

Period	Obligations	
03/14/77-09/13/78	FY79:	TOTAL: $2,801
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, M. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5233 **University of Texas - Austin** **3672**
Ultraviolet spectroscopy of X-ray emitting binary systems and ultraviolet observations of interstellar molecules

Period	Obligations	
02/19/78-08/31/79	FY79:	TOTAL: $12,906
Prin Invest	*NASA Tech Officer*	*CASE Category*
VandenBout, P. A.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5309 **University of Texas - Austin** **3673**
Copernicus ultraviolet spectroscopic observations

Period	Obligations	
12/15/78-12/14/79	FY79: $3,111	TOTAL: $3,111
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, M. A.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5328 **University of Texas - Austin** **3674**
Ultraviolet spectroscopic of giant and supergiant stars

Period	Obligations	
02/01/79-01/31/80	FY79: $11,720	TOTAL: $11,720
Prin Invest	*NASA Tech Officer*	*CASE Category*
Parsons, S. B.	GSFC/Boggess, A.	11-Astronomy

NSG 5337 **University of Texas - Austin** **3675**
Spectrophotometry of selected early type stars

Period	Obligations	
12/15/78-01/31/80	FY79: $9,455	TOTAL: $9,455
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wray, J. D. Henize, K. G.	GSFC/Boggess, A.	11-Astronomy

NSG 5379 **University of Texas - Austin** **3676**
Ultraviolet spectroscopy of symbiotic stars, recurrent and old novae

Period	Obligations	
06/25/79-11/30/79	FY79: $5,000	TOTAL: $5,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lambert, D. L. Shield, G. A.	GSFC/Boggess, A	11-Astronomy

NSG 5387 **University of Texas - Austin** **3677**
Ultraviolet-optical spectrophotometry of interesting quasi-stellar objects

Period	Obligations	
07/01/79-06/30/80	FY79: $1,670	TOTAL: $1,670
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wills, B. J. Wills, D.	GSFC/Boggess, A.	11-Astronomy

NSG 7159 **University of Texas - Austin** **3678**
Preliminary geophysical and geological site survey of the region of the McDonald Observatory

Period	Obligations	
09/08/75-10/31/79	FY79:	TOTAL: $289,057
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dorman, J. H.	HQ-ER/Flinn, E. A.	19-Phys Sci, NEC

NSG 7162 **University of Texas - Austin** **3679**
Lunar laser data identification and management

Period	Obligations	
09/01/75-12/31/79	FY79: $79,713	TOTAL: $302,916
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shelus, P. J.	GSFC/White, W. W. HQ-ER/Flinn, E. A.	19-Phys Sci, NEC

NSG 7232 **University of Texas - Austin** **3680**
Astrophysics of supermassive accretion disks

Period	Obligations	
05/01/76-08/31/80	FY79: $19,000	TOTAL: $73,088
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shield, G. A. Wheeler, J. C.	HQ-SC/Roman, N. G. HQ-SC/Weiler, E. J.	11-Astronomy

NSG 7326 **University of Texas - Austin** **3681**
Origin of channels on Mars

Period	Obligations	
01/01/77-12/31/79	FY79:	TOTAL: $121,440
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baker, V. R	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 7347 **University of Texas - Austin** **3682**
Atomic line strengths and Stark broadening for selected compounds

Period	Obligations	
06/01/77-09/30/78	FY79:	TOTAL: $6,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bengtson, R. D.	HQ-SC/Rosendhal, J. D. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7363 **University of Texas - Austin** **3683**
Lunar tectonics through space and time

Period	Obligations	
07/01/77-07/31/80	FY79:	TOTAL: $50,509
Prin Invest	*NASA Tech Officer*	*CASE Category*
Muehlberger, W. R.	HQ-SL/Dwornik, S. E. HQ-SL/Quaide, W. L.	32-Geological Sci

NSG 7371 **University of Texas - Austin** **3684**
Analysis of ultraviolet stellar spectra obtained with Skylab experiment S-019

Period	Obligations	
08/01/77-07/31/80	FY79: $22,000	TOTAL: $117,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Henize, K. G.	HQ-SC/Roman, N. G. HQ-SC/Rosendhal, J. D.	11-Astronomy

NSG 7381 **University of Texas - Austin** **3685**
Program of 1-5 micron photometry of infrared sources embedded in molecular clouds

Period	Obligations	
09/01/77-08/31/80	FY79: $13,512	TOTAL: $25,945
Prin Invest	*NASA Tech Officer*	*CASE Category*
Evans, N. J., II	HQ-SC/Boggess, N. W. HQ-SC/Roman, N. G.	11-Astronomy

NSG 7408 **University of Texas - Austin** **3686**
Orbital theories of outer planet satellites

Period	Obligations	
12/01/77-11/30/79	FY79:	TOTAL: $20,143
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jefferys, W. H.	HQ-SL/Brunk, W. E. HQ-SL/Quaide, W. L.	11-Astronomy

NSG 7480 **University of Texas - Austin** **3687**
The cellular bases of gravity-and light-induced geotropism

Period	Obligations	
08/15/78-08/14/80	FY79: $70,000	TOTAL: $70,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roux, S. J.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biological Sci

NSG 7505 **University of Texas - Austin** **3688**
Solid state problems in the solar systems

Period	Obligations	
09/01/78-08/31/79	FY79: $67,538	TOTAL: $67,538
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smoluchowski, R.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7557 **University of Texas - Austin** **3689**
Morphogenetic studies of Martian channels

Period	Obligations	
04/01/79-03/31/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Baker, V. R.	HQ-SL/Dwornik, S. E. HQ-SL/Boyce, J. M.	32-Geological Sci

NSG 9021 **University of Texas - Austin** **3690**
Origin of magnetization in lunar breccias and its bearing on their formation

Period	Obligations	
02/01/75-01/31/80	FY79: $8,900	TOTAL: $117,125
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gose, W. A.	JSC/Harris, J. W.	32-Geological Sci

NAS 2-9485 University of Texas - Dallas 3691
Pioneer/Venus data analysis

Period	Obligations	
06/16/77-12/31/79	FY79: $197,161	TOTAL: $283,382
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffman, J. H.	ARC/Hall, C. F.	31-Atmos Sci
Hodges, R. R., Jr.	ARC/Porter, D. L.	

NAS 5-11406 University of Texas - Dallas 3692
Atmosphere Explorer magnetic ion mass spectrometer

Period	Obligations	
04/06/71-09/30/80	FY79: $106,344	TOTAL: $1,598,867
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffman, J. H	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-11407 University of Texas - Dallas 3693
Planar ion trap experiment

Period	Obligations	
04/06/71-09/30/80	FY79: $183,000	TOTAL: $1,848,079
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	GSFC/Rice, C. F.	31-Atmos Sci

NAS 5-24297 University of Texas - Dallas 3694
Ion drift meter for the Dynamic Explorer (DE)

Period	Obligations	
07/26/77-02/28/81	FY79: $210,000	TOTAL: $361,277
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heelis, R. A	GSFC/Fellerman, K. D.	13-Physics
Hanson, W. B.	GSFC/Lidston, J. M.	

NAS 5-24298 University of Texas - Dallas 3695
Retarding potential analyzer for the Dynamic Explorer (DE)

Period	Obligations	
07/26/77-02/28/81	FY79: $200,000	TOTAL: $372,704
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	GSFC/Fellerman, K. D.	13-Physics
Heelis, R. A.	GSFC/Lidston, J. M.	

NAS 5-24299 University of Texas - Dallas 3696
Low altitude plasma instrument for Dynamic Explorer (DE)

Period	Obligations	
11/21/77-05/30/81	FY79: $325,950	TOTAL: $599,334
Prin Invest	*NASA Tech Officer*	*CASE Category*
Winningham, J. D.	GSFC/Fellerman, K. D.	13-Physics
	GSFC/Lidston, J. M.	

NAS 5-25310 University of Texas - Dallas 3697
Design, development, fabrication, test and calibration of the ion velocity instrument for the San Marco spacecraft

Period	Obligations	
09/18/78-04/30/83	FY79: $73,000	TOTAL: $110,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	GSFC/Caporale, A. J.	13-Physics

NAS 8-31775 University of Texas - Dallas 3698
Study of ATS 6 and OGO 5 data analysis

Period	Obligations	
03/18/76-09/27/80	FY79: $21,164	TOTAL: $76,933
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	MSFC/Chappell, C. R.	
	MSFC/Fields, S. A.	19-Phys Sci, NEC

NAS 8-32689 University of Texas - Dallas 3699
Technology demonstration measurement for the molecular wake shield

Period	Obligations	
05/19/78-11/18/79	FY79:	TOTAL: $29,969
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffman, J. H.	MSFC/Oran, W. A	31-Atmos Sci
Hodges, R. R., Jr.	MSFC/Rathz, T. J	
Duerksen, K.		

NAS 8-32831 University of Texas - Dallas 3700
Retarding ion mass spectrometer for Dynamic Explorer (DE)

Period	Obligations	
01/17/78-05/30/83	FY79: $323,000	TOTAL: $583,612
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	MSFC/Chappell, C. R	13-Physics
Hoffman, J. H.	MSFC/Fields, S. A.	

NGL 44-004-026 University of Texas - Dallas 3701
Investigations into the mechanism and rates of atmospheric mixing in the lower thermosphere

Period	Obligations	
05/05/65-03/31/81	FY79: $26,666	TOTAL: $2,364,751
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, F. S.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NGL 44-004-130 University of Texas - Dallas 3702
Selected studies in the space sciences

Period	Obligations	
03/17/72-03/31/82	FY79: $250,000	TOTAL: $1,800,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, F. S.	HQ-SP/Tate, F	99-Multi-Discip

NGR 44-004-120 University of Texas - Dallas 3703
Rocket probes for the upper F-region

Period	Obligations	
02/09/71-03/03/80	FY79: $145,000	TOTAL: $1,130,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B.	HQ-ST/Wiskerchen, M. J	31-Atmos Sci
	HQ-ST/Schmerling, E. R.	

NGR 44-004-124 **University of Texas - Dallas** **3704**
Rocket investigation of auroral zone disturbances

Period	Obligations	
08/10/71-08/31/80	FY79: $146,595	TOTAL: $1,201,616
Prin Invest	*NASA Tech Officer*	*CASE Category*
Winningham, J. D.	GSFC/Bissell, E. E.	13-Physics
Heikkila, W. J.	HQ-S[illegible]/Schmerling, E. R.	
Eaker, N.		

NSG 5085 **University of Texas - Dallas** **3705**
Particle spectrometer onboard ISIS-2

Period	Obligations	
11/01/75-12/31/79	FY79: $30,000	TOTAL: $155,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Heikkila, W. J.	GSFC/Brace, L. H.	31-Atmos Sci
Winningham, J. D.		

NSG 5087 **University of Texas - Dallas** **3706**
Ion composition research on ISIS-2

Period	Obligations	
12/01/75-12/31/79	FY79: $30,000	TOTAL: $115,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffman, J. H.	GSFC/Brace, L. H.	31-Atmos Sci
Dodson, W. H.		

NSG 5280 **University of Texas - Dallas** **3707**
Electrodynamic coupling in the ionosphere magnetosphere system

Period	Obligations	
07/01/78-08/15/80	FY79: $22,611	TOTAL: $49,178
Prin Invest	*NASA Tech Officer*	*CASE Category*
Klumpar, D. M.	GSFC/Spencer, N. W.	31-Atmos Sci
Burrows, J. R.		
Wallis, D. D.		

NSG 6023 **University of Texas - Dallas** **3708**
A rocket program in aeronomy

Period	Obligations	
02/01/78-03/31/79	FY79:	TOTAL: $37,001
Prin Invest	*NASA Tech Officer*	*CASE Category*
Christensen, A. B	WFC/Gray, J. W.	19-Phys Sci, NEC
	WFC/Pless, R. H.	

NSG 7034 **University of Texas - Dallas** **3709**
Investigation of the daytime lunar atmosphere for lunar synthesis program

Period	Obligations	
04/01/74-03/31/80	FY79: $52,376	TOTAL: $283,016
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hodges, R. R., Jr.	HQ-SL/Quaide, W. L.	31-Atmos Sci
	HQ-SL/French, B. E.	

NSG 7599 **University of Texas - Dallas** **3710**
Continued analysis of data from the Viking Retarding Potential Analyzer (RPA)

Period	Obligations	
03/01/79-09/30/79	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hanson, W. B	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 1316 **University of Texas - El Paso** **3711**
ESR studies of viscous liquid crystals: Electric field effects

Period	Obligations	
07/01/76-01/31/80	FY79: $25,000	TOTAL: $103,740
Prin Invest	*NASA Tech Officer*	*CASE Category*
Eastman, M. P.	LARC/Robertson, J. B.	13-Physics
Lawson, J. O.		

NSG 3146 **University of Texas - El Paso** **3712**
Size effect studies of thin metal films

Period	Obligations	
05/02/77-02/01/80	FY79:	TOTAL: $54,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brient, S. J.	LERC/Brandhorst, H. W., Jr.	47-Materials Engr
Roser, W. R.		

NSG 9062 **University of Texas - El Paso** **3713**
Occurrence and mineral chemistry of high pressure phases

Period	Obligations	
06/01/78-12/31/79	FY79:	TOTAL: $25,374
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoffer, J. M.	JSC/Duke, M.	12-Chemistry

NAS 9-14641 **Univ of Texas Medical Branch - Galveston** **3714**
Analysis of spontaneous vestibular primary afferent discharge following application of drugs

Period	Obligations	
05/01/75-03/31/80	FY79: $45,000	TOTAL: $154,973
Prin Invest	*NASA Tech Officer*	*CASE Category*
Correia, M. J.	JSC/Reschke, M. F.	69-Psych, NEC

NAS 9-15565 **Univ of Texas Medical Branch - Galveston** **3715**
Micro assay for catecholamine concentration in body fluids

Period	Obligations	
03/27/78-06/30/80	FY79: $7,500	TOTAL: $15,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ziegler, M. G.	JSC/Leach, C. S.	59-Life Sci, NEC

NSG 7418 **Univ of Texas Medical Branch - Galveston** **3716**
Lunar seismic data analysis

Period	Obligations	
02/01/78-01/31/80	FY79: $200,000	TOTAL: $489,378
Prin Invest	*NASA Tech Officer*	*CASE Category*
Makamura, Y.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

TEXAS (Continued)

NSG 9026 **University of Texas Health Center - Dallas** **3717**
Cardiovascular effect of variations in habitual levels of physical activity

Period	Obligations	
03/01/75-03/31/80	FY79: $60,300	TOTAL: $267,700
Prin Invest	*NASA Tech Officer*	*CASE Category*
Blomquist, C. G. Mitchell, J. H.	JSC/Hull, W. E.	56-Medical Sciences

NSG 9049 **Univ of Texas Health Sci Ctr-San Antonio** **3718**
Trace elements in planetary material by activation analysis

Period	Obligations	
02/01/77-01/31/78	FY79: $62,100	TOTAL: $62,100
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Morgan, J. W.	JSC/Harris, J. W.	13-Physics

NAS 9-15388 **Univ of Texas-Health Science Center** **3719**
Biochemical adaptation of antigravity muscle fibers to disuse atrophy

Period	Obligations	
08/01/77-07/31/80	FY79: $29,750	TOTAL: $86,350
Prin Invest	*NASA Tech Officer*	*CASE Category*
Booth, F.	JSC/Smith, M. A.	51-Biological Sci

NAS 8-32584 **University of Texas - San Antonio** **3720**
Atmosphere Explorer data analysis and Electrodynamic Explorer instrument development

Period	Obligations	
06/15/77-01/31/80	FY79:	TOTAL: $28,423
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burch, J. L.	MSFC/Chappell, C. R. MSFC/Thomas, P. E.	31-Atmos Sci

NSG 5418 **University of Texas - San Antonio** **3721**
Solar-wind and magnetospheric electric fields and plasmas

Period	Obligations	
10/01/79-09/30/80	FY79: $19,744	TOTAL: $19,744
Prin Invest	*NASA Tech Officer*	*CASE Category*
Burch, J. L.	GSFC/Spencer, N. W.	31-Atmos Sci

UTAH

NAS 2-7358 **Brigham Young University** **3722**
Pioneer F/G data analysis of the solar terrestrial relations portion of the magnetic field experiment

Period	Obligations	
00/00/00-04/30/80	FY79: $26,500	TOTAL: $73,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jones, D. E.	ARC/Hall, C. F. ARC/Porter, D. L.	13-Physics

NAS 2-10064 **University of Utah** **3723**
Manufacture of DPFC-DMS polymer in the five kg range

Period	Obligations	
10/02/78-10/01/79	FY79:	TOTAL: $73,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hughes, B. M. Arhart, R. W.	ARC/Kourtides, D.A.	19-Phys Sci, NEC

NAS 2-10308 **University of Utah** **3724**
Growth rate and histology of long bones and vertebrae

Period	Obligations	
09/01/79-08/31/80	FY79: $1,000	TOTAL: $1,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jee, W. S. Kimmel, D. B.	ARC/Souza, K. A.	51-Biological Sci

NAS 5-25373 **University of Utah** **3725**
Linear and nonlinear interactions of the large scale atmospheric waves

Period	Obligations	
11/27/78-12/26/80	FY79: $37,998	TOTAL: $37,998
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kao, S. K.	GSFC/Greaves, J. R. GSFC/Stetina, F. L.	31-Atmos Sci

NAS 6-2498 **University of Utah** **3726**
Upper atmospheric physical and dynamic processes

Period	Obligations	
04/26/74-06/30/79	FY79:	TOTAL: $110,860
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kao, S. K.	WFC/Duke, J. R.	31-Atmos Sci

NAS 6-2627 **University of Utah** **3727**
Rocketsonde data processing and participation in the meteorological rocket/Nimbus satellite data comparison project

Period	Obligations	
03/21/75-10/06/79	FY79: $35,199	TOTAL: $230,431
Prin Invest	*NASA Tech Officer*	*CASE Category*
Staffanson, F. L.	WFC/Duke, J. R. WFC/Schmidlin, F. J.	31-Atmos Sci

NASW 2967 **University of Utah** **3728**
Construction and testing of rotating Sagnac interferometer

Period	Obligations	
09/28/76-09/20/77	FY79:	TOTAL: $39,129
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vali, V.	HQ-RT/Randolph, L. P. JPL/Goss, W.	13-Physics

NSG 1313 **University of Utah** **3729**
Innovative concepts in large area space structures

Period	Obligations	
07/01/76-03/31/80	FY79:	TOTAL: $32,463
Prin Invest	*NASA Tech Officer*	*CASE Category*
Resch, R. D.	LARC/Card, M. F. LARC/Mikulas, M. M., Jr.	49-Engr, NEC

UTAH (Continued)

NSG 1534 — **University of Utah** — **3730**
Fluid dynamics of crystallization from vapors

Period	Obligations	
06/01/78-09/30/79	FY79: $15,000	TOTAL: $100,950
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rosenberger, F. E.	LARC/Fripp, A. L. LARC/Crouch, R. K.	47-Materials Engr

NSG 2350 — **University of Utah** — **3731**
Development of behavioral tests of vestibular functioning in the wistar rat

Period	Obligations	
12/01/78-11/30/79	FY79: $18,033	TOTAL: $18,033
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nielson, H. C.	ARC/Sharp, J. C	61-Biol Aspects

NSG 7226 — **University of Utah** — **3732**
Identifying environmental features for land management decisions

Period	Obligations	
08/01/76-07/31/81	FY79: $100,000	TOTAL: $400,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ridd, M. K.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NSG 7425 — **University of Utah** — **3733**
Infrared map in the vicinity of the crater Plato

Period	Obligations	
04/01/78-07/31/79	FY79:	TOTAL: $13,070
Prin Invest	*NASA Tech Officer*	*CASE Category*
Shorthill, R. W.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7516 — **University of Utah** — **3734**
Mechanistic studies of prebiotic chemistry

Period	Obligations	
10/01/78-12/31/79	FY79: $40,000	TOTAL: $40,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Guillory, W. A. Smith, G. R.	HQ-LU/Pohly, J. G.	12-Chemistry

NAS 2-9857 — **Utah State University** — **3735**
Liquid phase ozone in Freon gas

Period	Obligations	
04/01/77-03/31/80	FY79: $3,060	TOTAL: $10,348
Prin Invest	*NASA Tech Officer*	*CASE Category*
Jeppesen, H.	ARC/Lowenstein, M.	31-Atmos Sci

NAS 5-24455 — **Utah State University** — **3736**
Investigations of Vehicle Charging and Potential (VCAP) on orbital flight test four experiment

Period	Obligations	
03/01/78-10/31/81	FY79: $567,729	TOTAL: $1,000,729
Prin Invest	*NASA Tech Officer*	*CASE Category*
Banks, P. M. Raitt, W. J.	GSFC/Eiband, A. M.	13-Physics

NAS 8-32636 — **Utah State University** — **3737**
Large spacecraft interaction with ambient environment at geosynchronous earth orbit charging

Period	Obligations	
09/20/77-06/11/80	FY79: $20,000	TOTAL: $79,864
Prin Invest	*NASA Tech Officer*	*CASE Category*
Raitt, W. J.	MSFC/Chappell, C. R. MSFC/Baugher, C. R.	31-Atmos Sci

NAS 8-33381 — **Utah State University** — **3738**
Studies related to electro dynamics of the tethered subsattellite system

Period	Obligations	
04/16/79-04/15/80	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williamson, P. R.	MSFC/Johnson, W. G. MSFC/Lundquist, C. A.	31-Atmos Sci

NAS 8-33383 — **Utah State University** — **3739**
Establish a tethered subsatellite facility definition team

Period	Obligations	
05/07/79-05/06/80	FY79: $35,000	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Banks, P. M.	MSFC/Johnson, W. G. MSFC/Stone, N. H.	31-Atmos Sci

NAS 9-14871 — **Utah State University** — **3740**
Higher plant response to elevated ultraviolet irradiance

Period	Obligations	
10/08/75-12/31/79	FY79: $80,000	TOTAL: $360,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Caldwell, M. M.	JSC/Nachtwey, D. S.	54-Env Biology

NSG 5215 — **Utah State University** — **3741**
Studies of high latitude ion dynamics

Period	Obligations	
10/01/77-08/31/80	FY79: $20,380	TOTAL: $42,380
Prin Invest	*NASA Tech Officer*	*CASE Category*
StMaurice, J. P. Sojka, J. Raitt, W. J.	GSFC/Spencer, N. W.	13-Physics

NSG 5216 — **Utah State University** — **3742**
Investigation of electric fields in the vicinity of plasmapause mid-latitude trough and polar cleft

Period	Obligations	
10/01/77-08/31/80	FY79: $19,300	TOTAL: $40,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Foster, J. C. Doupnik, J. R.	GSFC/Spencer, N. W.	13-Physics

UTAH (Continued)

NSG 6027 **Utah State University** **3743**
An investigation of current collection processes in the ionospheric plasma at high potential

Period	Obligations	
03/01/79-02/29/80	FY79: $57,900	TOTAL: $57,900

Prin Invest	NASA Tech Officer	CASE Category
Williamson, P. R.	WFC/Gray, J. W. WFC/Pless, R. H.	19-Phys Sci, NEC

NSG 7038 **Utah State University** **3744**
The diagenesis of geologically important organic matter and amino acids under simulated natural conditions

Period	Obligations	
06/01/74-05/30/80	FY79: $78,861	TOTAL: $342,213

Prin Invest	NASA Tech Officer	CASE Category
Smith, G. G.	HQ-SB/Young, R. S.	32-Geological Sci

NSG 7206 **Utah State University** **3745**
Mass spectrometric study of chlorinated species by negative surface ionization

Period	Obligations	
03/15/76-07/31/79	FY79: $53,392	TOTAL: $105,788

Prin Invest	NASA Tech Officer	CASE Category
Megill, L. R. Moore, W. M. McCullough, E. A.	HQ-ST/Kakar, R. K. HQ-ST/Tilford, S. G.	12-Chemistry

NSG 7210 **Utah State University** **3746**
Stratospheric monitoring with longterm balloon flights

Period	Obligations	
03/01/76-02/28/79	FY79:	TOTAL: $481,189

Prin Invest	NASA Tech Officer	CASE Category
Baker, K. D. Williamson, P. R	HQ-ST/Tilford, S. G.	31-Atmos Sci

NSG 7289 **Utah State University** **3747**
Study of the dynamics of atmosphere-ionosphere magnetosphere interactions

Period	Obligations	
07/01/76-09/30/80	FY79: $110,000	TOTAL: $368,686

Prin Invest	NASA Tech Officer	CASE Category
Banks, P. M.	HQ-ST/Hedin, A. E. HQ-ST/Schmerling, E. R.	31-Atmos Sci

NSG 7388 **Utah State University** **3748**
Method of inferring mesoscale mixing phenomenon

Period	Obligations	
09/01/77-08/31/78	FY79:	TOTAL: $19,880

Prin Invest	NASA Tech Officer	CASE Category
Megill, L. R.	HQ-ST/Kakar, R. K. HQ-ST/Simon, N. K.	31-Atmos Sci

NSG 7567 **Utah State University** **3749**
An examination of the clinostat problem using leafy plants

Period	Obligations	
07/01/71-06/30/80	FY79: $21,460	TOTAL: $21,460

Prin Invest	NASA Tech Officer	CASE Category
Salisbury, F. B.	HQ-SB/Halstead, T. W. HQ-SB/Geib, D. S.	51-Biological Sci

NAS 8-33113 **Weber State College** **3750**
Spectrum synthesis of extreme ultraviolet solar flare profiles

Period	Obligations	
01/24/79-01/23/80	FY79: $17,991	TOTAL: $17,991

Prin Invest	NASA Tech Officer	CASE Category
Tripp, D. A.	MSFC/DeLoach, A. C. MSFC/Thomas, P. E.	31-Atmos Sci

VERMONT

NAS 8-33335 **Middlebury College** **3751**
Study of Supernova remnant

Period	Obligations	
03/08/79-03/07/80	FY79: $9,168	TOTAL: $9,168

Prin Invest	NASA Tech Officer	CASE Category
Winkler, P. F., Jr.	MSFC/Jones, J. B., Jr.	11-Astronomy

NSG 5198 **Middlebury College** **3752**
Investigations of X-ray emission from Supernova remnants

Period	Obligations	
08/01/77-01/31/79	FY79:	TOTAL: $14,980

Prin Invest	NASA Tech Officer	CASE Category
Winkler, P. F., Jr.	GSFC/Kupperian, J. E., Jr	11-Astronomy

NSG 7453 **University of Vermont** **3753**
Development of a remote sensing applications program in Vermont

Period	Obligations	
06/01/78-05/31/82	FY79: $100,000	TOTAL: $300,000

Prin Invest	NASA Tech Officer	CASE Category
John, H. H.	HQ-ET/Vitale, J. A.	32-Geological Sci

VIRGINIA

NSG 1514 **Christopher Newport College** **3754**
An investigation of semiconductor electrodes

Period	Obligations	
09/01/78-12/31/79	FY79: $18,190	TOTAL: $28,257

Prin Invest	NASA Tech Officer	CASE Category
Buoncristiani, A. M.	LARC/Byvik, C. E. LARC/Conway, E. J.	13-Physics

NSG 1614 **Christopher Newport College** **3755**
Theoretical study of radiation effects in composite materials for space use

Period	Obligations	
07/01/79-06/30/80	FY79: $32,000	TOTAL: $32,000

Prin Invest	NASA Tech Officer	CASE Category
Chang, C. K.	LARC/Wilson, J. W.	19-Phys Sci, NEC

NAS 1-9990 **College of William And Mary** **3756**
Management, operation, and maintenance of the space radiation effects laboratory

Period	Obligations	
07/01/70-12/31/79	FY79: $116,333	TOTAL: $3,486,194

Prin Invest	NASA Tech Officer	CASE Category
Heeman, W.	LARC/Smith, D. D.	19-Phys Sci, NEC

NAS 1-14972 **College of William And Mary** **3757**
Research in the area of physical sciences

Period	Obligations	
05/31/77-05/30/80	FY79: $101,860	TOTAL: $298,618

Prin Invest	NASA Tech Officer	CASE Category
Aceto, H., Jr.	LARC/Anderson, A. F.	99-Multi-Discip

NAS 1-15899 **College of William And Mary** **3758**
Lecture series, 'Our Future in the Cosmos'

Period	Obligations	
07/31/79-10/30/80	FY79: $32,119	TOTAL: $32,119

Prin Invest	NASA Tech Officer	CASE Category
Barnes, C. H., Jr.	LARC/Greene, R.F., Jr.	99-Multi-Discip
	LARC/Long, S. A.	

NAS 1-15965 **College of William And Mary** **3759**
Tire nonlinear model

Period	Obligations	
09/07/79-06/06/80	FY79: $31,000	TOTAL: $31,000

Prin Invest	NASA Tech Officer	CASE Category
Andersen, C. M.	LARC/Tanner, J. A.	46-Mech Engr

NCC 1 3 **College of William And Mary** **3760**
Atmos Spacelab science investigation

Period	Obligations	
05/01/79-04/30/80	FY79: $35,000	TOTAL: $35,000

Prin Invest	NASA Tech Officer	CASE Category
Smith, M. A.	LARC/Sullivan, E. M.	31-Atmos Sci
Smith, M. A.	LARC/Russell, J. M., III	

NCC 1 16 **College of William And Mary** **3761**
Analysis of remote sensors for pollution

Period	Obligations	
08/01/79-07/31/80	FY79: $48,361	TOTAL: $48,361

Prin Invest	NASA Tech Officer	CASE Category
Smith, M. A.	LARC/Sullivan, E. M.	31-Atmos Sci
	LARC/Russell I, J. M.	

NGL 47-006-058 **College of William And Mary** **3762**
Research in the applied science program

Period	Obligations	
08/15/72-08/31/79	FY79:	TOTAL: $398,400

Prin Invest	NASA Tech Officer	CASE Category
Rublein, G. T.	LARC/Anderson, A. F.	99-Multi-Discip

NSG 1095 **College of William And Mary** **3763**
Molecular weight-property relationships of high performance polymers used for adhesives and composites

Period	Obligations	
09/01/74-11/30/79	FY79: $9,974	TOTAL: $51,268

Prin Invest	NASA Tech Officer	CASE Category
Kranbuehl, D. E	LARC/Burks, H. D.	12-Chemistry
	LARC/Johnston, N. J.	

NSG 1203 **College of William And Mary** **3764**
Analysis of remote sensors for pollution

Period	Obligations	
08/01/75-07/31/79	FY79: $2,500	TOTAL: $127,250

Prin Invest	NASA Tech Officer	CASE Category
Park, J. H.	LARC/Sullivan, E. M	31-Atmos Sci
	LARC/Russell, J. M., III	

NSG 1385 **College of William And Mary** **3765**
New infrared detectors and solar cells

Period	Obligations	
02/01/77-05/31/80	FY79: $47,200	TOTAL: $137,200

Prin Invest	NASA Tech Officer	CASE Category
Sher, A.	LARC/Miller, W. E.	13-Physics
	LARC/Hendricks, H. D.	

NSG 1435 **College of William And Mary** **3766**
Development of a multi-target compiler writing system

Period	Obligations	
07/11/77-09/30/80	FY79: $124,875	TOTAL: $206,960

Prin Invest	NASA Tech Officer	CASE Category
Donegan, M. K.	LARC/Harris, J. L.	21-Mathematics
Noonan, R. E.	LARC/Voigt, S. J.	
Donegan, M. K.		

NSG 1564 **College of William And Mary** **3767**
Dynamics of collisionless systems

Period	Obligations	
10/15/78-05/31/80	FY79: $12,066	TOTAL: $12,066

Prin Invest	NASA Tech Officer	CASE Category
Zang, T. A.	LARC/Hohl, F.	13-Physics

NSG 1625 **College of William And Mary** **3768**
Methodologies for optimizing maintenance models for advanced, avionics control systems

Period	Obligations	
09/01/79-08/31/80	FY79: $28,419	TOTAL: $28,419

Prin Invest	NASA Tech Officer	CASE Category
Schaefer, M. K.	LARC/Migneault, G. E.	49-Engr, NEC

NSG 1626 **College of William And Mary** **3769**
Investigation of portability techniques for a large flight-oriented programming language

Period	Obligations	
06/01/79-05/31/80	FY79: $40,137	TOTAL: $40,137
Prin Invest	*NASA Tech Officer*	*CASE Category*
Feyock, S.	LARC/Foudriat, E. C.	22-Computer Science

NSG 1653 **College of William And Mary** **3770**
Insulators for plumbum-stannum-tellurium metal-insulator-semiconductor devices

Period	Obligations	
10/01/79-09/30/80	FY79: $26,560	TOTAL: $26,560
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sher, A.	LARC/Fripp, A. L.	13-Physics
Tsuo, Y. N.	LARC/Crouch, R. K.	

NSG 7416 **College of William And Mary** **3771**
Research on turbulence in plasmas

Period	Obligations	
12/01/77-11/30/80	FY79: $38,300	TOTAL: $70,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Montgomery, D. C.	HQ-ST/Cauffman, D. P.	19-Phys Sci, NEC
	HQ-ST/Schmerling, E. R.	

NAS 6-2964 **Eastern Shore Community College** **3772**
Provide a public information program

Period	Obligations	
01/01/79-12/31/79	FY79: $14,758	TOTAL: $14,758
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Layman, P.	WFC/Milliner, J. B.	99-Multi-Discip
	WFC/Gladding, M. T.	

NCA 5-92 **George Mason University** **3773**
Study of forbidden line emission from abundant heavy element ions in hot nebulae

Period	Obligations	
08/01/78-10/21/78	FY79:	TOTAL: $4,700
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Kafotos, M.	GSFC/Hobbs, R. W.	11-Astronomy

NSG 5305 **George Mason University** **3774**
Calculations of forbidden line emission from hot, interstellar gas regions

Period	Obligations	
11/01/78-11/30/79	FY79: $4,701	TOTAL: $4,701
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kafotos, M.	GSFC/Hobbs, R. W.	11-Astronomy

NSG 5371 **George Mason University** **3775**
Observation of circumstellar shells around cool giants and supergiants

Period	Obligations	
06/01/79-05/31/80	FY79: $5,498	TOTAL: $5,498
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kafotos, M.	GSFC/Boggess, A.	11-Astronomy

NSG 5403 **George Mason University** **3776**
Interpretation of survey work of Supernova shocks, bubbles and studying variability of active galaxies

Period	Obligations	
07/01/79-05/31/80	FY79: $7,864	TOTAL: $7,864
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kafotos, M.	GSFC/Gull, T. R.	11-Astronomy
	GSFC/Boggess, A.	

NAS 1-14507 **Hampton Institute** **3777**
Conversion of flight records

Period	Obligations	
07/01/76-09/30/79	FY79: $38,921	TOTAL: $73,609
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williams, G. K.	LARC/Jewel, J. W., Jr.	41-Aero Engr
	LARC/Morris, G. J.	

NAS 1-14832 **Hampton Institute** **3778**
Summer research fellowship program

Period	Obligations	
02/04/77-10/31/79	FY79: $4,125	TOTAL: $147,125
Prin Invest	*NASA Tech Officer*	*CASE Category*
Darden, G. C.	LARC/Erickson, W. D.	19-Phys Sci, NEC

NAS 1-15445 **Hampton Institute** **3779**
Minimization of differences between simulated and actual flight data for area navigation (R-Nav) on high speed aircraft

Period	Obligations	
07/06/78-07/05/79	FY79:	TOTAL: $14,592
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hargrove, A.	LARC/Knox, C. E.	41-Aero Engr
	LARC/Taylor, R. T.	

NAS 1-15877 **Hampton Institute** **3780**
Experimental and theoretical investigations of freestream noise in supersonic nozzles and its effects on boundary layer stability and transition

Period	Obligations	
07/11/79-10/01/80	FY79: $44,409	TOTAL: $44,409
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anyiwo, J. C.	LARC/Beckwith, I. E.	41-Aero Engr
Schopper, M. R.	LARC/Bushnell, D. M.	

NCA 1-25 **Hampton Institute** **3781**
Summer student training program with Hampton Institute

Period	Obligations	
06/05/79-04/01/80	FY79: $16,109	TOTAL: $16,109
Prin Invest	*NASA Tech Officer*	*CASE Category*
Slaughter, L. H.	LARC/Cox, J. J.	49-Engr, NEC

NCC 1 7 **Hampton Institute** **3782**
Algorithms for effective use of the CDC Star-100 computer in the solution of over-determined linear system of linear equations

Period	Obligations	
04/15/79-01/18/80	FY79: $31,997	TOTAL: $31,997
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Shan, S. N.	LARC/Haigler, G. W.	21-Mathematics
	LARC/Lambiotte, J. J., Jr.	

NCC 1 11 **Hampton Institute** **3783**
Radiative transfer model for remote sensing of laser-induced fluorescence of phytoplankton in non-homogeneous turbid waters

Period	Obligations	
05/01/79-04/30/80	FY79: $42,648	TOTAL: $42,648
Prin Invest	*NASA Tech Officer*	*CASE Category*
Peterson, A. M.	LARC/Poole, L. R.	39-Env Sci, NEC
	LARC/Campbell, J. W.	

NSG 1294 **Hampton Institute** **3784**
A study of digital techniques for high-speed processing of detector array data

Period	Obligations	
04/01/76-03/31/80	FY79: $40,409	TOTAL: $149,706
Prin Invest	*NASA Tech Officer*	*CASE Category*
Trehan, A. K.	LARC/Jobson, D. J.	45-Elec Engr
	LARC/Katzberg, S. J.	

NSG 1478 **Hampton Institute** **3785**
Improvements in digital optimal control of nonlinear multivariable constrained systems

Period	Obligations	
02/01/78-05/31/79	FY79:	TOTAL: $39,383
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hargrove, A.	LARC/Hogge, J. E.	21-Mathematics
	LARC/Parks, C. L.	

NSG 1505 **Hampton Institute** **3786**
Experimental and theoretical investigation of free stream noise in supersonic nozzles

Period	Obligations	
04/01/78-10/31/79	FY79:	TOTAL: $35,970
Prin Invest	*NASA Tech Officer*	*CASE Category*
Anyiwo, J. C.	LARC/Beckwith, I. E.	41-Aero Engr
Schopper, M. R.	LARC/Bushnell, D. M.	

NSG 1552 **Hampton Institute** **3787**
Investigation of microprocessors for use as controllers for tunable diode lasers

Period	Obligations	
07/24/78-09/23/80	FY79: $36,032	TOTAL: $71,485
Prin Invest	*NASA Tech Officer*	*CASE Category*
Trehan, A. K.	LARC/Katzberg, S. J.	45-Elec Engr
Davenport, J. E.	LARC/Kowitz, H. R.	

NSG 1595 **Hampton Institute** **3788**
Studies of new media for radiation induced lasers

Period	Obligations	
02/01/79-01/31/80	FY79: $39,423	TOTAL: $39,423
Prin Invest	*NASA Tech Officer*	*CASE Category*
Han, K. S.	LARC/Hohl, F.	13-Physics

NAS 1-14193 **Old Dominion University** **3789**
Research in physical and life sciences

Period	Obligations	
10/01/75-09/30/78	FY79: $44,286	TOTAL: $632,791
Prin Invest	*NASA Tech Officer*	*CASE Category*
Maygarden, E. M.	LARC/Anderson, A. F.	99-Multi-Discip

NAS 1-15648 **Old Dominion University** **3790**
Research in aerodynamics and related fields

Period	Obligations	
12/13/78-12/12/81	FY79: $167,688	TOTAL: $167,688
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unavailable	LARC/Erickson, W. D.	41-Aero Engr
	LARC/Duberg, J. E.	

NCC 1 2 **Old Dominion University** **3791**
Measurements of the global distribution of carbon monoxide in the troposphere

Period	Obligations	
04/01/79-12/31/79	FY79: $76,925	TOTAL: $76,925
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kindle, E. C.	LARC/Reichle, H. G., Jr.	31-Atmos Sci
	LARC/Beck, S. M.	

NCC 1 9 **Old Dominion University** **3792**
Wind tunnel studies of advanced cargo aircraft concepts

Period	Obligations	
06/22/79-06/21/80	FY79: $60,538	TOTAL: $60,538
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L.	LARC/Peterson, J. B., Jr.	41-Aero Engr
Rao, D. M.		

NGR 47-003-052 **Old Dominion University** **3793**
Graduate research program in aeronautics and air transportation

Period	Obligations	
05/12/71-08/31/81	FY79: $54,004	TOTAL: $633,922
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roberts, A. S., Jr.	LARC/Erickson, W. D.	41-Aero Engr

NGT 47-003-028 **Old Dominion University** **3794**
Summer faculty fellowship program in engineering systems design

Period	Obligations	
11/14/69-03/31/80	FY79: $124,141	TOTAL: $1,021,937
Prin Invest	*NASA Tech Officer*	*CASE Category*
McRee, G. J.	HQ-LU/Carter, C. H.	49-Engr, NEC

NGT 47-003-029 **Old Dominion University** **3795**
Summer faculty fellowship program in research

Period	Obligations	
11/14/69-03/31/80	FY79: $147,112	TOTAL: $1,154,656
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L.	HQ-LU/Carter, C. H.	49-Engr, NEC

NSG 1079 **Old Dominion University** **3796**
Optimal adaptive wind tunnel control

Period	Obligations	
09/01/74-11/30/79	FY79: $23,137	TOTAL: $121,786
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tcheng, P. L.	LARC/Tripp, J. S.	45-Elec Engr

NSG 1131 **Old Dominion University** **3797**
Remote measurements of atmospheric trace constituents

Period	Obligations	
01/01/75-01/31/79	FY79:	TOTAL: $120,963
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kindle, E. C.	LARC/Dodgen, J. A	31 Atmos Sci
Twitty, J.	LARC/Lebel, P. J.	
Brost, R.		

NSG 1143 **Old Dominion University** **3798**
Sensor for measuring instantaneous angle of attack of helicopter blades

Period	Obligations	
01/13/75-07/31/79	FY79:	TOTAL: $127,676
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barna, P. S	LARC/Kershner, D. D	41-Aero Engr
	LARC/Pitts, F.	

NSG 1167 **Old Dominion University** **3799**
The structural behavior of advanced composite materials

Period	Obligations	
06/01/75-05/31/81	FY79:	TOTAL: $135,490
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thornton, E. A	LARC/Davis, J. G., Jr.	41-Aero Engr
	LARC/Pride, R. A.	

NSG 1177 **Old Dominion University** **3800**
Experimental and analytical studies in fluidics

Period	Obligations	
05/01/75-02/28/82	FY79: $23,431	TOTAL: $106,733
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rogerson, A. C.	LARC/Hellbaum, R. F.	45-Elec Engr
Brown, N. B., Jr.		

NSG 1271 **Old Dominion University** **3801**
Space shuttle experiments studies

Period	Obligations	
03/01/76-02/29/80	FY79: $141,086	TOTAL: $543,561
Prin Invest	*NASA Tech Officer*	*CASE Category*
Brock, F. J.	LARC/Melfi, L. T., Jr.	13-Physics
Clay, F. P., Jr.	LARC/Outlaw, R. A.	
Hueser, J. E.		

NSG 1279 **Old Dominion University** **3802**
Preliminary investigations into the active control of large space structures

Period	Obligations	
02/15/76-06/30/80	FY79: $46,998	TOTAL: $130,162
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tweed, J.	LARC/Card, M. F	49-Engr, NEC
Hyer, M. W.	LARC/Housner, J. M	

NSG 1315 **Old Dominion University** **3803**
Wind tunnel studies of advanced cargo concepts

Period	Obligations	
06/22/76-06/21/79	FY79	TC $122,821
Prin Invest	*NASA Tech Officer*	*Category*
Goglia, G. L	LARC/Peterson, J. B., Jr	to Engr
Rao, D. M.		

NSG 1321 **Old Dominion University** **3804**
Concepts for structurally compatible thermal finite elements

Period	Obligations	
09/01/76-12/31/79	FY79 $35,708	TOTAL: $82,249
Prin Invest	*NASA Tech Officer*	*CASE Category*
Thornton, E. A	LARC/Wieting, A. R	49-Engr, NEC

NSG 1324 **Old Dominion University** **3805**
The contribution of molecular relaxation in nitrogen to the absorption of sound in the atmosphere

Period	Obligations	
09/01/76-12/31/79	FY79: $51,495	TOTAL: $155,699
Prin Invest	*NASA Tech Officer*	*CASE Category*
Zuckerwar, A. J.	LARC/Holmes, H. K	13-Physics
Becher, J.		

NSG 1331 **Old Dominion University** **3806**
Antenna design and development for microwave subsystem experiments for the terminal configured vehicle project

Period	Obligations	
08/01/76-12/31/79	FY79 $14,522	TOTAL: $61,617
Prin Invest	*NASA Tech Officer*	*CASE Category*
Becher, J.	LARC/Campbell, T. G	45-Elec Engr
Cohen, N. V.	LARC/Young, W. H., Jr	

NSG 1341 **Old Dominion University** **3807**
Science and software support for spacecraft solar occultation experiments

Period	Obligations	
10/01/76-09/30/79	FY79	TOTAL: $40,514
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chu, W. P.	LARC/McMaster, L. R.	31-Atmos Sci
Becher, J.	LARC/McCormick, M. P.	

NSG 1357 **Old Dominion University** **3808**
Implementation of advanced Trefftz plane drag optimization technique in vortex lattice wing design program

Period	Obligations	
11/08/76-08/31/80	FY79: $34,374	TOTAL: $66,039
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kuhlman, J. M.	LARC/Peterson, J. B., Jr. LARC/Polhamus, E. C	41-Aero Engr

NSG 1362 **Old Dominion University** **3809**
Fission induced plasmas

Period	Obligations	
12/10/76-12/15/78	FY79:	TOTAL $51,784
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harries, W. L.	LARC/Hohl, F.	13-Physics

NSG 1379 **Old Dominion University** **3810**
Feasibility study of a microprocessor based oculometer system

Period	Obligations	
01/01/77-12/31/79	FY79: $63,386	TOTAL $166,648
Prin Invest	*NASA Tech Officer*	*CASE Category*
Varanasi, M. R.	LARC/Gainer, P. A. LARC/Waller, M. C.	45-Elec Engr

NSG 1393 **Old Dominion University** **3811**
Computational solution of atmospheric chemistry problems

Period	Obligations	
06/01/77-12/31/80	FY79 $50,463	TOTAL $92,291
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ake, R. L. Jafri, J. A.	LARC/Phillips, D. H. LARC/Rogowski, R. S.	12-Chemistry

NSG 1394 **Old Dominion University** **3812**
Evaluation of atmospheric trace constituent sensors operating from remote space and airborne platforms

Period	Obligations	
02/14/77-06/13/79	FY79:	TOTAL $70,083
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kindle, E. C.	LARC/Reichle, H. G., Jr.	31-Atmos Sci

NSG 1395 **Old Dominion University** **3813**
Data reduction analysis and application technique development for atmospheric trace gas constituents derived from remote sensors on satellite or airborne platforms

Period	Obligations	
02/14/77-12/31/79	FY79: $85,495	TOTAL: $222,332
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kindle, E. C. Casas, J. C.	LARC/Beck, S. M. LARC/Reichle, H. G., Jr	31-Atmos Sci

NSG 1459 **Old Dominion University** **3814**
Analysis and identification of flight measurements by time-domain/randomdec technique

Period	Obligations	
10/01/77-01/31/80	FY79:	TOTAL: $44,202
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ibrahim, S. R.	LARC/Hanks, B. R.	46-Mech Engr

NSG 1464 **Old Dominion University** **3815**
Effects of angle-of-attack on the coupled radiative and convective heat transfer about blunt planetary entry bodies

Period	Obligations	
11/01/77-12/31/79	FY79: $42,930	TOTAL: $77,364
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tiwari, S. N Kumar, A.	LARC/Graves, R. A., Jr	1-Aero Engr

NSG 1466 **Old Dominion University** **3816**
Expanded development of heterodyne detector systems for measurement of atmospheric trace constituents

Period	Obligations	
10/15/77-12/14/79	FY79: $44,776	TOTAL $110,376
Prin Invest	*NASA Tech Officer*	*CASE Category*
Copeland, G. E. Harward, C. N	LARC/Joell, J. M. LARC/Bair, C. [illegible]	1-Atmos Sci

NSG 1473 **Old Dominion University** **3817**
Development of controller design methodology for large flexible space structures

Period	Obligations	
11/15/77-11/14/79	FY79: $45,997	TOTAL $85,638
Prin Invest	*NASA Tech Officer*	*CASE Category*
Roberts, A. S., Jr. Joshi, S. M	LARC/Groom, N. J	49-Engr, NEC

NSG 1477 **Old Dominion University** **3818**
Investigation of potential of differential absorption lidar techniques for remote sensing of atmospheric pollutants

Period	Obligations	
11/15/77-12/14/79	FY79 $148,712	TOTAL: $261,690
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kindle, E. C	LARC/Browell, E. V	39-Env Sci, NEC

NSG 1480 **Old Dominion University** **3819**
Comparative study of flare control laws

Period	Obligations	
12/15/77-12/14/79	FY79 $39,076	TOTAL $71,999
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tcheng, P. L. Nadkarni, A. A	LARC/Creedon, J. F. LARC/Hueschen, R. M	41-Aero Engr

NSG 1491 **Old Dominion University** **3820**
Hot wire laser Doppler velocimeter and mean measurements on flow phenomena induced by suction through perforated surfaces

Period	Obligations	
02/01/78-01/31/80	FY79 $3[illegible],390	TOTAL $60,857
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L. Wilkerson, S	LARC/Bushnell, D. M LARC/Hefner, J. N.	41-Aero Engr

NSG 1500 **Old Dominion University** **3821**
Investigation of the flow-phenomena around a Jovian entry body under chemical and radiative nonequilibrium conditions

Period	Obligations	
02/01/78-01/31/80	FY79: $20,428	TOTAL: $35,334
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tiwari, S. N.	LARC/Sutton, K. LARC/Walberg, G. D.	49-Engr, NEC

NSG 1503 **Old Dominion University** **3822**
Cryogenic transonic tunnel modeling and flow control

Period	Obligations	
03/15/78-03/14/80	FY79: $39,191	TOTAL: $75,536
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L. Balakrishna, S.	LARC/Kilgore, R. A. LARC/Adc[illegible], J. B.	41-Aero Engr

NSG 1507 **Old Dominion University** **3823**
Photoelastic studies of advanced lap joint concept

Period	Obligations	
03/15/78-09/30/79	FY79: $9,045	TOTAL: $26,198
Prin Invest	*NASA Tech Officer*	*CASE Category*
Prabhakaran, R.	LARC/Mikulas, M. M., Jr.	42-Astro Engr

NSG 1517 **Old Dominion University** **3824**
A numerical investigation of viscous slot flow

Period	Obligations	
04/15/78-09/30/79	FY79:	TOTAL: $31,210
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cooke, C. H.	LARC/Dwoyer, D. L.	41-Aero Engr

NSG 1519 **Old Dominion University** **3825**
Output feedback synthesis for stochastic multivariable systems

Period	Obligations	
04/01/78-09/15/79	FY79:	TOTAL: $40,168
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liberty, S. R.	LARC/Moul, M. T. LARC/Elliott, J. R.	41-Aero Engr

NSG 1521 **Old Dominion University** **3826**
Development of high strength and toughness 7000 series aluminum alloys

Period	Obligations	
05/01/78-11/15/79	FY79:	TOTAL: $34,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cupschalk, S. G.	LARC/Lisagor, W. B.	47-Materials Engr

NSG 1522 **Old Dominion University** **3827**
Radiative transfer models for the earth radiation budget and climatic studies

Period	Obligations	
04/01/78-12/31/79	FY79: $30,302	TOTAL: $59,739
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tiwari, S. N.	LARC/Suttles, J. T. LARC/Young, G. R.	31-Atmos Sci

NSG 1560 **Old Dominion University** **3828**
Development of a nonlinear vortex method

Period	Obligations	
09/01/78-09/30/80	FY79: $35,000	TOTAL: $58,230
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Kandil, O. A.	LARC/Yates, E. C., Jr. LARC/Young, W. H., Jr.	41-Aero Engr

NSG 1561 **Old Dominion University** **3829**
Investigation of aerodynamic characteristics of wings having vortex flow using different numerical codes

Period	Obligations	
09/01/78-08/31/81	FY79: $85,079	TOTAL: $93,079
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L. Reddy, C. S.	LARC/Lamar, J. E. LARC/Polhamus, E. C.	41-Aero Engr

NSG 1563 **Old Dominion University** **3830**
Scale models for the improvement of flow patterns of a low speed tunnel

Period	Obligations	
09/15/78-09/14/80	FY79: $51,124	TOTAL: $51,124
Prin Invest	*NASA Tech Officer*	*CASE Category*
Barna, P. S.	LARC/Gentry, G. L.	41-Aero Engr

NSG 1565 **Old Dominion University** **3831**
An investigation of the feasibility of improving oculometer data analysis through application of advanced statistical techniques

Period	Obligations	
11/01/78-10/31/79	FY79: $19,859	TOTAL: $19,859
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rana, D. S.	LARC/Waller, M. C. LARC/Harris, R. L.	21-Mathematics

NSG 1568 **Old Dominion University** **3832**
Theoretical study of solar pumped lasers

Period	Obligations	
12/15/78-01/14/80	FY79: $19,998	TOTAL: $19,998
Prin Invest	*NASA Tech Officer*	*CASE Category*
Harries, W. L.	LARC/Hohl, F.	13-Physics

NSG 1618 **Old Dominion University** **3833**
Free stream disturbances, continuous eigenfunction boundary layer in stability and transition

Period	Obligations	
05/16/79-05/15/80	FY79: $24,904	TOTAL: $24,904
Prin Invest	*NASA Tech Officer*	*CASE Category*
Grosch, C. E.	LARC/Bushnell, D. M. LARC/Hefner, J. N.	41-Aero Engr

NSG 1634 **Old Dominion University** **3834**
Investigation of the effect of standing pressure waves on laminated transitional boundary layer flow

Period	Obligations	
09/01/79-08/31/80	FY79: $20,071	TOTAL: $20,071
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ash, R. L.	LARC/Hefner, J. N. LARC/Bushnell, D. M.	41-Aero Engr

NSG 1645 **Old Dominion University** **3835**
Application of stability theory to laminar flow control

Period	Obligations	
09/01/79-08/31/80	FY79: $44,642	TOTAL: $44,642
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goglia, G. L. Elhady, N. M.	LARC/Harvey, W. D.	41-Aero Engr

NSG 1649 **Old Dominion University** **3836**
Dynamic identification for control of large space structures

Period	Obligations	
10/01/79-09/30/80	FY79: $36,807	TOTAL: $36,807
Prin Invest	*NASA Tech Officer*	*CASE Category*
Ibrahim, S. R.	LARC/Card, M. F.	46-Mech Engr

NSG 1650 **Old Dominion University** **3837**
Design of multi-variable feedback control systems via spectral assignment

Period	Obligations	
09/01/79-07/31/80	FY79: $40,084	TOTAL: $40,084
Prin Invest	*NASA Tech Officer*	*CASE Category*
Liberty, S. R. Mielke, R. R.	LARC/Moul, M. T. LARC/Elliott, J. R.	41-Aero Engr

NSG 1655 **Old Dominion University** **3838**
Airborne antenna pattern calculations

Period	Obligations	
11/01/79-10/31/80	FY79: $20,101	TOTAL: $20,101
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mielke, R. R.	LARC/Gilreath, M. C.	45-Elec Engr

NSG 5053 **Old Dominion University** **3839**
Radiation investigations of optical and electronic components used in astronomical satellite studies

Period	Obligations	
02/17/75-01/31/80	FY79:	TOTAL: $177,747
Prin Invest	*NASA Tech Officer*	*CASE Category*
Becher, J. Kernell, R. L.	GSFC/Fowler, W. B.	19-Phys Sci, NEC

NSG 5289 **Old Dominion University** **3840**
Radiation effects studies for the high resolution spectrograph

Period	Obligations	
07/10/78-11/30/79	FY79: $65,000	TOTAL: $105,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Becher, J.	GSFC/Fowler, W. B.	13-Physics

NAS 1-14862 **University of Virginia** **3841**
Interactive software invocation system

Period	Obligations	
04/01/77-10/15/79	FY79: $37,880	TOTAL: $143,438
Prin Invest	*NASA Tech Officer*	*CASE Category*
Berman, W. J.	LARC/Will, R. W. LARC/Straeter, T. A	22-Computer Science

NAS 1-14908 **University of Virginia** **3842**
Air transportation systems research

Period	Obligations	
05/02/77-05/02/80	FY79: $101,000	TOTAL: $198,658
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kuhlthau, A. R.	LARC/Conner, D. W. LARC/Brissenden, R. F.	49-Engr, NEC

NAS 2-10195 **University of Virginia** **3843**
Effect of weightlessness on body mass and organ mass and composition in the rat

Period	Obligations	
02/21/79-08/31/80	FY79: $12,177	TOTAL: $12,177
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pitts, G. C.	ARC/Souza, K. A.	59-Life Sci, NEC

NAS 5-22346 **University of Virginia** **3844**
Design and application of a one meter UV-optical telescope for Spacelab astronomy missions

Period	Obligations	
04/29/75-06/30/80	FY79:	TOTAL: $33,468
Prin Invest	*NASA Tech Officer*	*CASE Category*
O'connell, R. W.	GSFC/Wilson, L.	11-Astronomy

NAS 5-24218 **University of Virginia** **3845**
Research study on mixer diodes for submillimeter applications

Period	Obligations	
06/23/77-10/31/79	FY79: $35,000	TOTAL: $64,548
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mattauch, R. J.	GSFC/Lamb, G. M. GSFC/Buhl, D.	49-Engr, NEC

NAS 5-25634 **University of Virginia** **3846**
Study of the trellis phase codes for improved power/bandwidth efficiency in satellite communications

Period	Obligations	
04/11/79-04/10/81	FY79: $85,000	TOTAL: $85,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wilson, S. G.	GSFC/Kahle, D. R.	45-Elec Engr

NAS 8-31951 **University of Virginia** **3847**
Space shuttle main engine whirl problem

Period	Obligations	
04/19/76-11/15/79	FY79: $59,916	TOTAL: $271,245
Prin Invest	*NASA Tech Officer*	*CASE Category*
Gunter, E. J.	MSFC/Winter, S. W. MSFC/Goetz, O. K.	46-Mech Engr

NAS 8-33327 **University of Virginia** **3848**
X-ray observations of selected areas
Period 03/26/79-06/25/80 *Obligations* FY79: $4,915 TOTAL: $4,915
Prin Invest Thuan, T. X. Owen, F. M.
NASA Tech Officer MSFC/Jones, J. B., Jr.
CASE Category 11-Astronomy

NAS 8-33348 **University of Virginia** **3849**
X-ray observations of M51 and M58: The dynamics of spiral galaxies
Period 04/16/79-07/15/80 *Obligations* FY79: $2,000 TOTAL: $2,000
Prin Invest Sarazin, C. L. Roberts, W. W., Jr.
NASA Tech Officer MSFC/Jones, J. B., Jr.
CASE Category 11-Astronomy

NGL 47-005-066 **University of Virginia** **3850**
Studies in astronomy and related scientific and engineering fields
Period 10/10/66-09/14/77 *Obligations* FY79: TOTAL: $199,164
Prin Invest Frederick, L. W.
NASA Tech Officer HQ-SC/Roman, N. G. HQ-SC/Boggess, N. W.
CASE Category 11-Astronomy

NGR 47-005-172 **University of Virginia** **3851**
Interpretation of surface features and surface processes on Mars
Period 03/03/71-03/30/79 *Obligations* FY79: TOTAL: $244,693
Prin Invest Howard, A.
NASA Tech Officer HQ-SL/Dwornik, S. E.
HQ-SL/Boyce, J. M.
CASE Category 32-Geological Sci

NSG 1010 **University of Virginia** **3852**
Superconducting magnetic suspension and balance experiment
Period 03/01/74-06/30/78 *Obligations* FY79: TOTAL: $274,491
Prin Invest Zapata, R. N. Humphris, R. R.
NASA Tech Officer LARC/Kilgore, R. A.
CASE Category 41-Aero Engr

NSG 1335 **University of Virginia** **3853**
Investigation of numerical methods for use in real-time simulation
Period 10/01/76-09/30/79 *Obligations* FY79: TOTAL: $58,085
Prin Invest Brown, R. L., Jr.
NASA Tech Officer LARC/Bowles, R. L.
CASE Category 21-Mathematics

NSG 1399 **University of Virginia** **3854**
A study of the instrument flight rules helicopter system
Period 03/01/77-09/30/78 *Obligations* FY79: TOTAL: $43,495
Prin Invest Jacobson, I. D.
NASA Tech Officer LARC/Tapscott, R. J. LARC/Garren, J. F., Jr.
CASE Category 49-Engr, NEC

NSG 1427 **University of Virginia** **3855**
Studies of the interplanetary particulate environment
Period 07/01/77-09/30/79 *Obligations* FY79: TOTAL: $37,400
Prin Invest Singer, S. F. Stanley, J. E.
NASA Tech Officer LARC/Humes, D. H.
CASE Category 11-Astronomy

NSG 1458 **University of Virginia** **3856**
Definition of subsets for restricted computer architectures (HAL/S)
Period 10/01/77-12/31/79 *Obligations* FY79: TOTAL: $50,408
Prin Invest Pratt, T. W.
NASA Tech Officer LARC/Will, R. W.
LARC/Foudriat, E. C.
CASE Category 22-Computer Science

NSG 1509 **University of Virginia** **3857**
Evaluating and minimizing noise impact due to aircraft flyover
Period 04/01/78-03/31/80 *Obligations* FY79: $44,889 TOTAL: $104,109
Prin Invest Jacobson, I. D. Cook, G.
NASA Tech Officer LARC/DeLoach, R
CASE Category 69-Psych, NEC

NSG 1567 **University of Virginia** **3858**
Investigation of direct integrated optics modulators
Period 11/01/78-10/31/79 *Obligations* FY79: $36,993 TOTAL: $36,993
Prin Invest Batchman, T. E.
NASA Tech Officer LARC/Beatty, M. E.
LARC/Breckenridge, R. A.
CASE Category 13-Physics

NSG 1599 **University of Virginia** **3859**
Polymorphic reconfigurable emulator for parallel simulation
Period 03/01/79-03/31/80 *Obligations* FY79: $68,176 TOTAL: $68,176
Prin Invest Parrish, E. A. McVey, E. S. Cook, G.
NASA Tech Officer LARC/Ashworth, B. R
LARC/Bowles, R. L.
CASE Category 45-Elec Engr

NSG 1652 **University of Virginia** **3860**
The terrestrial growth of lead-tin-telluride by techniques related to low-gravity growth
Period 09/01/79-08/31/80 *Obligations* FY79: $26,256 TOTAL: $26,256
Prin Invest Jesser, W. A.
NASA Tech Officer LARC/Fripp, A. L.
LARC/Crouch, R. K
CASE Category 47-Materials Engr

NSG 2225 **University of Virginia** **3861**
Mammalian body size, composition and growth as influenced by hypokinesia
Period 04/01/77-03/31/80 *Obligations* FY79: $25,000 TOTAL: $75,000
Prin Invest Pitts, G. C.
NASA Tech Officer ARC/Holton, E. M.
CASE Category 51-Biological Sci

NSG 3177 **University of Virginia** **3862**
Investigation of rotor transient analysis by the model method
Period *Obligations*
12/15/77-12/14/79 FY79: $36,095 TOTAL: $70,960
Prin Invest *NASA Tech Officer* *CASE Category*
Barrett, L. E. LERC/Kascak, A. F 46-Mech Engr
Gunter, E. J. LERC/Fleming, D. P.
Allaire, P. E.

NSG 3242 **University of Virginia** **3863**
Investigation of the formation of diffusion barrier materials on silicon carbide filaments and their incorporation into metal matrix composites
Period *Obligations*
01/03/79-01/02/80 FY79: $39,606 TOTAL: $39,606
Prin Invest *NASA Tech Officer* *CASE Category*
Wawner, F. E., Jr. LERC/Behrendt, D. R.
LERC/Grimes, H. H. 47-Materials Engr

NSG 7266 **University of Virginia** **3864**
Demand modeling and its effect on the design and operation of transport aircraft
Period *Obligations*
10/01/76-05/31/78 FY79: TOTAL: $60,000
Prin Invest *NASA Tech Officer* *CASE Category*
Kuhlthau, A. R. HQ-RX/Rollins, R. H. 72-Economics
Jacobson, I. D. LARC/Conner, D. W.

NSG 7364 **University of Virginia** **3865**
Observations of the satellites of the outer planets
Period *Obligations*
07/01/78-06/30/80 FY79: $20,803 TOTAL: $60,854
Prin Invest *NASA Tech Officer* *CASE Category*
Ianna, P. A. HQ-SL/Brunk, W. E. 11-Astronomy
HQ-SL/Murphy, R. E.

NSG 7572 **University of Virginia** **3866**
Study of layered deposits and paleoclimates on Mars
Period *Obligations*
04/01/79-03/31/80 FY79: $16,679 TOTAL: $16,679
Prin Invest *NASA Tech Officer* *CASE Category*
Howard, A. HQ-SL/Dwornik, S. E. 32-Geological Sci
HQ-SL/Boyce, J. M.

NSG 9063 **Virginia Commonwealth University** **3867**
Carotid arterial baroreflex mechanisms
Period *Obligations*
10/01/77-12/31/79 FY79: $48,724 TOTAL: $79,102
Prin Invest *NASA Tech Officer* *CASE Category*
Eckberg, D. L. JSC/Hull, W. E. 56-Medical Sciences

NSG 7355 **Virginia Military Institute** **3868**
Oxidation-reduction processes in synthetic silicate melts
Period *Obligations*
06/01/77-12/31/79 FY79: $20,375 TOTAL: $55,282
Prin Invest *NASA Tech Officer* *CASE Category*
Gates, W. L. HQ-SL/Quaide, W. L. 32-Geological Sci
HQ-SL/French, B. M.

DEN 3 65 **Va Polytechnic Inst & St Univ** **3869**
Electronically computed dc motor for electric passenger vehicles
Period *Obligations*
09/13/78-09/27/80 FY79: $48,071 TOTAL: $159,776
Prin Invest *NASA Tech Officer* *CASE Category*
Demerdash, N. A. LERC/Maslowski, E. A. 45-Elec Engr
Lee, F. C.

NAS 1-15080 **Va Polytechnic Inst & St Univ** **3870**
Research in the area of physical sciences
Period *Obligations*
08/25/77-08/24/80 FY79: $104,968 TOTAL: $176,415
Prin Invest *NASA Tech Officer* *CASE Category*
Unavailable LARC/Anderson, A. F. 99-Multi-Discip
LARC/Royall, J. F.

NAS 5-22577 **Va Polytechnic Inst & St Univ** **3871**
Communications link characterization study
Period *Obligations*
09/08/76-03/08/80 FY79: $51,883 TOTAL: $511,872
Prin Invest *NASA Tech Officer* *CASE Category*
Bostian, C. W. GSFC/Hirschmann, E. 45-Elec Engr
Stutzman, W. L.
Wiley, P. H.

NAS 5-25839 **Va Polytechnic Inst & St Univ** **3872**
Development of micro and macro texture measures for LANDSAT scenes
Period *Obligations*
09/07/79-06/06/80 FY79: $40,184 TOTAL: $40,184
Prin Invest *NASA Tech Officer* *CASE Category*
Havalick, R. M. GSFC/Argeniero, P. D. 31-Atmos Sci

NAS 6-2388 **Va Polytechnic Inst & St Univ** **3873**
Remote sensing in agriculture
Period *Obligations*
11/01/73-02/28/79 FY79: $29,899 TOTAL: $449,578
Prin Invest *NASA Tech Officer* *CASE Category*
Powell, N. L. WFC/Scott, J. H., Jr 39-Env Sci, NEC

NAS 8-33359 **Va Polytechnic Inst & St Univ** **3874**
Magnetic fields in cluster of galaxies
Period *Obligations*
05/25/79-05/24/80 FY79: $6,988 TOTAL: $6,988
Prin Invest *NASA Tech Officer* *CASE Category*
Dennison, B. K MSFC/Jones, J. B., Jr. 11-Astronomy

NAS 8-33449 **Va Polytechnic Inst & St Univ** **3875**
Research study: Strength and constitutive behavior of soils in a very low gravitational field

Period	Obligations	
07/16/79-03/19/80	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Storre, S.	MSFC/Costes, N. C.	32-Geological Sci

NAS 9-15287 **Va Polytechnic Inst & St Univ** **3876**
Development of a stereofluoroscopy system

Period	Obligations	
06/01/77-07/01/79	FY79:	TOTAL: $35,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Rivers, D. B.	JSC/Day, J. L.	56-Medical Sciences

NCC 1 4 **Va Polytechnic Inst & St Univ** **3877**
Dynamics and control of large flexible spacecraft

Period	Obligations	
05/01/79-04/30/80	FY79: $49,992	TOTAL: $49,992
Prin Invest	*NASA Tech Officer*	*CASE Category*
Meirovitch, L.	LARC/Montgomery, R. C.	42-Astro Engr

NCC 1 10 **Va Polytechnic Inst & St Univ** **3878**
Environmental effects on advanced composites

Period	Obligations	
08/01/79-11/30/80	FY79: $89,417	TOTAL: $89,417
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unnam, J.	LARC/Tenney, D. R.	39-Env Sci, NEC
Houska, C. R.	LARC/Brewer, W. D.	

NCC 1 15 **Va Polytechnic Inst & St Univ** **3879**
Composite materials research and education

Period	Obligations	
09/01/79-08/31/80	FY79: $164,184	TOTAL: $164,184
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herakovich, C. T.	LARC/Davis, J. G, Jr.	49-Engr, NEC
	LARC/Dexter, H. B.	

NCC 1 20 **Va Polytechnic Inst & St Univ** **3880**
Graduate study research program in aeronautics and air transportation systems

Period	Obligations	
07/01/79-06/30/80	FY79: $79,991	TOTAL: $79,991
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hoberka, A. G.	LARC/Erickson, W. D.	41-Aero Engr

NGL 47-004-067 **Va Polytechnic Inst & St Univ** **3881**
Measurement of the ground wind structure

Period	Obligations	
06/15/70-09/30/79	FY79: $35,115	TOTAL: $568,375
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tieleman, H. W.	WFC/Schmidlin, F. J.	31-Atmos Sci
	WFC/McGoogan, J. T.	

NGL 47-004-080 **Va Polytechnic Inst & St Univ** **3882**
Synthesis, energetics, and chemical characterization of unusual molecules of interest in astronomy at temperatures below 100 k

Period	Obligations	
04/19/71-06/30/78	FY79:	TOTAL: $61,960
Prin Invest	*NASA Tech Officer*	*CASE Category*
McGee, H. A.	HQ-SL/Brunk, W. E.	11-Astronomy

NGR 47-004-129 **Va Polytechnic Inst & St Univ** **3883**
Composite materials research and education

Period	Obligations	
01/01/74-12/31/79	FY79:	TOTAL: $530,515
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herakovich, C. T.	LARC/Davis, J. G., Jr.	49-Engr, NEC
	LARC/Pride, R. A.	

NSG 1020 **Va Polytechnic Inst & St Univ** **3884**
Determining ion kinetic energies by a method of mass spectrometer peak-shape variation

Period	Obligations	
07/01/74-09/30/79	FY79:	TOTAL: $27,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Sanzone, G.	LARC/Smith, A.	13-Physics

NSG 1064 **Va Polytechnic Inst & St Univ** **3885**
Synthesis and polymerication of aromatic secondary diamines

Period	Obligations	
06/01/74-10/31/77	FY79:	TOTAL: $43,173
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wolfe, J. F.	LARC/Johnston, N. J.	12-Chemistry
	LARC/Bell, V. L.	

NSG 1085 **Va Polytechnic Inst & St Univ** **3886**
Kinetics of the reactions of acid anhydrides with aromatic amines in aprotic solvents

Period	Obligations	
07/01/74-04/30/80	FY79:	TOTAL: $93,519
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mason, J. G.	LARC/Young, P. R.	12-Chemistry

NSG 1124 **Va Polytechnic Inst & St Univ** **3887**
A fundamental approach to adhesion: Synthesis surface analysis, thermodynamics and mechanics

Period	Obligations	
12/01/74-11/30/79	FY79: $69,901	TOTAL: $342,794
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wightman, J. P.	LARC/Progar, D. J.	12-Chemistry
	LARC/Nelson, J. B.	

NSG 1250 **Va Polytechnic Inst & St Univ** **3888**
High temperature composite materials for aerospace structures research

Period	Obligations	
10/01/75-01/31/80	FY79:	TOTAL: $65,562
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herakovich, C. T.	LARC/Hoffman, E. L.	49-Engr, NEC
Hodges, W. T.	LARC/Davis, J. G., Jr.	

NSG 1254 **Va Polytechnic Inst & St Univ** **3889**
Short beam shear tests of polymeric laminates and unidirectional composites

Period	Obligations	
10/01/75-09/30/79	FY79: $20,000	TOTAL: $79,994
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stinchcomb, W. W.	LARC/Hoffman, E. L.	46-Mech Engr
Henneke, E. G.	LARC/Deaton, J. W.	

NSG 1255 **Va Polytechnic Inst & St Univ** **3890**
Application of stability theory to laminar flow control

Period	Obligations	
10/01/75-10/31/79	FY79: $52,400	TOTAL: $232,400
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Srokowski, A. J.	41-Aero Engr
Saric, W. S.	LARC/Hefner, J. N.	

NSG 1262 **Va Polytechnic Inst & St Univ** **3891**
Steady vortex lattice technique development

Period	Obligations	
12/01/75-12/31/79	FY79: $15,000	TOTAL: $70,141
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mook, D. T.	LARC/Yates, E. C., Jr.	41-Aero Engr
Nayfeh, A. H.		

NSG 1354 **Va Polytechnic Inst & St Univ** **3892**
Study of an automatic trajectory following control system

Period	Obligations	
10/15/76-11/14/79	FY79: $34,966	TOTAL: $98,688
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanLandingham, H. F.	LARC/Creedon, J. F.	41-Aero Engr
Moose, R. L.	LARC/Hueschen, R. M.	

NSG 1382 **Va Polytechnic Inst & St Univ** **3893**
Fault-free analysis of tensile failure of fiberous composites

Period	Obligations	
02/01/77-06/30/79	FY79:	TOTAL: $23,296
Prin Invest	*NASA Tech Officer*	*CASE Category*
Louthan, M. R., Jr.	LARC/Tenney, D. R.	47-Materials Engr
	LARC/Brewer, W. D.	

NSG 1428 **Va Polytechnic Inst & St Univ** **3894**
The incorporation of metal ions polyimides

Period	Obligations	
07/01/77-01/31/80	FY79: $62,384	TOTAL: $109,751
Prin Invest	*NASA Tech Officer*	*CASE Category*
Taylor, L. T.	LARC/StClair, A. K.	12-Chemistry
	LARC/Slemp, W. S.	

NSG 1470 **Va Polytechnic Inst & St Univ** **3895**
Control of interface reactions in composites

Period	Obligations	
11/07/77-11/06/79	FY79: $28,399	TOTAL: $55,384
Prin Invest	*NASA Tech Officer*	*CASE Category*
Houska, C. R.	LARC/Tenney, D. R.	47-Materials Engr
	LARC/Brewer, W. D.	

NSG 1520 **Va Polytechnic Inst & St Univ** **3896**
Hypersonic viscous flows over three-dimensional bodies at angle of attack

Period	Obligations	
04/01/78-09/30/79	FY79:	TOTAL: $25,004
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lewis, C. H.	LARC/Moss, J. N.	41-Aero Engr

NSG 1524 **Va Polytechnic Inst & St Univ** **3897**
New aromatic polyamides containing n-propargyl groups as potential cross linking functions

Period	Obligations	
06/01/78-05/31/80	FY79: $34,815	TOTAL: $57,287
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wolfe, J. F.	LARC/StClair, T. L.	12-Chemistry
	LARC/StClair, A. K.	

NSG 1526 **Va Polytechnic Inst & St Univ** **3898**
Active damping of modal vibrations by force apportioning

Period	Obligations	
06/16/78-12/16/79	FY79:	TOTAL: $28,211
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hallauer, W. L., Jr.	LARC/Miserentino, R.	46-Mech Engr

NSG 1527 **Va Polytechnic Inst & St Univ** **3899**
Distributed surface control for large space systems

Period	Obligations	
06/01/78-07/31/80	FY79: $99,407	TOTAL: $127,373
Prin Invest	*NASA Tech Officer*	*CASE Category*
VanLandingham, H.F.	LARC/Montgomery, R. C.	45-Elec Engr
Johnson, C. R.		

NSG 1531 **Va Polytechnic Inst & St Univ** **3900**
Environmental effects on advanced composites

Period	Obligations	
08/01/78-07/31/79	FY79: $3,700	TOTAL: $60,870
Prin Invest	*NASA Tech Officer*	*CASE Category*
Unnam, J.	LARC/Tenney, D. R.	47-Materials Engr
Houska, C. R.	LARC/Brewer, W. D.	

NSG 1571 **Va Polytechnic Inst & St Univ** **3901**
Fracture testing of graphite/polyimide

Period	Obligations	
03/27/79-03/26/80	FY79: $25,705	TOTAL: $25,705
Prin Invest	*NASA Tech Officer*	*CASE Category*
Morris, D. H.	LARC/Everett, R. A., Jr.	
	LARC/Crews, J.H., Jr.	47-Materials Engr

NSG 1573 **Va Polytechnic Inst & St Univ** **3902**
Nonlinear wave choke inlets

Period	Obligations	
11/01/78-10/31/79	FY79: $25,000	TOTAL: $25,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nayfeh, A. H.	LARC/Watson, W. R.	45-Elec Engr
	LARC/Lester, H. C.	

NSG 1589 **Va Polytechnic Inst & St Univ** **3903**
Mass transfer effects on turbulent flow along surfaces

Period	Obligations	
06/01/79-05/31/80	FY79: $49,858	TOTAL: $49,858
Prin Invest	**NASA Tech Officer**	**CASE Category**
Schetz, J. A.	LARC/Hefner, J. N.	41-Aero Engr
Inger, G. R.	LARC/Bushnell, D. M.	

NSG 1597 **Va Polytechnic Inst & St Univ** **3904**
Advanced matrix resins for graphite composites

Period	Obligations	
03/01/79-02/29/80	FY79: $33,099	TOTAL: $33,099
Prin Invest	**NASA Tech Officer**	**CASE Category**
McGrath, J. E.	LARC/StClair, A. K.	12-Chemistry
Ward, T. C.	LARC/StClair, T. L.	

NSG 1598 **Va Polytechnic Inst & St Univ** **3905**
Selected parameters to minimize community annoyance from airport noise

Period	Obligations	
04/01/79-03/31/80	FY79: $30,588	TOTAL: $30,588
Prin Invest	**NASA Tech Officer**	**CASE Category**
Frair, L.	LARC/DeLoach, R.	99-Multi-Discip
	LARC/Stephens, D. G.	

NSG 1608 **Va Polytechnic Inst & St Univ** **3906**
Experiments to verify non-parallel stability theory

Period	Obligations	
04/01/79-12/31/79	FY79: $62,600	TOTAL: $62,600
Prin Invest	**NASA Tech Officer**	**CASE Category**
Saric, W. S.	LARC/Hefner, J. N.	41-Aero Engr
	LARC/Bushnell, D. M.	

NSG 1621 **Va Polytechnic Inst & St Univ** **3907**
Use of two-dimensional transmission photoelastic models to study the stresses in double lap bolted joints

Period	Obligations	
09/01/79-08/31/80	FY79: $27,802	TOTAL: $27,802
Prin Invest	**NASA Tech Officer**	**CASE Category**
Hyer, M. W.	LARC/Baker, D. J.	47-Materials Engr
	LARC/Dexter, H. B.	

NSG 1627 **Va Polytechnic Inst & St Univ** **3908**
Order reduction of structural dynamic eigenvalue problems

Period	Obligations	
06/15/79-12/14/79	FY79: $19,700	TOTAL: $19,700
Prin Invest	**NASA Tech Officer**	**CASE Category**
Anderson, L. R.	LARC/Sobieski, J.	49-Engr, NEC
Hallauer, W. L., Jr.	LARC/Giles, G. L.	

NSG 2038 **Va Polytechnic Inst & St Univ** **3909**
Fundamental investigation of failure of fiber composites

Period	Obligations	
10/01/74-09/30/80	FY79: $57,394	TOTAL: $460,274
Prin Invest	**NASA Tech Officer**	**CASE Category**
Brinson, H. F.	ARC/Nelson, H. G.	47-Materials Engr

NSG 2301 **Va Polytechnic Inst & St Univ** **3910**
Near-wall similarity in three-dimensional turbulent flows

Period	Obligations	
04/01/78-03/31/80	FY79: $54,995	TOTAL: $107,463
Prin Invest	**NASA Tech Officer**	**CASE Category**
Pierce, F. J.	ARC/Marvin, J. G.	41-Aero Engr
	ARC/Cleary, J. W.	

NSG 3073 **Va Polytechnic Inst & St Univ** **3911**
Studies of internal flowfields of high throat-Mach-number quiet engine inlets

Period	Obligations	
10/01/75-02/15/80	FY79:	TOTAL: $63,122
Prin Invest	**NASA Tech Officer**	**CASE Category**
Jakubowski, A. K.	LERC/Jones, A. L.	41-Aero Engr
Scher, J. A.		

NSG 3204 **Va Polytechnic Inst & St Univ** **3912**
Ion beam surface modification: Surface analysis and adhesion

Period	Obligations	
06/07/78-06/07/80	FY79: $9,996	TOTAL: $19,871
Prin Invest	**NASA Tech Officer**	**CASE Category**
Dwight, D. W.	LERC/Sovey, J. S.	47-Materials Engr
	LERC/Banks, B. A.	

NSG 3239 **Va Polytechnic Inst & St Univ** **3913**
Investigation of coupled torsional-axial-lateral coupled response of geared systems

Period	Obligations	
01/02/79-01/02/80	FY79: $47,451	TOTAL: $47,451
Prin Invest	**NASA Tech Officer**	**CASE Category**
Mitchell, L. D.	LERC/Ludwig, L. P.	41-Aero Engr

NSG 3274 **Va Polytechnic Inst & St Univ** **3914**
An improved model for switching converter power stages

Period	Obligations	
06/01/79-11/30/80	FY79: $30,000	TOTAL: $30,000
Prin Invest	**NASA Tech Officer**	**CASE Category**
Lee, F. C.	LERC/Kolecki, J. C.	45-Elec Engr

NSG 3275 **Va Polytechnic Inst & St Univ** **3915**
An adaptive controller for an aircraft gas turbine propulsion system

Period	Obligations	
05/01/79-03/31/81	FY79: $40,713	TOTAL: $40,713
Prin Invest	**NASA Tech Officer**	**CASE Category**
Leonard, R. G.	LERC/Lehtinen, B.	41-Aero Engr

NSG 5221 **Va Polytechnic Inst & St Univ** **3916**
High brightness quasars SAS-3

Period	Obligations	
02/01/78-01/31/79	FY79:	TOTAL: $6,423
Prin Invest	**NASA Tech Officer**	**CASE Category**
Dennison, B. K.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

VIRGINIA (Continued)

NSG 6029 **Va Polytechnic Inst & St Univ** **3917**
Demonstration of a peanut leafspot advisory system based on agro environmental monitoring system data

Period	*Obligations*	
04/01/79-09/30/79	FY79: $25,100	TOTAL: $25,100
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Powell, N. L.	WFC/Parker, L. C.	19-Phys Sci, NEC
Phipps, P. M.	WFC/Scott, J. H., Jr.	

NSG 6030 **Va Polytechnic Inst & St Univ** **3918**
Agro-environmental monitoring and management model development and implementation program

Period	*Obligations*	
04/01/79-09/30/79	FY79: $49,800	TOTAL: $49,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Powell, N. L.	WFC/Parker, L. C.	19-Phys Sci, NEC
	WFC/Scott, J. H., Jr.	

NSG 6031 **Va Polytechnic Inst & St Univ** **3919**
Development of water management systems for crop production utilizing soil, crop and agro environmental monitoring systems data

Period	*Obligations*	
04/01/79-09/30/79	FY79: $25,500	TOTAL: $25,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Powell, N. L.	WFC/Parker, L. C.	19-Phys Sci, NEC
	WFC/Scott, J. H., Jr.	

NGL 47-014-009 **Virginia State University** **3920**
Numerical treatment of sound propagation through a duct

Period	*Obligations*	
06/29/73-08/31/79	FY79:	TOTAL: $79,442
Prin Invest	*NASA Tech Officer*	*CASE Category*
Agrawal, K. M.	LARC/Lansing, D. L.	41-Aero Engr

NSG 1342 **Virginia State University** **3921**
Material science and solid state physics studies with positive muon spin precession

Period	*Obligations*	
01/01/77-09/30/80	FY79: $16,392	TOTAL: $49,913
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stronach, C. E.	LARC/Singh, J. J.	13-Physics

NSG 1646 **Virginia State University** **3922**
Medium-energy nuclear physics studies

Period	*Obligations*	
10/01/79-09/30/80	FY79: $26,618	TOTAL: $26,618
Prin Invest	*NASA Tech Officer*	*CASE Category*
Stronach, C. E.	LARC/Wilson, J. W.	13-Physics

WASHINGTON

NAS 1-9694 **University of Washington** **3923**
Participation in the science planning for the Viking 1975 missions in the area of meteorology

Period	*Obligations*	
04/27/70-09/30/78	FY79:	TOTAL: $563,240
Prin Invest	*NASA Tech Officer*	*CASE Category*
Leovy, C. B.	LARC/Williams, T. S., Jr.	31-Atmos Sci
	LARC/Glenny, W. R.	

NAS 1-14341 **University of Washington** **3924**
Science support for the limb infrared monitor of the stratosphere experiment

Period	*Obligations*	
04/12/76-10/31/80	FY79: $59,352	TOTAL: $104,352
Prin Invest	*NASA Tech Officer*	*CASE Category*
Leovy, C. B.	LARC/Russell, J. M., III	31-Atmos Sci
	LARC/James, R. L., Jr.	

NAS 6-2996 **University of Washington** **3925**
Air/sea interaction studies for satellite measurements

Period	*Obligations*	
05/01/79-04/30/80	FY79: $91,300	TOTAL: $91,300
Prin Invest	*NASA Tech Officer*	*CASE Category*
Katsaros, K. B.	WFC/Huang, N. E.	33-Oceanography
Brown, R. A.	WFC/Long, S. R.	
Businger, J. A.		

NAS 8-33148 **University of Washington** **3926**
Atmospheric cloud physics laboratory gas scavenging experiment

Period	*Obligations*	
07/07/78-01/16/80	FY79: $32,456	TOTAL: $47,103
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hobbs, P. V.	MSFC/Fallon, R. A.	31-Atmos Sci
	MSFC/Smith, R. E	

NAS 8-33337 **University of Washington** **3927**
X-ray and optical study of the high polarization of variable AN UMA

Period	*Obligations*	
02/23/79-02/22/80	FY79: $10,925	TOTAL: $10,925
Prin Invest	*NASA Tech Officer*	*CASE Category*
Szkody, P.	MSFC/Jones, J. B., Jr.	11-Astronomy
Wallerstein, G.		
Crosa, L.		

NAS 8-33344 **University of Washington** **3928**
Coordinated X-ray infrared observations of rich clusters of galaxies

Period	*Obligations*	
02/27/79-12/26/79	FY79: $2,436	TOTAL: $2,436
Prin Invest	*NASA Tech Officer*	*CASE Category*
Boynton, P. E.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 8-33360 **University of Washington** **3929**
Analysis and interpretation of X-ray timing observations

Period	Obligations	
06/12/79-06/11/80	FY79: $24,571	TOTAL: $24,571
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Boynton, P. E. Lamb, F. K.	MSFC/Jones, J. B., Jr.	11-Astronomy

NGL 48-002-004 **University of Washington** **3930**
Multidisciplinary research in materials sciences with emphasis on investigation of inorganic nonmetallic ceramic materials

Period	Obligations	
06/28/73-05/31/81	FY79:	TOTAL: $4,369,171
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mueller, J. I.	HQ-RW/Gangler, J. J. HQ-RW/Deutsch, G. C.	47-Materials Engr

NGL 48-002-044 **University of Washington** **3931**
Generation of coherent radiation and the use of intense coherent radiation for generation of plasmas

Period	Obligations	
05/19/67-11/14/79	FY79: $136,000	TOTAL: $1,092,900
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hertzberg, A.	HQ-RT/Schwenk, F. C. ARC/Billman, K. W.	13-Physics

NGL 48-002-047 **University of Washington** **3932**
Interaction shock wave and turbulent boundary layer

Period	Obligations	
09/16/67-09/30/81	FY79: $23,000	TOTAL: $442,659
Prin Invest	*NASA Tech Officer*	*CASE Category*
Childs, M. E.	ARC/Chapman, G. T. ARC/Presley, L. L.	41-Aero Engr

NGR 48-002-141 **University of Washington** **3933**
Research program in aeronautics & air transportation

Period	Obligations	
05/10/72-10/31/79	FY79:	TOTAL: $273,485
Prin Invest	*NASA Tech Officer*	*CASE Category*
Childs, M. E. Gessner, F. B.	ARC/Lee, G. ARC/Watson, E. C.	41-Aero Engr

NGR 48-002-142 **University of Washington** **3934**
Analysis of continuum channel light curves

Period	Obligations	
10/03/72-06/30/79	FY79:	TOTAL: $107,031
Prin Invest	*NASA Tech Officer*	*CASE Category*
Greene, T. F.	HQ-SL/Brunk, W. E.	11-Astronomy

NSG 2176 **University of Washington** **3935**
Wind shear detection by total energy method for use in landing of aircraft

Period	Obligations	
10/01/76-12/31/79	FY79: $10,000	TOTAL: $100,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Joppa, R. G.	ARC/Creer, B. Y.	41-Aero Engr

NSG 2228 **University of Washington** **3936**
Stratospheric planetary waves

Period	Obligations	
08/01/77-07/31/80	FY79: $109,634	TOTAL: $295,106
Prin Invest	*NASA Tech Officer*	*CASE Category*
Holton, J. R. Leovy, C. B.	ARC/Young, R. E.	31-Atmos Sci

NSG 2260 **University of Washington** **3937**
Study of a minimum interference wind tunnel for high lift wings in three dimensions

Period	Obligations	
10/01/77-12/31/79	FY79:	TOTAL: $73,953
Prin Invest	*NASA Tech Officer*	*CASE Category*
Joppa, R. G.	ARC/Corsiglia, V. R.	41-Aero Engr

NSG 2362 **University of Washington** **3938**
Direct measurement of extinction by stratospheric aerosols

Period	Obligations	
01/01/79-12/31/79	FY79: $35,167	TOTAL: $35,167
Prin Invest	*NASA Tech Officer*	*CASE Category*
Charlson, R. J. Waggoner, A. P.	ARC/Pollack, J. B.	31-Atmos Sci

NSG 2365 **University of Washington** **3939**
Configuration interaction

Period	Obligations	
07/01/79-06/30/80	FY79: $21,000	TOTAL: $21,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Davidson, E. R.	ARC/Langhoff, S. R.	12-Chemistry

NSG 2385 **University of Washington** **3940**
Telemetry of in vivo bone strain information

Period	Obligations	
06/01/79-05/31/80	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Carter, D. R.	ARC/Holton, E. M.	59-Life Sci, NEC

NSG 3152 **University of Washington** **3941**
A design manual for stirling engines

Period	Obligations	
06/01/77-01/31/78	FY79:	TOTAL: $44,925
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martini, W. R.	LERC/Valentine, H. H.	46-Mech Engr

NSG 3194 **University of Washington** **3942**
Stirling engine design manual

Period	Obligations	
05/01/78-10/31/79	FY79: $35,419	TOTAL: $51,858
Prin Invest	*NASA Tech Officer*	*CASE Category*
Martini, W. R.	LERC/Valentine, H. H. LERC/Tew, R. C.	46-Mech Engr

NSG 3261 **University of Washington** **3943**
Design methods for shock-free cascades with future application to turbomachinery components

Period	*Obligations*	
03/15/79-03/14/80	FY79: $28,693	TOTAL: $28,693
Prin Invest.	*NASA Tech Officer*	*CASE Category*
Seebass, A. R.	LERC/Braun, W. H.	41-Aero Engr

NSG 5142 **University of Washington** **3944**
The kinematics and ionization of the Gum Nebula

Period	*Obligations*	
12/01/76-11/30/77	FY79:	TOTAL: $1,310
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wallerstein, G.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5240 **University of Washington** **3945**
Line identification in A stars: Termination of hydrogen convection

Period	*Obligations*	
03/01/78-10/31/79	FY79: $467	TOTAL: $19,467
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bohm-Vitense, E.	GSFC/Boggess, A. GSFC/West, D. K.	11-Astronomy

NSG 5283 **University of Washington** **3946**
Field-aligned particle fluxes and parallel electric potential

Period	*Obligations*	
07/01/78-07/31/79	FY79:	TOTAL: $21,732
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, C. S.	GSFC/Spencer, N. W.	31-Atmos Sci

NSG 5374 **University of Washington** **3947**
Kinematics and physical conditions in shocked clouds in Supernova remnants

Period	*Obligations*	
06/01/79-05/31/80	FY79: $17,182	TOTAL: $17,182
Prin Invest	*NASA Tech Officer*	*CASE Category*
Wallerstein, G. Silk, J. Jenkins, E. B.	GSFC/Boggess, A.	11-Astronomy

NSG 5395 **University of Washington** **3948**
Ultraviolet observations of selected cataclysmic variables

Period	*Obligations*	
07/01/79-06/30/80	FY79: $9,604	TOTAL: $9,604
Prin Invest	*NASA Tech Officer*	*CASE Category*
Szkody, P.	GSFC/Boggess, A.	11-Astronomy

NSG 5398 **University of Washington** **3949**
Observations of classical stellar chromospheres

Period	*Obligations*	
07/15/79-01/14/80	FY79: $9,000	TOTAL: $9,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bohm-Vitense, E.	GSFC/Boggess, A.	11-Astronomy

NSG 5410 **University of Washington** **3950**
Studies of discrete electromagnetic emissions in the magnetosphere

Period	*Obligations*	
09/15/79-09/14/80	FY79: $22,418	TOTAL: $22,418
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lin, C. S.	GSFC/Corrigan, J. P.	11-Astronomy

NSG 7085 **University of Washington** **3951**
Dynamics of planetary atmospheres

Period	*Obligations*	
07/01/74-10/01/79	FY79: $43,633	TOTAL: $186,833
Prin Invest	*NASA Tech Officer*	*CASE Category*
Leovy, C. B.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 7173 **University of Washington** **3952**
Application of spectral reflectance of lunar samples to telescopic spectra of unvisited parts of the moon

Period	*Obligations*	
07/01/75-02/28/81	FY79: $33,891	TOTAL: $184,453
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Quaide, W. L. HQ-SL/French, B. M.	32-Geological Sci

NSG 7174 **University of Washington** **3953**
Visible and near-infrared reflectance spectroscopy

Period	*Obligations*	
07/01/75-01/31/79	FY79:	TOTAL: $132,274
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7313 **University of Washington** **3954**
Crystal-liquid distribution coefficients for selected elements

Period	*Obligations*	
03/01/77-02/29/80	FY79: $46,294	TOTAL: $118,108
Prin Invest	*NASA Tech Officer*	*CASE Category*
McCallum, I. S.	HQ-SL/Quaide, W. L. HQ-SL/French, B. E.	32-Geological Sci

NSG 7318 **University of Washington** **3955**
Analysis of data on very high energy galactic electrons

Period	*Obligations*	
12/01/76-11/30/79	FY79: $30,000	TOTAL: $68,061
Prin Invest	*NASA Tech Officer*	*CASE Category*
Lord, J. J.	HQ-SC/Kaluzienski, L. J. HQ-SC/Opp, A. G.	11-Astronomy

NSG 7448 **University of Washington** **3956**
Mars spectral photometry and surface composition

Period	*Obligations*	
02/01/78-01/31/80	FY79: $31,645	TOTAL: $41,326
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, J. B.	HQ-SL/Quaide, W. L. HQ-SL/Dwornik, S. E.	32-Geological Sci

NSG 7611 **University of Washington** **3957**
Investigations of Martian meteorological processes using Viking meteorological data

Period	Obligations	
03/01/79-12/31/79	FY79: $44,000	TOTAL: $44,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Leovy, C. B.	HQ-SL/Murphy, R. E. HQ-SL/Brunk, W. E.	31-Atmos Sci

NSG 9032 **University of Washington** **3958**
Reflectance spectroscopy of lunar samples

Period	Obligations	
07/01/75-01/31/80	FY79: $52,694	TOTAL: $282,005
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Adams, J. B.	JSC/Harris, J. W.	32-Geological Sci

NSG 9052 **University of Washington** **3959**
A study of interplanetary dust

Period	Obligations	
03/01/77-02/29/80	FY79: $83,874	TOTAL: $239,174
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Brownlee, D. E.	JSC/Harris, J. W.	31-Atmos Sci

NAS 5-25063 **Walla Walla College** **3960**
Study of high speed complex number algorithms

Period	Obligations	
06/12/78-08/12/79	FY79:	TOTAL: $11,864
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Heisler, R.	GSFC/Schmidt, R. L. GSFC/Keating, T., Jr.	45-Elec Engr

NCA 2-840801 **Washington State University** **3961**
Chemical reactions on supported metal particles

Period	Obligations	
06/01/78-05/31/80	FY79: $14,075	TOTAL: $27,271
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Dickinson, J. T.	ARC/Poppa, H. R.	13-Physics

NCA 2-840901 **Washington State University** **3962**
Studies and applications of hydrogen mapping on surfaces

Period	Obligations	
03/01/79-02/28/81	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Dickinson, J. T.	ARC/Poppa, H. R.	13-Physics

NSG 5383 **Washington State University** **3963**
Observations of planetary nebula shells and central stars

Period	Obligations	
07/01/79-06/30/80	FY79: $2,550	TOTAL: $2,550
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Lutz, J. H.	GSFC/Boggess, A.	11-Astronomy

NSG 7214 **Washington State University** **3964**
Atmospheric measurements of nitrous oxide and the halocarbons

Period	Obligations	
02/01/76-04/30/80	FY79: $32,000	TOTAL: $232,168
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Cronn, D. Harsch, D. E. Robinson, E.	HQ-EB/Kakar, R. K. HQ-EB/Seals, R. K., Jr.	31-Atmos Sci

WISCONSIN

NAS 8-32901 **Beloit College** **3965**
Scientific investigations in support of the space telescope project

Period	Obligations	
02/22/78-02/22/84	FY79: $33,865	TOTAL: $102,965
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Schroeder, D. J.	MSFC/O'Dell, C. R.	11-Astronomy

NAS 8-33355 **Beloit College** **3966**
Guest investigation of three young Supernova remnants

Period	Obligations	
06/15/79-06/14/80	FY79: $6,922	TOTAL: $6,922
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Winkler, P. F., Jr.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 9-15711 **Marquette University** **3967**
Alterations in skeletal muscle with disuse atrophy

Period	Obligations	
09/21/78-10/01/80	FY79: $35,000	TOTAL: $75,000
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Fitts, R. H.	JSC/Smith, M. C., Jr.	59-Life Sci, NEC

NAS 1-14136 **University of Wisconsin - Madison** **3968**
Laser radar for meteorological measurements

Period	Obligations	
09/11/75-11/30/79	FY79: $34,299	TOTAL: $619,554
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Eloranta, E. Parent, R. J. Roesler, F. L.	LARC/Browell, E. V. LARC/Remsberg, E. E.	31-Atmos Sci

NAS 2-9480 **University of Wisconsin - Madison** **3969**
Pioneer/Venus data analysis of net flux radiometer experiment

Period	Obligations	
09/27/77-03/31/80	FY79: $89,200	TOTAL: $178,865
Prin Invest	*NASA Tech. Officer*	*CASE Category*
Suomi, D. V. Sromousky, L. A.	ARC/Hall, C. F. ARC/Porter, D. L.	31-Atmos Sci

NAS 2-10359 University of Wisconsin - Madison 3970
Dual photon absorptiometry system for ground based measurements of the lumbar spine in man
Period: 09/24/79-09/24/80 Obligations: FY79: $30,047 TOTAL: $30,047
Prin Invest: Mazess, R. B. NASA Tech Officer: ARC/Young, D. R. CASE Category: 56-Medical Sciences

NAS 5-21965 University of Wisconsin - Madison 3971
Development of an IR temperature sounder for SMS spacecraft
Period: 08/01/73-10/15/81 Obligations: FY79: $695,000 TOTAL: $1,719,533
Prin Invest: Suomi, V. E. NASA Tech Officer: GSFC/Montgomery, H. E. CASE Category: 31-Atmos Sci

NAS 5-22349 University of Wisconsin - Madison 3972
High resolution spectroscopy for a one meter class UV-optical telescope for Spacelab astronomy missions
Period: 04/23/75-06/30/80 Obligations: FY79: TOTAL: $16,?47
Prin Invest: Anderson, C. M.; Hendrix, J.; Curtis, C. R. NASA Tech Officer: GSFC/Wainscott, F. H. CASE Category: 11-Astronomy

NAS 5-22410 University of Wisconsin - Madison 3973
Reduction and analysis of data from OSO-1 soft X-ray background experiment
Period: 06/26/75-09/30/80 Obligations: FY79: $141,749 TOTAL: $682,537
Prin Invest: Kraushaar, W. L. NASA Tech Officer: GSFC/Gemmell, J. D. CASE Category: 31-Atmos Sci

NAS 5-23462 University of Wisconsin - Madison 3974
Global atmospheric research project
Period: 06/07/76-05/31/80 Obligations: FY79: $132,920 TOTAL: $335,920
Prin Invest: Suomi, V. E. NASA Tech Officer: GSFC/Greaves, J. R. CASE Category: 31-Atmos Sci

NAS 5-23706 University of Wisconsin - Madison 39[illegible]
Study of the economic benefits of meteorological satellite data
Period: 08/30/76-08/29/80 Obligations: FY79: $50,000 TOTAL: $316,912
Prin Invest: Suomi, V. E.; Suchman, D. NASA Tech Officer: GSFC/Hasler, A. F.; GSFC/Shenk, W. E. CASE Category: 31-Atmos Sci

NAS 5-24230 University of Wisconsin - Madison 3976
Remote monitoring of precipitation by analyzing data from Nimbus scanning microwave radiometers
Period: 07/29/77-01/28/79 Obligations: FY79: TOTAL: $30,000
Prin Invest: Weinman, J. A. NASA Tech Officer: GSFC/Theon, J. S. CASE Category: 31-Atmos Sci

NAS 5-24385 University of Wisconsin - Madison 3977
Operation of a biomedical applications team
Period: 12/19/77-12/31/80 Obligations: FY79: $230,000 TOTAL: $445,000
Prin Invest: Siedbank, M. P.; Huston, N. E. NASA Tech Officer: GSFC/Friedman, D. S. CASE Category: 56-Medical Sciences

NAS 5-24487 University of Wisconsin - Madison 3978
High speed photometer for the space telescope printer
Period: 03/08/78-03/31/84 Obligations: FY79: $766,887 TOTAL: $1,119,151
Prin Invest: Bless, R. C. NASA Tech Officer: GSFC/White, R. A. CASE Category: 11-Astronomy

NAS 5-25148 University of Wisconsin - Madison 3979
Technical support to the first GARP global experiment special effort
Period: 08/18/78-04/17/81 Obligations: FY79: $150,942 TOTAL: $240,942
Prin Invest: Suomi, V. E. NASA Tech Officer: GSFC/Greaves, J. R. CASE Category: 31-Atmos Sci

NAS 5-25377 University of Wisconsin - Madison 3980
A study on the meteorological significance of cloud tracked winds during data systems test 5 and 6
Period: 12/27/78-01/26/80 Obligations: FY79: $28,160 TOTAL: $28,160
Prin Invest: Suomi, V. E. NASA Tech Officer: GSFC/Greaves, J. R.; GSFC/Stetina, F. L. CASE Category: 31-Atmos Sci

NAS 5-25399 University of Wisconsin - Madison 3981
Data systems test evaluation
Period: 12/27/78-01/26/80 Obligations: FY79: $34,637 TOTAL: $34,637
Prin Invest: Johnson, D. R.; Gallimore, R. G. NASA Tech Officer: GSFC/Greaves, J. R.; GSFC/Stetina, F. L. CASE Category: 31-Atmos Sci

NAS 5-25487 University of Wisconsin - Madison 3982
Support to the space telescope wide field planetary camera development team
Period: 02/01/79-10/31/79 Obligations: FY79: $12,536 TOTAL: $12,536
Prin Invest: Code, A. D. NASA Tech Officer: GSFC/Sours, W. T. CASE Category: 11-Astronomy

NAS 5-25505 University of Wisconsin - Madison 3983
Demonstration project to evaluate the opportunities for operational applications of LANDSAT data
Period: 03/23/79-01/22/80 Obligations: FY79: $9,860 TOTAL: $9,860
Prin Invest: Scarpice, F. L. NASA Tech Officer: GSFC/Middleton, E. CASE Category: 39-Env Sci, NEC

NAS 5-25714 **University of Wisconsin - Madison** **3984**
Support of High Resolution Spectrograph (HRS)

Period	Obligations	
05/16/79-03/15/84	FY79: $20,000	TOTAL: $20,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, B. D.	GSFC/Vitagliano, H. D.	11-Astronomy

NAS 8-33222 **University of Wisconsin - Madison** **3985**
Diagnostics of severe conviction and sub synoptic scale ageostrophic circulations

Period	Obligations	
06/01/79-05/31/80	FY79: $78,488	TOTAL: $78,488
Prin Invest	*NASA Tech Officer*	*CASE Category*
Johnson, D. R.	MSFC/Turner, R. E.	31-Atmos Sci
	MSFC/Johnson, R.	

NAS 8-33340 **University of Wisconsin - Madison** **3986**
Search and analysis of the X-ray emission from luminous type stars

Period	Obligations	
02/06/79-02/05/80	FY79: $12,299	TOTAL: $12,299
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cassinelli, J. P.	MSFC/Jones, J. B., Jr.	11-Astronomy

NAS 9-15580 **University of Wisconsin - Madison** **3987**
Vitamin D metabolites and bone demineralization

Period	Obligations	
04/01/78-01/01/80	FY79: $75,000	TOTAL: $115,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schnoes, H. K.	JSC/Cintron, N. M	56-Medical Sciences
Holton, E. M.		
DeLuca, H. F.		

NCA 2-865701 **University of Wisconsin - Madison** **3988**
Influence of hypodynamia on the serum levels and production of the active metabolites of vitamin D in the rat

Period	Obligations	
08/01/76-12/31/79	FY79:	TOTAL: $32,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
DeLuca, H. F.	ARC/Holton, E. M.	51-Biological Sci

NGL 50-002-013 **University of Wisconsin - Madison** **3989**
Investigations and studies of ultraviolet stellar spectra and associated instrumentation

Period	Obligations	
05/20/64-04/30/81	FY79: $62,070	TOTAL: $2,817,490
Prin Invest	*NASA Tech Officer*	*CASE Category*
Code, A. D.	GSFC/Bissell, E. E.	11-Astronomy
	HQ-SC/Roman, N. G.	

NGL 50-002-044 **University of Wisconsin - Madison** **3990**
Research in cosmic and solar physics

Period	Obligations	
10/25/65-12/31/81	FY79: $180,000	TOTAL: $2,352,626
Prin Invest	*NASA Tech Officer*	*CASE Category*
Kraushaar, W. L.	GSFC/Bissell, E. E.	11-Astronomy
	HQ-SC/Opp, A. G.	

NGL 50-002-127 **University of Wisconsin - Madison** **3991**
Multidisciplinary research in space science & engineering

Period	Obligations	
12/19/69-07/31/81	FY79:	TOTAL: $1,737,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Clapp, J. L.	HQ-ET/Vitale, J. A.	39-Env Sci, NEC

NGR 50-002-051 **University of Wisconsin - Madison** **3992**
Applications of the direct photon absorption techniques for measuring bone-mineral content

Period	Obligations	
09/01/66-10/31/79	FY79: $20,028	TOTAL: $631,264
Prin Invest	*NASA Tech Officer*	*CASE Category*
Mazess, R. B.	ARC/Young, D. R.	56-Medical Sciences
Cameron, J. R.		

NGR 50-002-162 **University of Wisconsin - Madison** **3993**
Solar wind physics

Period	Obligations	
01/26/71-12/31/79	FY79:	TOTAL: $377,463
Prin Invest	*NASA Tech Officer*	*CASE Category*
Scherb, F.	HQ-ST/King, J. H.	13-Physics
	HQ-ST/Schmerling, E. R.	

NGR 50-002-189 **University of Wisconsin - Madison** **3994**
Cloud image processing for planetary flybys

Period	Obligations	
01/19/72-03/31/80	FY79: $41,786	TOTAL: $158,083
Prin Invest	*NASA Tech Officer*	*CASE Category*
Suomi, V. E.	HQ-SL/Murphy, R. E.	31-Atmos Sci
	HQ-SL/Brunk, W. E.	

NSG 2104 **University of Wisconsin - Madison** **3995**
Viral etiology and epidemiology of respiratory infraction in an isolated Antarctic station

Period	Obligations	
09/01/75-11/30/79	FY79: $30,000	TOTAL: $150,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Dick, E. C.	ARC/Mandel, A. D.	56-Medical Sciences

NSG 2405 **University of Wisconsin - Madison** **3996**
Definition of plant characteristics for controlled ecology life support system and study of physiological injuries to plants anticipated in controlled ecology life support system

Period	Obligations	
09/01/79-05/31/80	FY79: $39,855	TOTAL: $39,855
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tibbitts, T. W.	ARC/Zill, L. P.	51-Biological Sci

NSG 5100 **University of Wisconsin - Madison** **3997**
Ultraviolet studies with the Princeton telescope aboard the Copernicus satellite

Period	Obligations	
06/01/76-05/31/78	FY79:	TOTAL: $10,578
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, B. D.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5152 **University of Wisconsin - Madison** **3998**
Research of clouds and ice in the planetary scale circulation and in climate

Period	Obligations	
01/01/77-12/31/81	FY79: $55,000	TOTAL: $201,639
Prin Invest	*NASA Tech Officer*	*CASE Category*
Houghton, D. D.	GSFC/Halem, M.	31-Atmos Sci
Suomi, V. E.		

NSG 5180 **University of Wisconsin - Madison** **3999**
Analysis of the ultraviolet line profiles in the Wolf-Rayet star HD 50896

Period	Obligations	
06/20/77-12/31/78	FY79:	TOTAL: $9,993
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cassinelli, J. P.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5181 **University of Wisconsin - Madison** **4000**
A source of interstellar abundances/ultraviolet studies of the interstellar medium, hot stars and cosmic X-ray sources

Period	Obligations	
07/01/77-06/30/79	FY79:	TOTAL: $17,500
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, B. D.	GSFC/Kupperian, J. E., Jr.	11-Astronomy

NSG 5223 **University of Wisconsin - Madison** **4001**
Research of the effect of synoptic scale processes in global circulation models modeling

Period	Obligations	
01/16/78-02/15/80	FY79: $66,170	TOTAL: $90,170
Prin Invest	*NASA Tech Officer*	*CASE Category*
Herman, G. F	GSFC/Halem, M	31-Atmos Sci
Johnson, D. R		

NSG 5241 **University of Wisconsin - Madison** **4002**
Interstellar Lyman alpha observations with the IUE satellite

Period	Obligations	
02/15/78-02/14/80	FY79: $3,861	TOTAL: $23,361
Prin Invest	*NASA Tech Officer*	*CASE Category*
Savage, B. D	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5242 **University of Wisconsin - Madison** **4003**
High resolution spectral observations with the IUE satellite

Period	Obligations	
02/15/78-02/14/80	FY79:	TOTAL: $16,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Doherty, L. R.	GSFC/Boggess, A.	11-Astronomy
	GSFC/West, D. K.	

NSG 5251 **University of Wisconsin - Madison** **4004**
Investigation of computer processing method of multiple geostationary satellite transmissions for cloud height determination

Period	Obligations	
03/01/78-03/31/80	FY79:	TOTAL: $34,864
Prin Invest	*NASA Tech Officer*	*CASE Category*
Suomi, V. E.	GSFC/Minzner, R. A	31-Atmos Sci
Stremler, F. G.	GSFC/Shenk, W. E.	

NSG 5252 **University of Wisconsin - Madison** **4005**
Optimum employment of satellite

Period	Obligations	
03/15/78-02/14/80	FY79:	TOTAL: $61,492
Prin Invest	*NASA Tech Officer*	*CASE Category*
Horn, L. H.	GSFC/Halem, M.	31-Atmos Sci

NSG 5363 **University of Wisconsin - Madison** **4006**
Studies of the ultraviolet spectra of astronomical sources

Period	Obligations	
06/01/79-11/30/79	FY79: $32,229	TOTAL: $32,229
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cassinelli, J. P.	GSFC/Boggess, A.	11-Astronomy
Code, A. D.		
Doherty, L. R.		

NSG 7050 **University of Wisconsin - Madison** **4007**
Data analysis of OAO-2 ultraviolet spectrophotometry

Period	Obligations	
07/01/74-05/31/80	FY79 $22,734	TOTAL: $421,267
Prin Invest	*NASA Tech Officer*	*CASE Category*
Williamson, P. R.	HQ-SC/Weiler, E. J.	11-Astronomy
	HQ-SC/Roman, N. G.	

NSG 7215 **University of Wisconsin - Madison** **4008**
Vacuum ultraviolet photon excitation and electron ejection from surfaces

Period	Obligations	
02/01/76-01/31/80	FY79: $20,000	TOTAL: $132,555
Prin Invest	*NASA Tech Officer*	*CASE Category*
Taylor, J. W.	HQ-SL/Quaide, W. L.	32-Geological Sci
	HQ-SL/French, B. E.	

NSG 7521 **University of Wisconsin - Madison** **4009**
Origin of bacteria

Period	Obligations	
01/01/79-12/31/80	FY79: $41,250	TOTAL: $41,250
Prin Invest	*NASA Tech Officer*	*CASE Category*
Fitch, W. M.	HQ-SB/Young, R. S.	51-Biological Sci

NGR 50-007-001 **University of Wisconsin - Milwaukee** **4010**
Dynamic response and flow visualization analyses for helicopter rotor blades

Period	Obligations	
12/02/70-06/30/79	FY79:	TOTAL: $289,825
Prin Invest	*NASA Tech Officer*	*CASE Category*
Bratanow, T.	LARC/Young, W. H., Jr.	41-Aero Engr

NGR 50-009-001 **University of Wisconsin - Parkside** **4011**
Identification, distribution and significance of forms on Mars

Period	Obligations	
00/00/00-09/30/78	FY79:	TOTAL: $29,581
Prin Invest	*NASA Tech Officer*	*CASE Category*
Smith, E. I.	HQ-SL/Dwornik, S. E.	32-Geological Sci
	HQ-SL/Boyce, J. M.	

WYOMING

NAS 1-13797 **University of Wyoming** **4012**
Stratospheric aerosol measurement instrument

Period	Obligations	
01/29/75-04/28/79	FY79:	TOTAL: $3,140,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pepin, T. J.	LARC/Hedgepeth, K. D.	31-Atmos Sci
	LARC/Mauldin, L. E., III	

NAS 1-14373 **University of Wyoming** **4013**
Science support for the Nimbus G stratospheric aerosol measurement experiment

Period	Obligations		
04/02/76-12/31/79	FY79: $70,000	TOTAL: $211,131	
Prin Invest	*NASA Tech Officer*	*CASE Category*	
Pepin, T. J.	LARC/McCormick, M. P.	31-Atmos Sci	
	LARC/McMaster, L. R.		

NAS 1-14931 **University of Wyoming** **4014**
Stratospheric aerosol and gas experiment

Period	Obligations	
07/19/77-09/30/79	FY79:	TOTAL: $60,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pepin, T. J.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NAS 1-15377 **University of Wyoming** **4015**
Balloon-borne aerosol measurements: Ground truth for SAM II

Period	Obligations	
05/04/78-08/31/79	FY79: $59,800	TOTAL: $79,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hofmann, D. J.	LARC/McMaster, L. R.	31-Atmos Sci
Rosen, J. M.	LARC/McCormick, M. P.	

NAS 8-32067 **University of Wyoming** **4016**
Aerosol and nucleation research in support of NASA cloud physics experiment in space

Period	Obligations	
05/10/76-07/01/78	FY79:	TOTAL: $121,236
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vali, G.	MSFC/Schrick, D. J.	31-Atmos Sci
	MSFC/Smith, R. E.	

NAS 8-32486 **University of Wyoming** **4017**
Space processing applications rocket: Charged water-drop oscillations

Period	Obligations	
04/30/77-03/29/80	FY79:	TOTAL: $25,307
Prin Invest	*NASA Tech Officer*	*CASE Category*
Saunders, C.	MSFC/Reeves, F. A.	47-Materials Engr
	MSFC/Chassay, R. P.	

NAS 8-33150 **University of Wyoming** **4018**
Atmospheric cloud physics laboratory ice forming experiment preliminary definition

Period	Obligations	
08/07/78-01/15/80	FY79: $28,014	TOTAL: $43,212
Prin Invest	*NASA Tech Officer*	*CASE Category*
Vali, G.	MSFC/Fallon, R. A.	31-Atmos Sci
	MSFC/Smith, R. E.	

NSG 1518 **University of Wyoming** **4019**
Preliminary Aerosol Measurement (PAM II) data reduction

Period	Obligations	
04/15/78-04/14/80	FY79: $105,987	TOTAL: $133,825
Prin Invest	*NASA Tech Officer*	*CASE Category*
Pepin, T. J.	LARC/McMaster, L. R.	31-Atmos Sci
	LARC/McCormick, M. P.	

NSG 3217 **University of Wyoming** **4020**
Energy absorption mechanisms during crack propagation in metal matrix composites

Period	Obligations	
08/01/78-07/31/80	FY79: $35,140	TOTAL: $65,254
Prin Invest	*NASA Tech Officer*	*CASE Category*
Adams, D. F.	LERC/DiCarlo, J. A	47-Materials Engr
	LERC/Grimes, H. H	

NSG 7349 **University of Wyoming** **4021**
Measurements of the natural background of condensation nuclei at high altitude for assessment of future space shuttle effluent effect

Period	Obligations	
07/01/77-06/30/80	FY79: $53,000	TOTAL: $153,985
Prin Invest	*NASA Tech Officer*	*CASE Category*
Hofmann, D. J	HQ-EB/Kakar, R. K	31-Atmos Sci
Rosen, J. M.	HQ-EB/Seals, R. K., Jr	

PUERTO RICO

NAS 5-25844 **University of Puerto Rico** **4022**
Computerized safety information system for GSFC's Health and Safety Engineering Office

Period	Obligations	
09/06/79-09/14/80	FY79: $17,318	TOTAL: $17,318
Prin Invest	*NASA Tech Officer*	*CASE Category*
Cabassa, H. D.	GSFC/Lopez, J. J	22-Computer Science

AUSTRALIA

NSG 7272 **University of Sydney** **4023**
Rarefied flow field analysis

Period	Obligations	
07/01/76-06/30/79	FY79:	TOTAL: $10,000
Prin. Invest	*NASA Tech Officer*	*CASE Category*
Bird, G. A.	LARC/Melfi, L. T., Jr.	13-Physics
	LARC/Outlaw, R. A.	

CANADA

NSG 7409 **University of Toronto** **4024**
Application of the cubic strength criterion to the failure analysis of composite structures

Period	Obligations	
03/01/78-02/28/80	FY79:	TOTAL: $22,880
Prin Invest	*NASA Tech Officer*	*CASE Category*
Tennyson, R. C.	LARC/Baker, D. J.	47-Materials Engr
	LARC/Pride, R. A.	

NGR 52-134-005 **York University** **4025**
Studies of production and reaction processes of O (2D2) of interest in the earth's atmosphere

Period	Obligations	
04/26/73-12/31/79	FY79: $39,993	TOTAL: $159,754
Prin Invest	*NASA Tech Officer*	*CASE Category*
Schiff, H. I.	HQ-ST/Newton, G. P.	31-Atmos Sci
Dudley, W. W.	HQ-ST/Tilford, S. G.	
Ridley, B. A.		

NSG 7223 **York University** **4026**
Studies of the spectrum chlorine monoxide in the stratosphere

Period	Obligations	
05/01/76-09/01/79	FY79:	TOTAL: $160,234
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nicholls, R. W.	ARC/Cooper, D. M.	31-Atmos Sci
	ARC/Arnold, J. O.	

CHILE

NAS 5-1925 **University of Chile** **4027**
Maintenance & operation of minitrack facilities

Period	Obligations	
09/21/62-10/31/81	FY79: $3,591,141	TOTAL: $34,487,837
Prin Invest	*NASA Tech Officer*	*CASE Category*
Diaz, E.	GSFC/Force, C. A.	99-Multi-Discip
	GSFC/Spintman, D.	

GREAT BRITAIN

NASW 3258 **Imperial College of Science & Technology** **4028**
Analysis of DOD conducted research and technology programs: Benchmark measurements in three-dimensional subsonic diffusers

Period	Obligations	
04/15/79-04/15/80	FY79: $74,340	TOTAL: $74,340
Prin Invest	*NASA Tech Officer*	*CASE Category*
Whitelow, J.	HQ-RP/Povinelli, F. P.	41-Aero Engr

NSG 7517 **University of Sheffield** **4029**
Vaporization of droplets in premixing chambers

Period	Obligations	
10/01/78-09/30/79	FY79: $50,000	TOTAL: $50,000
Prin Invest	*NASA Tech Officer*	*CASE Category*
Chigier, N. A.	LERC/Lyons, V. J.	43-Chem Engr

NSG 7172 **University of Southhampton** **4030**
Self-streamlining of the test section of a transonic wind tunnel

Period	Obligations	
10/01/75-09/31/79	FY79:	TOTAL: $154,786
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goodyer, M. J.	LARC/Kilgore, R. A.	41-Aero Engr
	LARC/Ladson, C. L.	

NSG 7523 **University of Southhampton** **4031**
Investigations into the technology required to raise reliability levels of magnetic suspension system

Period	Obligations	
01/01/79-12/31/79	FY79. $9,800	TOTAL: $9,800
Prin Invest	*NASA Tech Officer*	*CASE Category*
Goodyer, M. J.	LARC/Boyden R. P.	41-Aero Engr
	LARC/Kilgore, R. A.	

ISRAEL

NSG 7317 **Israel Institute of Technology** **4032**
Study of radial face seal mechanism of operation

Period	Obligations	
04/01/77-03/31/79	FY79 $21,940	TOTAL $42,140
Prin Invest	*NASA Tech Officer*	*CASE Category*
Etsion, I	LERC/Ludwig, L. P.	46-Mech Engr
	LERC/Anderson, W. J.	

NSG 7373 **Israel Institute of Technology** **4033**
Study of active control systems for application to supersonic cruise aircraft

Period	Obligations	
11/01/77-10/30/80	FY79. $16,675	TOTAL $41,707
Prin Invest	*NASA Tech Officer*	*CASE Category*
Nissim, E.	LARC/Abel, I.	41-Aero Engr
	LARC/Doggett, R. V., Jr.	

PERU

NASW-7 **University of Peru** **4034**
Operation of tracking station

Period	*Obligations*	
12/01/68-06/01/79	FY79:	TOTAL: $3,300,512
Prin. Invest.	*NASA Tech. Officer*	*CASE Category*
Unavailable	GSFC/Christie, C. J.	49-Engr, NEC

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APPENDIX A
CROSS INDEX BY AGREEMENT NUMBER

Entries are arranged alphanumerically. Grants are identifiable by prefix letters NAG, NGF, NGL, NGR, NGT and NSG. Cooperative agreements use the prefix NCC. All other prefixes denote contracts.

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DEN 3 73	1975
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NAS 1-9684	2485
NAS 1-9692	1305
NAS 1-9693	1915
NAS 1-9694	3923
NAS 1-9703	1167
NAS 1-9705	2833
NAS 1-9990	3756
NAS 1-10492	2441
NAS 1-10493	3064
NAS 1-11854	1260
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NAS 1-13889	2777
NAS 1-14136	3968
NAS 1-14193	3789
NAS 1-14332	1090
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NAS 1-14351	1976
NAS 1-14373	4013
NAS 1-14393	3346
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NAS 2-10308	3724
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NAS 3-21386	1569
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NAS 5-20721	1171
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NAS 5-23338	3542
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NAS 5-23462	3974
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NAS 5-23494	2445
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NAS 5-23777	2228
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NAS 5-23799	1875
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NAS 5-23801	3486
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NAS 5-24152	2919
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NAS 5-24232	1309
NAS 5-24241	2886
NAS 5-24242	1876
NAS 5-24251	1877
NAS 5-24264	3376
NAS 5-24275	2113
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NAS 5-24294	2207
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NAS 5-24296	2638
NAS 5-24297	3694
NAS 5-24298	3695
NAS 5-24299	3696
NAS 5-24308	1097
NAS 5-24328	2820
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NAS 5-25158	2646
NAS 5-25165	1907
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NAS 5-25185	1879
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NAS 5-25351	3104
NAS 5-25358	2305
NAS 5-25373	3725
NAS 5-25374	1953
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NAS 5-25378	2029
NAS 5-25388	2341
NAS 5-25389	2702
NAS 5-25399	3981
NAS 5-25409	2647
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NAS 5-25422	2921
NAS 5-25428	3493
NAS 5-25437	2342
NAS 5-25445	2428
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NAS 5-25888	3212
NAS 5-25892	1420
NAS 5-25916	2648
NAS 6-1667	3544
NAS 6-2388	3873
NAS 6-2456	3263
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NAS 6-2706	2306
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NAS 6-2794	2649
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NAS 6-2855	2417
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NAS 6-2888	2307
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NAS 8-31171	1044
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NAS 8-32034	3498
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NAS 8-32807	2210
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NAS 8-32835	1922
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NAS 8-32945	1000
NAS 8-32947	3050
NAS 8-32950	1102
NAS 8-32951	3362
NAS 8-32975	2803
NAS 8-32976	2764
NAS 8-32977	2804
NAS 8-32984	1581
NAS 8-32993	2108
NAS 8-32994	2512
NAS 8-33010	2064
NAS 8-33011	1423
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NAS 8-33015	3147
NAS 8-33023	3545
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NAS 8-33074	3032
NAS 8-33084	1749
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NAS 8-33099	2998
NAS 8-33102	2842
NAS 8-33105	2348
NAS 8-33106	2310
NAS 8-33108	1180
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NAS 8-33113	3750
NAS 8-33115	1508
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NAS 8-33137	2513
NAS 8-33138	2514
NAS 8-33148	3926
NAS 8-33150	4018
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NAS 8-33216	1051
NAS 8-33218	3503
NAS 8-33219	2030
NAS 8-33222	3985
NAS 8-33224	1163
NAS 8-33225	3504
NAS 8-33234	1321
NAS 8-33273	2805
NAS 8-33295	2806
NAS 8-33326	2438
NAS 8-33327	3848
NAS 8-33328	3096
NAS 8-33329	2349
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NAS 8-33331	1182
NAS 8-33333	1750
NAS 8-33334	2183
NAS 8-33335	3751
NAS 8-33536	3426
NAS 8-33337	3927
NAS 8-33338	1751
NAS 8-33340	3986
NAS 8-33341	2882
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NAS 8-33348	3849
NAS 8-33349	1424
NAS 8-33350	2079
NAS 8-33351	1103
NAS 8-33352	1183
NAS 8-33353	1509
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NAS 8-33356	1425
NAS 8-33357	1426
NAS 8-33358	2351
NAS 8-33359	3874
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NAS 8-33450	2738
NAS 8-33479	2289
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NAS 9-12434	3577
NAS 9-12560	2705
NAS 9-13642	2906
NAS 9-13669	3466
NAS 9-13680	3646
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NAS 9-13844	1029
NAS 9-13894	3578
NAS 9-13904	3579
NAS 9-13940	2907
NAS 9-14052	2230
NAS 9-14251	1164
NAS 9-14407	3528
NAS 9-14491	3647
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NAS 9-14546	3529
NAS 9-14565	1427
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NAS 9-14689	3580
NAS 9-14692	1104
NAS 9-14770	1001
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NAS 9-14871	3740
NAS 9-14875	3582
NAS 9-14899	2222
NAS 9-14979	3422
NAS 9-15081	2149
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NAS 9-15114	1929
NAS 9-15147	2440
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NAS 9-15193	3612
NAS 9-15203	1484
NAS 9-15217	3649
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NAS 9-15311	3583
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NAS 9-15343	2515
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NAS 9-15567	3651
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NAS 9-15630	3549
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NAS 9-15889	2153
NAS 9-15891	3534
NAS 9-15896	2759
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NAS 9-15944	3618
NAS 9-15950	2273
NAS 9-15962	3588
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NSG 1593	3485
NSG 1594	1722
NSG 1595	3788
NSG 1596	3430
NSG 1597	3904
NSG 1598	3905
NSG 1599	3859
NSG 1600	1943
NSG 1601	2783
NSG 1602	3092
NSG 1603	3624
NSG 1604	1870
NSG 1605	2195
NSG 1606	3352
NSG 1607	2671
NSG 1608	3906
NSG 1609	2123
NSG 1610	3007
NSG 1611	3093
NSG 1612	1824
NSG 1613	3222
NSG 1614	3755
NSG 1615	3535
NSG 1616	2935
NSG 1617	3457
NSG 1618	3833
NSG 1619	2879
NSG 1620	3223
NSG 1621	3907
NSG 1622	3224
NSG 1623	2749
NSG 1624	3038
NSG 1625	3768
NSG 1626	3769
NSG 1627	3908
NSG 1628	3039
NSG 1629	2241
NSG 1630	2851
NSG 1631	3114
NSG 1632	3663
NSG 1633	2242
NSG 1634	3834
NSG 1635	2158
NSG 1636	3040
NSG 1637	1456
NSG 1638	1761
NSG 1639	3596
NSG 1640	2784
NSG 1641	1600
NSG 1642	2968
NSG 1643	1995
NSG 1644	2433
NSG 1645	3835
NSG 1646	3922
NSG 1647	3106
NSG 1648	2291
NSG 1649	3836
NSG 1650	3837
NSG 1651	2969
NSG 1652	3860
NSG 1653	3770

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AGREEMENT NUMBER	ACC NO.
NSG 1654	3094
NSG 1655	3838
NSG 2007	1371
NSG 2008	2695
NSG 2010	2555
NSG 2013	3200
NSG 2014	2712
NSG 2018	2672
NSG 2029	1910
NSG 2031	2460
NSG 2032	556
NSG 2038	3909
NSG 2041	2281
NSG 2048	1811
NSG 2062	2852
NSG 2063	1670
NSG 2065	3664
NSG 2085	1372
NSG 2088	2903
NSG 2091	2196
NSG 2092	1373
NSG 2100	1374
NSG 2104	3995
NSG 2112	1125
NSG 2113	2673
NSG 2117	3441
NSG 2118	2557
NSG 2119	2124
NSG 2120	1944
NSG 2121	1375
NSG 2122	3374
NSG 2127	1457
NSG 2130	1289
NSG 2137	3608
NSG 2139	2287
NSG 2140	2808
NSG 2142	2558
NSG 2143	1969
NSG 2147	3020
NSG 2149	2068
NSG 2151	1458
NSG 2156	2610
NSG 2162	3225
NSG 2172	2559
NSG 2175	3226
NSG 2176	3935
NSG 2179	3227
NSG 2180	2560
NSG 2183	1911
NSG 2185	1825
NSG 2186	1290
NSG 2190	1376
NSG 2192	2159
NSG 2193	2762
NSG 2194	2853
NSG 2196	2561
NSG 2198	3097
NSG 2199	1246
NSG 2203	1377
NSG 2205	1126
NSG 2207	1459
NSG 2209	1291
NSG 2210	1266
NSG 2213	1292
NSG 2215	1378
NSG 2217	1028
NSG 2220	3278
NSG 2222	1649
NSG 2225	3861
NSG 2226	3597
NSG 2228	3936
NSG 2230	2562
NSG 2232	1723
NSG 2233	1379
NSG 2239	1293
NSG 2246	1380
NSG 2248	1762
NSG 2249	1381
NSG 2251	1382
NSG 2254	1383
NSG 2256	1491
NSG 2257	2197
NSG 2258	1384
NSG 2259	2996
NSG 2260	3937
NSG 2263	2563
NSG 2265	2461
NSG 2266	2564
NSG 2269	1294
NSG 2271	1460
NSG 2274	1295
NSG 2275	1686
NSG 2281	1267
NSG 2282	3307
NSG 2283	1205
NSG 2284	1079
NSG 2285	1385
NSG 2286	1687
NSG 2287	1724
NSG 2288	1945
NSG 2289	1386
NSG 2290	1530
NSG 2291	2811
NSG 2292	1387
NSG 2294	1388
NSG 2297	1389
NSG 2298	3229
NSG 2299	2854
NSG 2300	2214
NSG 2301	3910
NSG 2303	2317
NSG 2304	1671
NSG 2305	1296
NSG 2306	1996
NSG 2307	1297
NSG 2308	1390
NSG 2311	1912
NSG 2315	1298
NSG 2318	2262
NSG 2321	1531
NSG 2323	1997
NSG 2325	2266
NSG 2327	2215
NSG 2328	2069
NSG 2331	2970
NSG 2332	1299
NSG 2333	2674
NSG 2334	2565
NSG 2335	2566
NSG 2337	3625
NSG 2338	3665
NSG 2339	1300
NSG 2341	1258
NSG 2342	2567
NSG 2343	3098
NSG 2344	1461
NSG 2345	3666
NSG 2346	1391
NSG 2347	2971
NSG 2348	2911
NSG 2349	1127
NSG 2350	3731
NSG 2351	1700
NSG 2353	1301
NSG 2354	3567
NSG 2355	1302
NSG 2356	1998
NSG 2357	3353
NSG 2358	1650
NSG 2359	1392
NSG 2360	2972
NSG 2361	3021
NSG 2362	3938
NSG 2363	1999
NSG 2364	2398
NSG 2365	3939
NSG 2366	2855
NSG 2367	2058
NSG 2368	3022
NSG 2370	1493
NSG 2371	1303
NSG 2372	1394
NSG 2373	3267
NSG 2374	3268
NSG 2375	2769
NSG 2376	1601
NSG 2377	1651
NSG 2378	2383
NSG 2379	3513
NSG 2380	3047
NSG 2381	1128
NSG 2382	2973
NSG 2383	1492
NSG 2384	3154
NSG 2385	3940
NSG 2386	3053
NSG 2387	3316

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AGREEMENT NUMBER	ACC NO.
NSG 2388	2177
NSG 2389	2974
NSG 2390	3138
NSG 2391	1235
NSG 2392	1395
NSG 2393	1396
NSG 2395	2812
NSG 2396	3301
NSG 2397	2813
NSG 2398	1304
NSG 2399	2975
NSG 2400	1397
NSG 2401	2160
NSG 2403	2568
NSG 2404	2161
NSG 2405	3996
NSG 2406	1493
NSG 2407	3442
NSG 2408	2976
NSG 3009	3155
NSG 3011	1725
NSG 3012	3399
NSG 3016	3400
NSG 3017	2569
NSG 3018	1946
NSG 3019	2977
NSG 3022	3250
NSG 3024	3251
NSG 3028	1462
NSG 3030	2059
NSG 3032	3401
NSG 3034	1602
NSG 3036	2000
NSG 3039	2070
NSG 3040	3156
NSG 3041	2713
NSG 3043	2125
NSG 3044	2570
NSG 3046	2571
NSG 3047	1603
NSG 3048	2178
NSG 3050	2936
NSG 3051	3077
NSG 3052	2001
NSG 3055	1604
NSG 3059	3008
NSG 3060	1726
NSG 3062	3157
NSG 3065	1250
NSG 3066	3252
NSG 3071	2162
NSG 3073	3911
NSG 3074	3158
NSG 3075	1080
NSG 3076	2572
NSG 3079	2573
NSG 3082	1532
NSG 3084	3272
NSG 3085	3159
NSG 3086	1727
NSG 3089	3667
NSG 3090	3354
NSG 3091	3253
NSG 3092	2893
NSG 3094	2714
NSG 3095	3054
NSG 3098	2126
NSG 3099	3273
NSG 3103	1605
NSG 3105	2163
NSG 3106	2002
NSG 3107	1826
NSG 3108	3023
NSG 3113	2770
NSG 3114	2263
NSG 3115	3160
NSG 3116	1533
NSG 3117	2216
NSG 3118	3458
NSG 3119	2164
NSG 3121	3274
NSG 3122	1708
NSG 3123	3102
NSG 3124	1398
NSG 3126	3161
NSG 3127	1728
NSG 3128	3355
NSG 3129	2574
NSG 3130	1871
NSG 3131	3162
NSG 3133	2179
NSG 3135	2165
NSG 3136	3340
NSG 3137	2622
NSG 3138	3055
NSG 3139	3275
NSG 3140	3163
NSG 3142	3164
NSG 3143	2071
NSG 3145	1729
NSG 3146	3712
NSG 3147	3254
NSG 3148	2675
NSG 3149	2072
NSG 3150	1606
NSG 3151	3165
NSG 3152	3941
NSG 3153	1534
NSG 3154	1033
NSG 3155	3193
NSG 3156	3276
NSG 3157	3107
NSG 3159	3201
NSG 3160	3108
NSG 3161	2676
NSG 3162	3369
NSG 3163	3443
NSG 3164	3230
NSG 3165	2677
NSG 3166	3402
NSG 3167	1730
NSG 3168	3444
NSG 3169	1827
NSG 3170	3041
NSG 3171	3277
NSG 3172	3343
NSG 3173	3514
NSG 3174	2912
NSG 3175	2575
NSG 3176	2856
NSG 3177	3862
NSG 3178	2857
NSG 3179	3370
NSG 3180	2880
NSG 3181	1763
NSG 3182	2180
NSG 3183	2143
NSG 3184	1835
NSG 3185	2166
NSG 3186	2256
NSG 3187	2576
NSG 3188	3255
NSG 3189	1836
NSG 3190	3668
NSG 3191	2917
NSG 3192	2678
NSG 3193	3371
NSG 3194	3942
NSG 3195	2181
NSG 3196	1731
NSG 3197	3166
NSG 3198	3669
NSG 3199	2771
NSG 3200	2267
NSG 3201	3598
NSG 3202	3344
NSG 3203	3167
NSG 3204	3912
NSG 3206	3168
NSG 3207	3169
NSG 3208	2577
NSG 3209	2288
NSG 3210	2578
NSG 3211	3170
NSG 3212	2403
NSG 3213	2167
NSG 3214	3445
NSG 3215	2628
NSG 3217	4020
NSG 3218	3256
NSG 3219	1607
NSG 3220	2062
NSG 3221	3171
NSG 3222	3194
NSG 3223	3195
NSG 3224	3515
NSG 3225	3469

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AGREEMENT NUMBER	ACC NO.
NSG 3227	1463
NSG 3228	2003
NSG 3230	3172
NSG 3231	2772
NSG 3233	1026
NSG 3234	2579
NSG 3235	3231
NSG 3236	1535
NSG 3237	2168
NSG 3238	1816
NSG 3239	3913
NSG 3240	3295
NSG 3241	3173
NSG 3242	3863
NSG 3243	1701
NSG 3245	2580
NSG 3246	3174
NSG 3247	3232
NSG 3248	1702
NSG 3249	1161
NSG 3250	3278
NSG 3251	3175
NSG 3252	3176
NSG 3253	2814
NSG 3254	1947
NSG 3255	3638
NSG 3256	1652
NSG 3257	3196
NSG 3258	2169
NSG 3259	3197
NSG 3260	2004
NSG 3261	3943
NSG 3262	3042
NSG 3263	3257
NSG 3264	3404
NSG 3265	3405
NSG 3266	3406
NSG 3267	3258
NSG 3268	3177
NSG 3269	3233
NSG 3270	1837
NSG 3271	3178
NSG 3272	3179
NSG 3273	1943
NSG 3274	3914
NSG 3275	3915
NSG 3276	3180
NSG 3277	2257
NSG 3278	3206
NSG 3279	3181
NSG 3280	2874
NSG 3281	3279
NSG 3282	3182
NSG 3283	3244
NSG 3285	2170
NSG 3286	2581
NSG 3287	3516
NSG 3288	3183
NSG 3289	3184
NSG 3290	2243
NSG 3291	3185
NSG 3292	2858
NSG 3293	2127
NSG 3294	2144
NSG 3295	1034
NSG 3296	1608
NSG 3297	2005
NSG 3298	3078
NSG 3299	2626
NSG 3301	3407
NSG 3302	3234
NSG 3303	2582
NSG 3304	3408
NSG 3305	2217
NSG 3306	3409
NSG 3307	2006
NSG 3308	3198
NSG 4001	1536
NSG 4002	1399
NSG 4003	2171
NSG 4008	2244
NSG 4013	3325
NSG 4014	1236
NSG 4015	1537
NSG 4017	2245
NSG 4018	3302
NSG 4019	2246
NSG 4020	1237
NSG 4021	2247
NSG 4022	1238
NSG 4023	2248
NSG 4024	1538
NSG 4025	3137
NSG 4026	2249
NSG 5009	2299
NSG 5012	2007
NSG 5013	2913
NSG 5014	2815
NSG 5017	2384
NSG 5023	1129
NSG 5034	3009
NSG 5042	2385
NSG 5049	2128
NSG 5051	2301
NSG 5053	3839
NSG 5056	1539
NSG 5060	2978
NSG 5066	1840
NSG 5071	1888
NSG 5072	2937
NSG 5073	1732
NSG 5074	2333
NSG 5075	1817
NSG 5076	2583
NSG 5077	3091
NSG 5080	2938
NSG 5082	2008
NSG 5085	3705
NSG 5087	3706
NSG 5088	2715
NSG 5090	2318
NSG 5092	1494
NSG 5093	1464
NSG 5094	2386
NSG 5100	3997
NSG 5102	3079
NSG 5103	1764
NSG 5106	165
NSG 5108	03
NSG 5109	1872
NSG 5111	1841
NSG 5113	2584
NSG 5120	3117
NSG 5122	1902
NSG 5123	2387
NSG 5125	3080
NSG 5127	1889
NSG 5128	2462
NSG 5129	2388
NSG 5130	3010
NSG 5131	1400
NSG 5133	3011
NSG 5134	3599
NSG 5135	1807
NSG 5137	2389
NSG 5141	3235
NSG 5142	3944
NSG 5143	2463
NSG 5144	1838
NSG 5145	2816
NSG 5151	2774
NSG 5152	3998
NSG 5153	1765
NSG 5154	3670
NSG 5155	1654
NSG 5156	3600
NSG 5157	2585
NSG 5158	1890
NSG 5159	2040
NSG 5160	2464
NSG 5162	3356
NSG 5163	2939
NSG 5165	1540
NSG 5166	2586
NSG 5167	3671
NSG 5168	2940
NSG 5169	1541
NSG 5170	1655
NSG 5171	2679
NSG 5172	2390
NSG 5173	1842
NSG 5174	2391
NSG 5176	2465
NSG 5177	2392
NSG 5178	1766
NSG 5180	3999
NSG 5181	4000

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AGREEMENT NUMBER	ACC NO.
NSG 5183	3280
NSG 5184	2319
NSG 5185	3410
NSG 5186	1891
NSG 5187	2785
NSG 5189	2680
NSG 5190	1542
NSG 5191	2466
NSG 5192	1903
NSG 5193	3601
NSG 5195	2875
NSG 5197	1206
NSG 5198	3752
NSG 5199	2198
NSG 5200	2941
NSG 5202	2097
NSG 5203	2041
NSG 5205	3411
NSG 5206	2681
NSG 5207	3281
NSG 5208	1207
NSG 5209	2393
NSG 5211	1767
NSG 5212	3412
NSG 5213	2129
NSG 5215	3741
NSG 5216	3742
NSG 5218	2621
NSG 5219	1064
NSG 5220	2009
NSG 5221	3916
NSG 5222	2942
NSG 5223	4001
NSG 5224	1208
NSG 5226	2467
NSG 5227	1465
NSG 5228	2468
NSG 5229	2469
NSG 5230	2320
NSG 5231	2042
NSG 5232	2682
NSG 5233	3672
NSG 5234	2394
NSG 5235	1130
NSG 5237	2716
NSG 5238	2270
NSG 5239	2470
NSG 5240	3945
NSG 5241	4002
NSG 5242	4003
NSG 5243	1209
NSG 5244	1210
NSG 5246	1768
NSG 5247	3236
NSG 5248	2859
NSG 5249	1131
NSG 5250	3081
NSG 5251	4004
NSG 5252	4005
NSG 5253	2587
NSG 5254	1401
NSG 5255	2321
NSG 5256	1466
NSG 5257	3315
NSG 5258	1733
NSG 5259	1734
NSG 5260	2588
NSG 5262	1656
NSG 5263	1543
NSG 5265	3237
NSG 5266	3602
NSG 5267	1211
NSG 5268	1892
NSG 5269	2322
NSG 5270	3446
NSG 5271	3082
NSG 5272	1544
NSG 5273	2943
NSG 5274	3056
NSG 5275	3238
NSG 5276	3413
NSG 5277	2860
NSG 5278	2130
NSG 5279	1132
NSG 5280	3707
NSG 5281	2683
NSG 5282	2684
NSG 5283	3946
NSG 5284	3024
NSG 5285	2696
NSG 5286	3556
NSG 5287	2395
NSG 5288	1873
NSG 5289	3840
NSG 5290	1905
NSG 5291	2098
NSG 5292	1467
NSG 5293	2471
NSG 5294	2131
NSG 5295	1893
NSG 5296	3431
NSG 5297	3482
NSG 5298	2396
NSG 5299	3239
NSG 5300	1769
NSG 5301	1212
NSG 5302	1133
NSG 5303	1770
NSG 5305	3774
NSG 5306	2589
NSG 5307	1913
NSG 5308	3326
NSG 5309	3673
NSG 5310	2323
NSG 5311	2099
NSG 5312	2472
NSG 5313	2397
NSG 5314	1213
NSG 5316	2828
NSG 5317	2043
NSG 5318	1771
NSG 5319	2132
NSG 5320	2398
NSG 5321	1609
NSG 5322	1610
NSG 5323	2399
NSG 5324	1251
NSG 5325	2997
NSG 5326	2044
NSG 5327	1214
NSG 5328	3674
NSG 5329	3099
NSG 5330	1252
NSG 5331	1611
NSG 5332	2800
NSG 5333	1253
NSG 5334	2914
NSG 5335	2250
NSG 5336	1894
NSG 5337	3675
NSG 5338	2763
NSG 5339	2199
NSG 5340	1735
NSG 5341	1736
NSG 5342	1962
NSG 5343	3327
NSG 5344	1963
NSG 5346	1818
NSG 5347	3414
NSG 5348	2817
NSG 5349	3470
NSG 5350	3471
NSG 5351	1545
NSG 5352	1737
NSG 5353	3328
NSG 5354	3100
NSG 5355	1772
NSG 5356	1704
NSG 5357	1738
NSG 5358	1546
NSG 5359	3282
NSG 5360	1468
NSG 5361	1661
NSG 5362	3447
NSG 5363	4006
NSG 5364	3557
NSG 5365	1773
NSG 5366	2685
NSG 5367	1808
NSG 5368	3240
NSG 5369	1215
NSG 5370	2473
NSG 5371	3775
NSG 5372	1774
NSG 5373	2717
NSG 5374	3947
NSG 5375	3452

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AGREEMENT NUMBER	ACC NO.
NSG 5376	2620
NSG 5377	1547
NSG 5378	1895
NSG 5379	3676
NSG 5380	2474
NSG 5381	1216
NSG 5382	2861
NSG 5383	3963
NSG 5384	1217
NSG 5385	1218
NSG 5386	3372
NSG 5387	3677
NSG 5388	3283
NSG 5389	2434
NSG 5390	2400
NSG 5391	2801
NSG 5392	3186
NSG 5393	2324
NSG 5394	1795
NSG 5395	3948
NSG 5396	3481
NSG 5397	2718
NSG 5398	3949
NSG 5399	2401
NSG 5400	2775
NSG 5401	2334
NSG 5402	2100
NSG 5403	3776
NSG 5404	2402
NSG 5405	2101
NSG 5406	3115
NSG 5407	2435
NSG 5408	2403
NSG 5410	3950
NSG 5411	3012
NSG 5414	2172
NSG 5415	2862
NSG 5416	2300
NSG 5418	3721
NSG 6004	3415
NSG 6005	2719
NSG 6006	2419
NSG 6007	3357
NSG 6008	3626
NSG 6009	2720
NSG 6011	3448
NSG 6014	1065
NSG 6016	2420
NSG 6017	2421
NSG 6018	3303
NSG 6019	3358
NSG 6020	2979
NSG 6021	2721
NSG 6022	2829
NSG 6023	3708
NSG 6024	1066
NSG 6025	2422
NSG 6026	3269
NSG 6027	3743
NSG 6028	1067
NSG 6029	3917
NSG 6030	3918
NSG 6031	3919
NSG 6033	2423
NSG 6034	2424
NSG 6035	3359
NSG 7003	3083
NSG 7005	2722
NSG 7010	2590
NSG 7011	1134
NSG 7016	2786
NSG 7020	1135
NSG 7022	3139
NSG 7024	1136
NSG 7027	1612
NSG 7032	3558
NSG 7034	3709
NSG 7035	3187
NSG 7037	3603
NSG 7038	3744
NSG 7040	1081
NSG 7041	3284
NSG 7043	3559
NSG 7044	2133
NSG 7045	1137
NSG 7046	2404
NSG 7050	4007
NSG 7052	1548
NSG 7055	2325
NSG 7065	3043
NSG 7069	2010
NSG 7070	1138
NSG 7071	3063
NSG 7076	3474
NSG 7077	2591
NSG 7080	2863
NSG 7081	2592
NSG 7085	3951
NSG 7087	2787
NSG 7092	1402
NSG 7093	3057
NSG 7095	2475
NSG 7096	3475
NSG 7101	1139
NSG 7102	1613
NSG 7105	2944
NSG 7106	1166
NSG 7108	2723
NSG 7114	1140
NSG 7120	3416
NSG 7121	1614
NSG 7126	2980
NSG 7127	1469
NSG 7128	1775
NSG 7129	1219
NSG 7130	1776
NSG 7138	3285
NSG 7143	1949
NSG 7146	1141
NSG 7147	3449
NSG 7151	1639
NSG 7152	1470
NSG 7154	2623
NSG 7156	2981
NSG 7157	3560
NSG 7158	1549
NSG 7159	3678
NSG 7161	1615
NSG 7162	3679
NSG 7164	1550
NSG 7165	1777
NSG 7167	2173
NSG 7168	1142
NSG 7172	4030
NSG 7173	3952
NSG 7174	3953
NSG 7176	2476
NSG 7178	3329
NSG 7179	2045
NSG 7180	1551
NSG 7184	3044
NSG 7186	2593
NSG 7189	3604
NSG 7193	3417
NSG 7194	2945
NSG 7196	2405
NSG 7200	2946
NSG 7202	1220
NSG 7204	1403
NSG 7205	1471
NSG 7206	3745
NSG 7208	1498
NSG 7209	2686
NSG 7210	3746
NSG 7212	2102
NSG 7214	3964
NSG 7215	4008
NSG 7220	1472
NSG 7221	2724
NSG 7222	3058
NSG 7223	4026
NSG 7226	3732
NSG 7228	3627
NSG 7229	1247
NSG 7231	1778
NSG 7232	3680
NSG 7235	2982
NSG 7236	1950
NSG 7237	2725
NSG 7239	1552
NSG 7241	3059
NSG 7246	1143
NSG 7247	2111
NSG 7248	2947
NSG 7249	1144
NSG 7252	2406
NSG 7253	2407

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AGREEMENT NUMBER	ACC NO.
NSG 7254	2436
NSG 7255	1082
NSG 7256	2864
NSG 7262	1473
NSG 7263	1248
NSG 7266	3864
NSG 7267	1970
NSG 7268	2983
NSG 7270	3084
NSG 7271	1809
NSG 7272	4023
NSG 7275	1221
NSG 7277	1474
NSG 7278	2174
NSG 7280	2865
NSG 7282	1553
NSG 7283	2866
NSG 7284	2408
NSG 7286	3085
NSG 7287	1779
NSG 7289	3747
NSG 7290	1828
NSG 7291	1780
NSG 7292	2818
NSG 7293	2627
NSG 7294	1616
NSG 7295	1554
NSG 7296	2726
NSG 7297	2594
NSG 7299	1951
NSG 7300	3628
NSG 7301	3286
NSG 7302	2867
NSG 7303	2103
NSG 7304	2477
NSG 7308	2687
NSG 7309	1964
NSG 7310	2046
NSG 7312	2047
NSG 7313	3954
NSG 7314	1242
NSG 7315	1555
NSG 7316	1222
NSG 7317	4032
NSG 7318	3955
NSG 7319	1781
NSG 7320	3086
NSG 7321	3025
NSG 7322	2409
NSG 7323	2048
NSG 7324	2984
NSG 7326	3681
NSG 7327	2876
NSG 7328	2595
NSG 7329	2596
NSG 7330	1688
NSG 7331	2597
NSG 7332	2478
NSG 7333	1145
NSG 7334	2788
NSG 7335	1556
NSG 7336	1475
NSG 7337	1918
NSG 7338	2598
NSG 7339	2599
NSG 7340	2410
NSG 7341	1557
NSG 7342	1223
NSG 7343	3523
NSG 7344	1782
NSG 7345	3045
NSG 7346	2891
NSG 7347	3682
NSG 7348	2985
NSG 7349	4021
NSG 7350	3418
NSG 7351	2251
NSG 7352	3243
NSG 7355	3868
NSG 7356	2104
NSG 7357	2275
NSG 7358	1146
NSG 7360	3333
NSG 7361	3561
NSG 7362	3562
NSG 7363	3683
NSG 7364	3865
NSG 7365	2411
NSG 7367	1705
NSG 7368	1147
NSG 7369	3046
NSG 7370	3605
NSG 7371	3684
NSG 7372	2789
NSG 7373	4033
NSG 7374	1148
NSG 7375	1499
NSG 7376	1224
NSG 7377	1617
NSG 7378	1896
NSG 7379	2868
NSG 7381	3685
NSG 7382	2326
NSG 7385	2426
NSG 7386	3563
NSG 7387	1225
NSG 7388	3748
NSG 7389	2139
NSG 7392	2624
NSG 7394	2073
NSG 7395	1404
NSG 7396	2600
NSG 7397	2616
NSG 7398	2479
NSG 7401	1476
NSG 7403	2049
NSG 7404	2688
NSG 7405	2617
NSG 7406	1618
NSG 7407	1558
NSG 7408	3686
NSG 7409	4024
NSG 7410	3629
NSG 7411	2830
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NSG 7415	1083
NSG 7416	3771
NSG 7417	3606
NSG 7418	3716
NSG 7419	1149
NSG 7420	2276
NSG 7422	1843
NSG 7423	2050
NSG 7424	3287
NSG 7425	3733
NSG 7427	2412
NSG 7428	2601
NSG 7429	1084
NSG 7430	1783
NSG 7431	3288
NSG 7432	2602
NSG 7433	2025
NSG 7434	2948
NSG 7435	3609
NSG 7436	1150
NSG 7438	2603
NSG 7440	3630
NSG 7441	2268
NSG 7442	1226
NSG 7443	2051
NSG 7444	3270
NSG 7445	2986
NSG 7447	1068
NSG 7448	3956
NSG 7449	2327
NSG 7450	1819
NSG 7452	2689
NSG 7453	3753
NSG 7454	3103
NSG 7455	1477
NSG 7456	1254
NSG 7457	3317
NSG 7458	1227
NSG 7459	1784
NSG 7460	1785
NSG 7461	2480
NSG 7462	2052
NSG 7463	3524
NSG 7464	2105
NSG 7465	3419
NSG 7466	2949
NSG 7467	2604
NSG 7468	2427
NSG 7469	2413
NSG 7470	2425

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AGREEMENT NUMBER	ACC NO.
NSG 7471	2219
NSG 7472	1500
NSG 7473	1919
NSG 7474	1619
NSG 7475	3289
NSG 7476	1405
NSG 7477	1786
NSG 7478	2224
NSG 7479	3241
NSG 7480	3687
NSG 7481	2831
NSG 7482	2414
NSG 7484	1559
NSG 7485	1151
NSG 7487	2987
NSG 7488	2988
NSG 7489	1560
NSG 7490	3564
NSG 7491	3360
NSG 7492	2690
NSG 7493	1495
NSG 7494	3361
NSG 7495	1228
NSG 7496	2415
NSG 7497	2481
NSG 7498	2989
NSG 7501	3060
NSG 7502	1152
NSG 7503	1662
NSG 7504	3476
NSG 7505	3688
NSG 7506	2134
NSG 7507	1787
NSG 7508	1229
NSG 7510	1965
NSG 7511	1788
NSG 7512	1268
NSG 7513	2482
NSG 7515	3420
NSG 7516	3734
NSG 7517	4029
NSG 7520	2140
NSG 7521	4009
NSG 7522	1478
NSG 7523	4031
NSG 7525	1259
NSG 7526	2605
NSG 7527	1479
NSG 7529	2990
NSG 7531	3334
NSG 7532	2106
NSG 7534	2277
NSG 7535	1706
NSG 7536	2053
NSG 7537	2483
NSG 7538	1406
NSG 7539	2026
NSG 7540	3109
NSG 7541	1620
NSG 7542	2274
NSG 7543	3525
NSG 7544	1153
NSG 7545	2790
NSG 7546	2991
NSG 7547	2992
NSG 7548	1085
NSG 7550	2107
NSG 7551	3631
NSG 7552	1407
NSG 7553	3087
NSG 7555	2416
NSG 7556	2606
NSG 7557	3689
NSG 7558	1154
NSG 7559	1789
NSG 7561	1408
NSG 7562	3101
NSG 7563	2776
NSG 7565	1230
NSG 7566	1261
NSG 7567	3749
NSG 7568	2869
NSG 7569	3459
NSG 7570	3460
NSG 7571	2618
NSG 7572	3866
NSG 7573	1155
NSG 7574	1156
NSG 7575	2727
NSG 7576	1157
NSG 7577	1158
NSG 7578	2791
NSG 7579	2902
NSG 7580	2225
NSG 7581	1561
NSG 7582	1562
NSG 7583	1563
NSG 7584	1790
NSG 7585	3345
NSG 7586	1657
NSG 7587	2691
NSG 7588	2437
NSG 7589	3461
NSG 7590	2054
NSG 7591	3013
NSG 7592	1480
NSG 7593	2993
NSG 7594	1564
NSG 7595	1707
NSG 7597	2055
NSG 7598	2135
NSG 7599	3710
NSG 7600	2870
NSG 7601	2877
NSG 7602	2871
NSG 7604	2607
NSG 7605	3462
NSG 7606	2994
NSG 7607	1159
NSG 7608	2692
NSG 7609	3632
NSG 7610	1231
NSG 7611	3957
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NSG 7613	2226
NSG 7614	1243
NSG 7616	1565
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NSG 7619	1409
NSG 7620	3290
NSG 7621	1566
NSG 7622	2892
NSG 7623	1621
NSG 7624	1897
NSG 7625	1069
NSG 7626	1791
NSG 7628	2278
NSG 7629	1920
NSG 7630	1086
NSG 7631	3450
NSG 7632	2220
NSG 7633	2056
NSG 7634	1160
NSG 7635	1481
NSG 7636	3014
NSG 7637	1792
NSG 7638	2608
NSG 7639	3335
NSG 7640	3304
NSG 7642	1087
NSG 7652	2013
NSG 8019	1968
NSG 8025	2282
NSG 8026	2732
NSG 8027	2015
NSG 8033	1003
NSG 8035	3483
NSG 8036	2730
NSG 8037	1004
NSG 8038	1035
NSG 8040	3061
NSG 8041	1005
NSG 8042	1006
NSG 8043	2014
NSG 8045	3116
NSG 8047	1027
NSG 8048	2018
NSG 8050	2294
NSG 8051	1007
NSG 8053	2283
NSG 8054	1036
NSG 8055	2773
NSG 8056	2284
NSG 8057	1008
NSG 8060	3484
NSG 8061	2795

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AGREEMENT NUMBER	ACC NO.
NSG 8062	1009
NSG 8064	1010
NSG 8065	1011
NSG 8066	1012
NSG 8067	1013
NSG 8068	1014
NSG 9006	3541
NSG 9010	1898
NSG 9013	3088
NSG 9019	1232
NSG 9020	1658
NSG 9021	3690
NSG 9026	3717
NSG 9030	2285
NSG 9032	3958
NSG 9033	3539
NSG 9036	1793
NSG 9038	3537
NSG 9039	3565
NSG 9042	3634
NSG 9043	3637
NSG 9044	3089
NSG 9045	1739
NSG 9047	2693
NSG 9048	1622
NSG 9049	3718
NSG 9050	2728
NSG 9051	1812
NSG 9052	3959
NSG 9054	2484
NSG 9055	2792
NSG 9056	3451
NSG 9059	2918
NSG 9060	2221
NSG 9062	3713
NSG 9063	3867
NSG 9065	2878
NSG 9068	1088
NSG 9069	2619
NSG 9070	3540
NSG 9071	2057
NSG 9072	2141
NSG 9073	2793
NSG 9075	1623
NSG 9076	3538
NSG 9077	2142
W-14168	3291

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APPENDIX B
CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

The Fields used here are specified by Amendment J, "Standard Classification of Fields of Science and Engineering," to Office of Management and Budget (OMB) Circular A-46, "Standards for Statistical Surveys." Field codes are interpreted as follows:

PHYSICAL SCIENCES

11 ASTRONOMY
12 CHEMISTRY
13 PHYSICS
19 PHYSICAL SCIENCES, NEC*

ENVIRONMENTAL SCIENCES (Terrestrial and extraterrestrial)

31 ATMOSPHERIC SCIENCES
32 GEOLOGICAL SCIENCES
33 OCEANOGRAPHY
39 ENVIRONMENTAL SCIENCES, NEC*

LIFE SCIENCES

51 BIOLOGICAL SCIENCES
52 CLINICAL MEDICAL
53 OTHER MEDICAL
54 ENVIRONMENTAL BIOLOGY
55 AGRICULTURAL SCIENCES
56 MEDICAL SCIENCES
59 LIFE SCIENCES, NEC*

SOCIAL SCIENCES

71 ANTHROPOLOGY
72 ECONOMICS
73 HISTORY
74 LINGUISTICS
75 POLITICAL SCIENCE
76 SOCIOLOGY
79 SOCIAL SCIENCE, NEC*

ENGINEERING

41 AERONAUTICAL
42 ASTRONAUTICAL
43 CHEMICAL
44 CIVIL
45 ELECTRICAL
46 MECHANICAL
47 METALLURGY AND MATERIALS
49 ENGINEERING, NEC*

MATHEMATICAL/COMP SCI

21 MATHEMATICS
22 COMPUTER SCIENCES
29 MATHEMATICAL COMPUTER SCIENCES, NEC*

PSYCHOLOGY

61 BIOLOGICAL
62 SOCIAL ASPECTS
69 PSYCHOLOGY, NEC*

*OTHER SCIENCES***

99 ALL DISCIPLINE(S)

*Not Elsewhere Classified (For interdisciplinary projects and others not listed by discipline name)
**For interdisciplinary projects which cannot be classified within any of the preceding main fields

Abbreviations used in the "Technical Officer Locations" column are discussed in the prefatory pages.

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	AGREEMENT NUMBER	ACC NO.
11	BELOIT COLLEGE	O'Dell, C. R.	MSFC	Schroeder, D. J.	NAS 8-32901	3965
11	BELOIT COLLEGE	Jones, J. B., Jr.	MSFC	Winkler, P. F., Jr.	NAS 8-33355	3966
11	BOSTON UNIVERSITY	Boggess, A.	GSFC	Kamp, L. W.	NAS 5-25445	2428
11	BOSTON UNIVERSITY	Leckronz, D. S.	GSFC	Kamp, L. W.	NSG 5389	2434
11	BOSTON UNIVERSITY	Corrigan, J. P.	GSFC	Hughes, W. J.	NSG 5407	2435
11	BOWIE STATE COLLEGE	Kniffen, D. A.	GSFC	Walker, R. P.	NGR 21-027-001	2295
11	BOWLING GRN STATE U	Roman, N. G.	HQ-SC	Ptak, R. L.	NSG 7022	3139
11	BRANDEIS UNIVERSITY	Jones, J. B., Jr.	MSFC	Willis, A. G.	NAS 8-33326	2438
11	BRANDEIS UNIVERSITY	Jones, J. B., Jr.	MSFC	Ghigo, F. D.	NAS 8-33343	2439
11	CALIF INST OF TECH	Hall, C. F.	ARC	Ingersoll, A. P.	NAS 2-6556	1169
11	CALIF INST OF TECH	Haughney, L. C.	ARC	Werner, M. W.	NGR 05-002-281	1199
11	CALIF INST OF TECH	Neupert, W. M.	GSFC	Zirin, H.	NAS 5-22939	1172
11	CALIF INST OF TECH	Wende, C. D.	GSFC	Garmire, G. P.	NAS 5-23315	1174
11	CALIF INST OF TECH	White, R. A.	GSFC	Westphal, J.	NAS 5-25451	1177
11	CALIF INST OF TECH	Bissell, E. E.	GSFC	Garmire, G. P.	NGR 05-002-284	1200
11	CALIF INST OF TECH	Kupperian, J. E., Jr.	GSFC	Garmire, G. P.	NSG 5197	1206
11	CALIF INST OF TECH	Kupperian, J. E., Jr.	GSFC	Neugebauer, G.	NSG 5208	1207
11	CALIF INST OF TECH	Boggess, A.	GSFC	Greenstein, J. L.	NSG 5243	1209
11	CALIF INST OF TECH	Boggess, A.	GSFC	Schmidt, M.	NSG 5244	1210
11	CALIF INST OF TECH	Boggess, A.	GSFC	Sargent, W. L.	NSG 5369	1215
11	CALIF INST OF TECH	Boggess, A.	GSFC	Greenstein, J. L.	NSG 5381	1216
11	CALIF INST OF TECH	Boggess, A.	GSFC	Meier, D. L.	NSG 5384	1217
11	CALIF INST OF TECH	Boggess, A.	GSFC	Green, R. F.	NSG 5385	1218
11	CALIF INST OF TECH	Talley, D.	MSFC	Stone, E. C.	NAS 8-27978	1178
11	CALIF INST OF TECH	Jones, J. B., Jr.	MSFC	Garmire, G. P.	NAS 8-33331	1182
11	CALIF INST OF TECH	Jones, J. B., Jr.	MSFC	Garmire, G. P.	NAS 8-33352	1183
11	CALIF INST OF TECH	Roman, N. G.	HQ-SC	Oke, J. B.	NGL 05-002-134	1189
11	CALIF INST OF TECH	Boggess, N. W.	HQ-SC	Neugebauer, G.	NGL 05-002-207	1193
11	CALIF INST OF TECH	Kaluzienski, L. J.	HQ-SC	Vogt, R. E.	NGR 05-002-160	1197
11	CALIF INST OF TECH	Roman, N. G.	HQ-SC	Thorne, K. S	NGR 05-002-256	1198

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APPENDIX B CROSS INDEX BY FIELD OF SCIENCE AND ENGINEERING

FIELD CODE	INSTITUTION	TECHNICAL OFFICER	TECH OFF LOC	FIRST PRINCIPAL INVESTIGATOR	AGREEMENT NUMBER	ACC NO.
11	CALIF INST OF TECH	Roman, N. G.	HQ-SC	Mashhoon, B.	NSG 7495	1228
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGL 05-002-003	1185
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Goldreich, P.	NGL 05-002-140	1190
11	CALIF INST OF TECH	Brunk, W. E.	HQ-SL	Muhleman, D. O.	NGR 05-002-114	1195
11	CALIF INST OF TECH	Bohlin, J. D.	HQ-ST	Zirin, H.	NGL 05-002-034	1186
11	CITY COLLEGE OF N Y	Black, D. C.	ARC	Yuan, C.	NSG 2348	2911
11	CITY COLLEGE OF N Y	Canuto, V.	GSFC	Erlbach, E.	NGL 33-013-040	2908
11	COLUMBIA UNIVERSITY	Gemmell, J. D.	GSFC	Novick, R.	NAS 5-24152	2919
11	COLUMBIA UNIVERSITY	Eiband, A. M.	GSFC	Novick, R.	NAS 5-24457	2920
11	COLUMBIA UNIVERSITY	Bissell, E. E.	GSFC	Novick, R.	NGR 33-008-102	2929
11	COLUMBIA UNIVERSITY	Thaddeus, P.	GSFC	Happner, W.	NSG 5163	2939
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Hayes, D. P.	NSG 5168	2940
11	COLUMBIA UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Novick, R.	NSG 5200	2941
11	COLUMBIA UNIVERSITY	Manning, H. S.	MSFC	Novick, R.	NAS 8-30753	2923
11	COLUMBIA UNIVERSITY	Boggess, N. W.	HQ-SC	Flynn, G. W.	NSG 7105	2944
11	COLUMBIA UNIVERSITY	Sofia, S.	HQ-SC	Weisskopf, M. C.	NSG 7248	2947
11	CORNELL UNIVERSITY	Pollack, J. B.	ARC	Burns, J. A.	NCA 2-175801	2953
11	CORNELL UNIVERSITY	Haughney, L. C.	ARC	Houck, J. R.	NGR 33-010-081	2959
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Harwit, M. O.	NGR 33-010-146	2962
11	CORNELL UNIVERSITY	Cameron, R. M.	ARC	Houck, J. R.	NGR 33-010-182	2964
11	CORNELL UNIVERSITY	Haughney, L. C.	ARC	Harwit, M. O.	NSG 2347	2971
11	CORNELL UNIVERSITY	Cohen, S. C.	GSFC	Turcotte, D. L.	NCC 5 2	2954
11	CORNELL UNIVERSITY	Boggess, N. W.	HQ-SC	Houck, J. R.	NSG 7324	2984
11	CORNELL UNIVERSITY	Brunk, W. E.	HQ-SL	Veverka, J.	NSG 7126	2980
11	FAIRLEIGH-DICKNSON U	Heaney, J. B.	GSFC	Moeller, K. D.	NAS 5-25483	2832
11	FLORIDA STATE UNIV	Brunk, W. E.	HQ-SL	Hunt, R. H.	NGR 10-004-056	1917
11	GEORGE MASON UNIV	Hobbs, R. W.	GSFC	Kafotos, M.	NCA 5-92	3773
11	GEORGE MASON UNIV	Hobbs, R. W.	GSFC	Kafotos, M.	NSG 5305	3774
11	GEORGE MASON UNIV	Boggess, A.	GSFC	Kafotos, M.	NSG 5371	3775
11	GEORGE MASON UNIV	Gull, T. R.	GSFC	Kafotos, M.	NSG 5403	3776
11	HARVARD UNIVERSITY	Hall, C. F.	ARC	Goody, R. M.	NAS 2-9127	2442
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Flannery, B. P.	NSG 5143	2463
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5191	2466
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5226	2467
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5229	2469
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5239	2470
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5293	2471
11	HARVARD UNIVERSITY	Kupperian, J. E., Jr.	GSFC	Dupree, A. K.	NSG 5312	2472
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5370	2473
11	HARVARD UNIVERSITY	Boggess, A.	GSFC	Dupree, A. K.	NSG 5380	2474
11	HARVARD UNIVERSITY	Snoddy, W. C.	MSFC	Hughes, B. M.	NAS 5-3949	2444
11	HARVARD UNIVERSITY	Boggess, N. W.	HQ-SC	Fazio, G. G.	NGR 22-007-270	2458
11	HARVARD UNIVERSITY	Kaluzienski, L. J.	HQ-SC	Cameron, A. G.	NGR 22-007-272	245'
11	HARVARD UNIVERSITY	Brunk, W. E.	HQ-SL	Goody, R. M.	NSG 7332	2478
11	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NGR 22-007-202	2456
11	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NSG 7461	2480
11	HOUSTON BAPTIST UNIV	Potter, A. E.	JSC	Morgan, T. H.	NSG 9038	3537
11	INDIANA U-BLOOMINGTN	Hobbs, R. W.	GSFC	Burkhead, M. S.	NAS 5-22987	2136
11	INDIANA U-BLOOMINGTN	Dailey, C. C.	MSFC	Mufson, S. L.	NAS 8-33087	2137
11	IOWA STATE UNIV	Kupperian, J. E., Jr.	GSFC	Lamb, R. C.	NSG 5199	2198
11	IOWA STATE UNIV	Dailey, C. C.	MSFC	Lamb, R. C.	NAS 8-33013	2182
11	IOWA STATE UNIV	Jones, J. B., Jr.	MSFC	Lamb, R. C.	NAS 8-33334	2183
11	JOHNS HOPKINS UNIV	Bissell, E. E.	GSFC	Fastie, W. G.	NGR 21-001-001	2314
11	JOHNS HOPKINS UNIV	Kupperian, J. E., Jr.	GSFC	Moos, H. W.	NSG 5184	2319
11	JOHNS HOPKINS UNIV	Kupperian, J. E., Jr.	GSFC	Moos, H. W.	NSG 5230	2320
11	JOHNS HOPKINS UNIV	Boggess, A.	GSFC	Moos, H. W.	NSG 5255	2321
11	JOHNS HOPKINS UNIV	Kupperian, J. E., Jr.	GSFC	Moos, H. W.	NSG 5310	2323
11	JOHNS HOPKINS UNIV	Boggess, A.	GSFC	Moos, H. W.	NSG 5393	2324

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11	JOHNS HOPKINS UNIV	O'Dell, C. R.	MSFC	Fastie, W. G.	NAS 8-32903	2309
11	JOHNS HOPKINS UNIV	Kaluzienski, L. J.	HQ-SC	Davidsen, A. F.	NSG 7449	2327
11	JOHNS HOPKINS UNIV	Murphy, R. E.	HQ-SL	Feldman, P. D.	NSG 7382	2326
11	LEHIGH UNIVERSITY	Boggess, A.	GSFC	McCluskey, G. E., Jr	NSG 5386	3372
11	LEHIGH UNIVERSITY	Potter, A. E.	JSC	McCluskey, G. E., Jr.	NGR 39-007-061	3367
11	LA STATE U-SHREVEPT	Giuli, R. T.	JSC	Bankston, J. D., Jr.	NAS 9-9317	2272
11	MASS INST OF TECH	Hall, C. F.	ARC	Pettingill, G. H.	NAS 2-9473	2489
11	MASS INST OF TECH	Hall, C. F.	ARC	Counselman, C. C., III	NAS 2-9476	2490
11	MASS INST OF TECH	Hall, C. F.	ARC	Shapiro, I. I.	NAS 2-9483	2491
11	MASS INST OF TECH	Haughney, L. C.	ARC	Kleinman, S. G.	NSG 2172	2559
11	MASS INST OF TECH	Haughney, L. C.	ARC	Wright, E. L.	NSG 2263	2563
11	MASS INST OF TECH	Haughney, L. C.	ARC	Elliot, J. L.	NSG 2342	2567
11	MASS INST OF TECH	Rice, C. F.	GSFC	Clark, G. W.	NAS 5-11450	2494
11	MASS INST OF TECH	Shiue, J. C.	GSFC	Staelin, D. H.	NAS 5-23677	2498
11	MASS INST OF TECH	Corrigan, J. P.	GSFC	Clark, G. W.	NAS 5-24441	2500
11	MASS INST OF TECH	Nace, D. A.	GSFC	Weiss, R.	NAS 5-24493	2501
11	MASS INST OF TECH	Clark, T. C.	GSFC	Burke, B. F.	NAS 5-25543	2503
11	MASS INST OF TECH	Bissell, E. E.	GSFC	Rappaport, S. A.	NGR 22-009-730	2539
11	MASS INST OF TECH	Hansen, J. E.	GSFC	Rivas, F. K.	NSG 5076	2583
11	MASS INST OF TECH	Manning, H. S.	MSFC	Bradt, H. V.	NAS 8-27972	2505
11	MASS INST OF TECH	Manning, H. S.	MSFC	Lewin, W. H.	NAS 8-27975	2506
11	MASS INST OF TECH	Manning, H. S.	MSFC	Clark, G. W.	NAS 8-30752	2508
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Weiss, R.	NGR 22-009-526	2531
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Kleinman, S. G.	NSG 7186	2593
11	MASS INST OF TECH	Boggess, N. W.	HQ-SC	Weiss, R.	NSG 7328	2595
11	MASS INST OF TECH	Opp, A. G.	HQ-SC	Lewin, W. H.	NSG 7339	2599
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Pettengill, G. H.	NGR 22-009-672	2536
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Elliot, J. L.	NSG 7526	2605
11	MASS INST OF TECH	Brunk, W. E.	HQ-SL	Shapiro, I. I.	NSG 7556	2606
11	MIDDLEBURY COLLEGE	Kupperian, J. E., Jr.	GSFC	Winkler, P. F., Jr.	NSG 5198	3752
11	MIDDLEBURY COLLEGE	Jones, J. B., Jr.	MSFC	Winkler, P. F., Jr.	NAS 8-33335	3751
11	MISSISSIPPI STATE U	Atherton, J. R.	MSFC	Ingels, F. M.	NAS 8-33570	2739
11	MONTANA STATE UNIV	Roman, N. G.	HQ-SC	Nordtvedt, K., Jr.	NGR 27-001-040	2794
11	MONTGOMERY COLLEGE	Fischel, D.	GSFC	Fahey, P. P.	NAS 5-25120	2328
11	MORGAN STATE UNIV	Baker, G. R.	GSFC	Hammond, E. C., Jr.	NSG 5074	2333
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E. P.	NCA 5-64	2883
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E. P.	NCA 5-69	2884
11	NEW MEX INST MINING	Hobbs, R. W.	GSFC	Moore, E. P.	NCA 5-71	2885
11	NEW MEX INST MINING	Jones, J. B., Jr.	MSFC	Gibson, D. M.	NAS 8-33341	2882
11	NEW MEX ST U-LAS CR	Brunk, W. E.	HQ-SL	Beebe, R. F.	NGL 32-003-001	2890
11	NEW MEX ST U-LAS CR	Donn, B. D.	HQ-SL	Beebe, H. A.	NSG 7346	2891
11	NEW YORK UNIVERSITY	Boggess, A.	GSFC	Huggins, P. J.	NSG 5411	3012
11	NORTHWESTERN UNIV	Jones, J. B., Jr.	MSFC	Ulmer, M. P.	NAS 8-33010	2064
11	NORTHWESTERN UNIV	Jones, J. B., Jr.	MSFC	Ulmer, M. P.	NAS 8-33354	2065
11	NORTHWESTERN UNIV	Roman, N. G.	HQ-SC	Huang, S. S.	NGL 14-007-041	2066
11	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Slettebak, A. E.	NSG 5141	3235
11	OHIO STATE UNIV	Boggess, A.	GSFC	Wing, R. F.	NSG 5247	3236
11	OHIO STATE UNIV	Kupperian, J. E., Jr.	GSFC	Slettebak, A. E.	NSG 5299	3239
11	OHIO STATE UNIV	Boggess, A.	GSFC	Wing, R. F.	NSG 5368	3240
11	PAN AMERICAN UNIV	Mendell, W.	JSC	Glaser, F. M.	NSG 9070	3540
11	PRINCETON UNIVERSITY	Corrigan, J. P.	GSFC	Spitzer, L., Jr.	NAS 5-23576	2838
11	PRINCETON UNIVERSITY	Nace, D. A.	GSFC	Wilkinson, D. T.	NAS 5-24486	2839
11	PRINCETON UNIVERSITY	Hobbs, R. W.	GSFC	Groth, E. J.	NAS 5-25084	2840
11	PRINCETON UNIVERSITY	Boggess, A.	GSFC	Jenkins, E. B.	NSG 5248	2859
11	PRINCETON UNIVERSITY	Boggess, A.	GSFC	York, D. G.	NSG 5382	2861
11	PRINCETON UNIVERSITY	Corrigan, J. P.	GSFC	Turners, E. L.	NSG 5415	2862
11	PRINCETON UNIVERSITY	Jones, J. B., Jr.	MSFC	Cowie, L. L.	NAS 8-33345	2843
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Spitzer, L., Jr.	NGL 31-001-007	2845

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11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Bahcall, N. A.	NSG 7256	2864
11	PRINCETON UNIVERSITY	Boggess, N. W.	HQ-SC	Wilkinson, D. T.	NSG 7302	2867
11	PRINCETON UNIVERSITY	Rosendhal, J. D.	HQ-SC	Schwarzschild, M.	NSG 7379	2868
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Spitzer, L., Jr.	NSG 7600	2870
11	PRINCETON UNIVERSITY	Roman, N. G.	HQ-SC	Jenkins, E. B.	NSG 7618	2872
11	PURDUE UNIVERSITY	Rosendhal, J. D.	HQ-SC	Moffett, T. J.	NSG 7167	2173
11	RICE UNIVERSITY	Boggess, A.	GSFC	DuFour, R. J.	NSG 5364	3557
11	RICE UNIVERSITY	Parker, R. A.	JSC	DuFour, R. J.	NAS 9-15940	3550
11	RICE UNIVERSITY	Jones, J. B., Jr.	MSFC	Haymes, R. C.	NAS 8-33361	3547
11	RICE UNIVERSITY	Gray, J. W.	WFC	Anderson, H. R., Jr.	NAS 6-1667	3544
11	RUTGERS U-N BRUNSWK	Kupperian, J. E., Jr.	GSFC	Matilsky, T. A.	NSG 5195	2875
11	SO UNIV-BATON ROUGE	Estabrook, F. B.	JPL	Yang, C. H.	NGR 19-005-006	2280
11	STANFORD UNIVERSITY	Fichtel, C.	GSFC	Hofstadter, R.	NAS 5-25544	1314
11	STANFORD UNIVERSITY	Snoddy, W. C.	MSFC	Underwood, J. H.	NAS 8-32263	1315
11	STANFORD UNIVERSITY	Dailey, C. C.	MSFC	Walker, A. B., Jr.	NAS 8-33012	1319
11	STANFORD UNIVERSITY	Dailey, C. C.	MSFC	Wagoner, R. V.	NAS 8-33234	1321
11	STANFORD UNIVERSITY	Kaluzienski, L. J.	HQ-SC	Hofstadter, R.	NGR 05-020-452	1357
11	STANFORD UNIVERSITY	Kaluzienski, L. J.	HQ-SC	Sturrock, P. A.	NGR 05-020-668	1364
11	STANFORD UNIVERSITY	Roman, N. G.	HQ-SC	Will, C. M.	NSG 7204	1403
11	STANFORD UNIVERSITY	Kaluzienski, L. J	HQ-SC	Walker, A. B., Jr.	NSG 7476	1405
11	STANFORD UNIVERSITY	Brunk, W. E.	HQ-SL	Tyler, G. L.	NSG 7395	1404
11	STANFORD UNIVERSITY	Brunk, W. E.	HQ-SL	Tyler, G. L.	NSG 7561	1408
11	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Wilcox, J. M.	NGR 05-020-559	1359
11	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Petrosian, V.	NSG 7092	1402
11	STATE UNIV NY-ALBANY	Gary, G. A.	MSFC	Weinberg, J. L.	NSG 8040	3061
11	STATE UNIV NY-ALBANY	Weiler, E. J.	HQ-SC	Weinberg, J. L.	NSG 7241	3059
11	STATE U NY-STONY BRK	Kerr, A. R.	GSFC	Kao, Y. H.	NSG 5125	3080
11	STATE U NY-STONY BRK	Boggess, A.	GSFC	Caldwell, J. J.	NSG 5250	3081
11	STATE U NY-STONY BRK	O'Dell, C. R.	MSFC	Caldwell, J. J.	NAS 8-32904	3066
11	STATE U NY-STONY BRK	Fishman, G. J.	HQ-SC	Forman, M. A.	NGR 33-015-180	3076
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Owen, T.	NGR 33-015-141	3074
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Knacke, R. F.	NSG 7286	3085
11	STATE U NY-STONY BRK	Brunk, W. E.	HQ-SL	Caldwell, J. J	NSG 7320	3086
11	STATE U NY-STONY BRK	Timothy, A. F	HQ-ST	Stroke, G. W.	NSG 7003	3083
11	UNIV OF ARIZONA	Hall, C. F.	ARC	Gehrels, A. M.	NAS 2-6265	1092
11	UNIV OF ARIZONA	Hall, C. F.	ARC	Tomasko, M. G.	NAS 2-9486	1093
11	UNIV OF ARIZONA	McCreight, C. R.	ARC	Rieke, G. H.	NAS 2-10227	1096
11	UNIV OF ARIZONA	Haughney, L. C.	ARC	Larson, H. P.	NGR 03-002-332	1120
11	UNIV OF ARIZONA	Haughney, L. C.	ARC	Harvey, P. M	NGR 03-002-390	1124
11	UNIV OF ARIZONA	Black, D. C.	ARC	Serkowski, K. M	NSG 2205	1126
11	UNIV OF ARIZONA	Wainscott, F. H.	GSFC	Smith, B. A.	NAS 5-24308	1097
11	UNIV OF ARIZONA	Liberatore, F. J.	GSFC	Weymann, R. J.	NAS 5-25733	1099
11	UNIV OF ARIZONA	Boggess, A.	GSFC	Imhoff, C. L.	NSG 5235	1130
11	UNIV OF ARIZONA	Boggess, A.	GSFC	Tomasko, M. G.	NSG 5249	1131
11	UNIV OF ARIZONA	Parnell, T. A.	MSFC	Benton, E. V	NAS 8-31192	1100
11	UNIV OF ARIZONA	Jones, J. B., Jr.	MSFC	Strittmatter, P. A.	NAS 8-33351	1103
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SC	Low, F. J.	NGR 03-002-269	1119
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SC	Hoffman, W. F.	NGR 03-002-371	1122
11	UNIV OF ARIZONA	Opp, A. G.	HQ-SC	Jokipii, J. R.	NSG 7101	1139
11	UNIV OF ARIZONA	Roman, N. G.	HQ-SC	Gehrels, A. M.	NSG 7358	1146
11	UNIV OF ARIZONA	Boggess, N. W.	HQ-SC	Craine, E. R.	NSG 7368	1147
11	UNIV OF ARIZONA	Weiler, E. J.	HQ-SC	Tapia, S. F.	NSG 7574	1156
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Unavailable	NASW 3262	1105
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Smith, B. A.	NGL 03-002-002	1110
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Gehrels, A.	NGL 03-002-081	1112
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Cox, E. L.	NGL 03-002-122	1113
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Gehrels, A. M.	NGR 03-002-219	1118
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Hubbard, W. B.	NSG 7045	1137

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11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Fink, U. W.	NSG 7070	1138
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Rieke, G. H.	NSG 7114	1140
11	UNIV OF ARIZONA	Murphy, R. E.	HQ-SL	Hsieh, K. C.	NSG 7374	1148
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Zellner, B. H.	NSG 7502	1152
11	UNIV OF ARIZONA	Brunk, W. E.	HQ-SL	Brown, R. A.	NSG 7634	1160
11	UNIV ARKANSAS-FAYETV	Roman, N. G.	HQ-SC	Hughes, R. H.	NSG 7106	1166
11	UNIV CALIF-BERKELEY	Erickson, E. F.	ARC	Silk, J. I.	NCA 2-50904	1436
11	UNIV CALIF-BERKELEY	Haughney, L. C.	ARC	Townes, C. H.	NGR 05-003-511	1452
11	UNIV CALIF-BERKELEY	Haughney, L. C.	ARC	Smoot, G. F.	NSG 2344	1461
11	UNIV CALIF-BERKELEY	Willis, S. E.	GSFC	Bowyer, C. S.	NAS 5-24189	1414
11	UNIV CALIF-BERKELEY	Willis, S. E.	GSFC	Bowyer, C. S.	NAS 5-24445	1415
11	UNIV CALIF-BERKELEY	Nice, D. A.	GSFC	Smoot, G.	NAS 5-25007	1416
11	UNIV CALIF-BERKELEY	Hobbs, R. W.	GSFC	King, I.	NAS 5-25070	1417
11	UNIV CALIF-BERKELEY	Porreca, G.	GSFC	Anderson, D. A.	NAS 5-25876	1419
11	UNIV CALIF-BERKELEY	Porreca, G.	GSFC	Anderson, D. A.	NAS 5-25892	1420
11	UNIV CALIF-BERKELEY	Bissell, E. E.	GSFC	Bowyer, C. S.	NGR 05-003-450	1447
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Bowyer, C. S.	NSG 5227	1465
11	UNIV CALIF-BERKELEY	Kupperian, J. E., Jr.	GSFC	Bowyer, C. S.	NSG 5292	1467
11	UNIV CALIF-BERKELEY	Boggess, A.	GSFC	Spinrad, H	NSG 5360	1468
11	UNIV CALIF-BERKELEY	Marmann, R.	MSFC	Bowyer, C. S.	NAS 8-32577	1422
11	UNIV CALIF-BERKELEY	Dailey, C. C.	MSFC	Anderson, K. A.	NAS 8-33011	1423
11	UNIV CALIF-BERKELEY	Jones, J. B., Jr.	MSFC	Bowyer, C. S.	NAS 8-33349	1424
11	UNIV CALIF-BERKELEY	Jones, J. B., Jr.	MSFC	McKee, C.	NAS 8-33356	1425
11	UNIV CALIF-BERKELEY	Barnes, J. B.	MSFC	Anderson, K. A.	NAS 8-33357	1426
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Townes, C. H.	NGL 05-003-272	1440
11	UNIV CALIF-BERKELEY	Kaluzienski, L. J.	HQ-SC	Price, P. B.	NGR 05-003-376	1446
11	UNIV CALIF-BERKELEY	Opp, A. G.	HQ-SC	Heckman, H. H.	NGR 05-003-513	1453
11	UNIV CALIF-BERKELEY	Kaluzienski, L. J	HQ-SC	Buffington, A.	NGR 05-003-553	1454
11	UNIV CALIF-BERKELEY	Weiler, E. J.	HQ-SC	Silk, J. I.	NGR 05-003-578	1455
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Richards, P. L.	NSG 7205	1471
11	UNIV CALIF-BERKELEY	Boggess, N. W.	HQ-SC	Smoot, G.	NSG 7455	1477
11	UNIV CALIF-BERKELEY	Kaluzienski, L. J.	HQ-SC	Anderson, K. A.	NSG 7592	1480
11	UNIV CALIF-BERKELEY	Brunk, W. E.	HQ-SL	Townes, C. H.	NGR 05-003-452	1449
11	UNIV CALIF-BERKELEY	Brunk, W. E	HQ-SL	Welch, W. J.	NSG 7152	1470
11	UNIV CALIF-BERKELEY	Brunk, W. E.	HQ-SL	Townes, C. H.	NSG 7635	1481
11	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Kaula, W. H.	NAS 2-9128	1501
11	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Schubert, G	NAS 2-9131	1502
11	UNIV CALIF-L ANGELES	Liberatore, F. J.	GSFC	Jura, M. A.	NAS 5-25657	1507
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr	GSFC	Peters, C. J.	NSG 5056	1539
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Margon, B. H.	NSG 5165	1540
11	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr.	GSFC	Jura, M. A	NSG 5169	1541
11	UNIV CALIF-L ANGELES	Boggess, A.	GSFC	Plavec, M.	NSG 5272	1544
11	UNIV CALIF-L ANGELES	Boggess, A.	GSFC	Aller, L. H	NSG 5358	1546
11	UNIV CALIF-L ANGELES	Boggess, A.	GSFC	Jura, M. A	NSG 5377	1547
11	UNIV CALIF-L ANGELES	Jones, J. B., Jr.	MSFC	Margon, B. H.	NAS 8-33353	1509
11	UNIV CALIF-L ANGELES	Kaluzienski, L. J.	HQ-SC	Kennel, C. F.	NSG 7341	1557
11	UNIV CALIF-L ANGELES	Weiler, E. J.	HQ-SC	Jura, M. A.	NSG 7621	1566
11	UNIV CALIF-RIVERSIDE	Kaluzienski, L. J.	HQ-SC	White, R. S.	NGR 05-008-022	1567
11	UNIV CALIF-SAN DIEGO	Hall, C. F.	ARC	Fillius, R. W.	NAS 2-6552	1568
11	UNIV CALIF-SAN DIEGO	Haughney, L. C.	ARC	Willner, S. P.	NGR 05-005-055	1593
11	UNIV CALIF-SAN DIEGO	Stouffer, C. G.	GSFC	Tabakoff, W.	NAS 5-22375	1571
11	UNIV CALIF-SAN DIEGO	Bartlett, R. O.	GSFC	McIlwain, C. E.	NAS 5-23481	1572
11	UNIV CALIF-SAN DIEGO	White, R. A.	GSFC	Harms, R. J.	NAS 5-24463	1574
11	UNIV CALIF-SAN DIEGO	Shannon, J. L.	GSFC	Beaver, E. A.	NAS 5-24466	1575
11	UNIV CALIF-SAN DIEGO	Shannon, J. L.	GSFC	Beaver, E. A.	NAS 5-25054	1576
11	UNIV CALIF-SAN DIEGO	Manning, H. S.	MSFC	Peterson, L. E.	NAS 8-27974	1579
11	UNIV CALIF-SAN DIEGO	Opp, A. G.	HQ-SC	Gould, R. J.	NGL 05-005-004	1584
11	UNIV CALIF-SAN DIEGO	Rosendhal, J. D.	HQ-SC	McIlwain, C. E.	NGR 05-009-188	1595

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11	UNIV CALIF-SAN DIEGO	Kaluzienski, L. J.	HQ-SC	Rothschild, R. E.	NSG 7294	1616
11	UNIV CALIF-SAN DIEGO	Burbidge, E.	HQ-SC	Burbidge, M.	NSG 7377	1617
11	UNIV CALIF-SAN DIEGO	Kaluzienski, L. J.	HQ-SC	Lingenfelter, R. E.	NSG 7541	1620
11	UNIV CALIF-SAN DIEGO	Murphy, R. E.	HQ-SL	Alfven, H.	NGR 05-009-110	1594
11	UNIV CALIF-S CRUZ	Boggess, A.	GSFC	Herbig, G. H.	NSG 5361	1661
11	UNIV CALIF-S CRUZ	Jones, J. B., Jr.	MSFC	Davies, R. L.	NAS 8-33347	1659
11	UNIV CALIF-S CRUZ	Boggess, N. W.	HQ-SC	Rank, D. M.	NGR 05-061-015	1660
11	UNIV CALIF-S CRUZ	Roman, N. G.	HQ-SC	Miller, J. S.	NSG 7503	1662
11	UNIV OF CHICAGO	Hall, C. F.	ARC	Simpson, J. A.	NAS 2-6551	2074
11	UNIV OF CHICAGO	Erickson, E. F.	ARC	Harper, D. A., Jr.	NCA 2-108901	2080
11	UNIV OF CHICAGO	Smith, B. F.	ARC	Miller, R. H.	NCA 2-108902	2081
11	UNIV OF CHICAGO	Haughney, L. C.	ARC	Harper, D. A., Jr.	NGR 14-001-227	2095
11	UNIV OF CHICAGO	Kupperian, J. E., Jr.	GSFC	Simpson, J. A.	NSG 5202	2097
11	UNIV OF CHICAGO	Kupperian, J. E., Jr.	GSFC	Simpson, J. A.	NSG 5291	2098
11	UNIV OF CHICAGO	Kupperian, J. E., Jr.	GSFC	Simpson, J. A.	NSG 5311	2099
11	UNIV OF CHICAGO	Boggess, A.	GSFC	Frisch, P. C.	NSG 5405	2101
11	UNIV OF CHICAGO	Jones, J. B., Jr.	MSFC	Meyer, P.	NAS 8-33350	2079
11	UNIV OF CHICAGO	Kaluzienski, L. J.	HQ-SC	Parker, E. N.	NGL 14-001-001	2082
11	UNIV OF CHICAGO	Opp, A. G.	HQ-SC	Meyer, P.	NGL 14-001-005	2083
11	UNIV OF CHICAGO	Rosendhal, J. D.	HQ-SC	Hobbs, L. M.	NGR 14-001-147	2092
11	UNIV OF CHICAGO	Kaluzienski, L. J.	HQ-SL	Simpson, J. A.	NGL 14-001-006	2084
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Conti, P. S.	NAS 5-22833	1744
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Linsky, J. L.	NAS 5-23274	1745
11	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Lillie, C. F.	NGR 06-003-176	1746
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Linsky, J. L.	NSG 5211	1747
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Snow, T. P., Jr.	NSG 5246	1765
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Snow, T. P., Jr.	NSG 5300	1769
11	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Snow, T. P., Jr.	NSG 5303	1770
11	UNIV COLORADO-BOLDR	Kupperian, J. E., Jr.	GSFC	Snow, T. P., Jr.	NSG 5355	1772
11	UNIV COLORADO-BOLDR	Boggess, A.	GSFC	Shull, J. M.	NSG 5365	1773
11	UNIV COLORADO-BOLDR	Dailey, C. C.	MSFC	Linsky, J. L.	NAS 8-33084	1749
11	UNIV COLORADO-BOLDR	Jones, J. B., Jr.	MSFC	Haisch, B. M.	NAS 8-33333	1750
11	UNIV COLORADO-BOLDR	Jones, J. B., Jr.	MSFC	McCray, R.	NAS 8-33338	1751
11	UNIV COLORADO-BOLDR	Jones, J. B., Jr.	MSFC	Ayres, T. R.	NAS 8-33342	1752
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Lillie, C. F.	NGR 06-003-179	1759
11	UNIV COLORADO-BOLDR	Kaluzienski, L. J.	HQ-SC	McCray, R.	NSG 7128	1775
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Conti, P. S.	NSG 7430	1783
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Snow, T. P., Jr.	NSG 7477	1786
11	UNIV COLORADO-BOLDR	Weiler, E. J.	HQ-SC	Snow, T. P., Jr.	NSG 7626	1791
11	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Ashby, N.	NSG 7637	1792
11	UNIV COLORADO-DENVER	Boggess, A.	GSFC	Lane, A. L.	NSG 5394	1795
11	UNIV DC-MT VERNON SQ	Webster, W. H., Jr.	GSFC	Nottingham, W. C.	NGR 09-050-003	1900
11	UNIV DC-VAN NESS	Hobbs, R. W.	GSFC	Kasten, R.	NCA 5-95	1904
11	UNIV OF DELAWARE	Kupperian, J. E., Jr.	GSFC	Shipman, H. L.	NSG 5144	1838
11	UNIV OF DENVER	Kupperian, J. E., Jr.	GSFC	Everhart, E.	NSG 5135	1807
11	UNIV OF DENVER	Boggess, A.	GSFC	Lesh, J. R.	NSG 5367	1808
11	UNIV OF FLORIDA	Roman, N. G.	HQ-SC	Carr, T. D.	NSG 7143	1949
11	UNIV OF HAWAII-MANOA	White, W. W.	GSFC	Cushman, S. F.	NAS 5-25181	2027
11	UNIV OF HAWAII-MANOA	Bissell, E. E.	GSFC	Jefferies, J. T.	NGR 12-001-075	2037
11	UNIV OF HAWAII-MANOA	Kupperian, J. E., Jr.	GSFC	Boesgarrd, A. M.	NSG 5231	2042
11	UNIV OF HAWAII-MANOA	Weir, J. F.	HQ-BX	Jefferies, J. T.	NASW 2801	2032
11	UNIV OF HAWAII-MANOA	Strickland, A. T.	HQ-SL	Jefferies, J. T.	NASW 2326	2031
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NASW 3159	2033
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	Jefferies, J. T.	NGL 12-001-057	2036
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	McCord, T. B.	NSG 7310	2046
11	UNIV OF HAWAII-MANOA	Brunk, W. E.	HQ-SL	McCord, T. B.	NSG 7323	2048
11	UNIV OF HAWAII-MANOA	Bohlin, J. D.	HQ-ST	Jefferies, J. T.	NGL 12-001-011	2034
11	UNIV ILLINOIS-URBANA	Donn, B. D.	GSFC	Snyder, L. E.	NSG 5278	2130

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11	UNIV ILLINOIS-URBANA	Kupperian, J. E., Jr.	GSFC	Crutcher, R. M.	NSG 5294	2131
11	UNIV ILLINOIS-URBANA	Opp, A. G.	HQ-SC	Pines, D.	NSG 7598	2135
11	UNIV ILLINOIS-URBANA	Brunk, W. E.	HQ-SL	Dickel, J. R.	NGR 14-005-176	2117
11	UNIV OF IOWA	Hall, C. F.	ARC	VanAllen, J. A.	NAS 2-6553	2200
11	UNIV OF IOWA	Gemmell, J. D.	GSFC	Tabakoff, W.	NAS 5-11279	2202
11	UNIV OF IOWA	Brunk, W. E.	HQ-SL	Neff, J. S.	NSG 7412	2218
11	UNIV MARYLAND-BALT	Roman, N. G.	HQ-SC	Misner, C. W.	NGR 21-002-010	2335
11	UNIV MARYLAND-COL PK	Ogilvie, K. W.	GSFC	Coplan, M. A.	NAS 5-25472	2343
11	UNIV MARYLAND-COL PK	Fischel, D.	GSFC	Rosenfeld, A.	NCA 5-20	2355
11	UNIV MARYLAND-COL PK	Hobbs, R. W.	GSFC	Currie, D. G.	NCA 5-24	2356
11	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-26	2357
11	UNIV MARYLAND-COL PK	Klinglesmith, D. A.	GSFC	Rosenfeld, A.	NCA 5-27	2358
11	UNIV MARYLAND-COL PK	Hobbs, R. W.	GSFC	Tole, J. R.	NCC 5 9	2363
11	UNIV MARYLAND-COL PK	Ramaty, R	GSFC	Wall, N. S.	NSG 5298	2396
11	UNIV MARYLAND-COL PK	Boggess, A.	GSFC	Harrington, J. P.	NSG 5390	2400
11	UNIV MARYLAND-COL PK	Boggess, A.	GSFC	Bell, R. A.	NSG 5399	2401
11	UNIV MARYLAND-COL PK	Corrigan, J. P.	GSFC	Wu, C. S.	NSG 5408	2403
11	UNIV MARYLAND-COL PK	Jones, J. B., Jr	MSFC	Scott, J. S.	NAS 8-33329	2349
11	UNIV MARYLAND-COL PK	Jones, J. B., Jr	MSFC	Erickson, W. C	NAS 8-33346	2350
11	UNIV MARYLAND-COL PK	Jones, J. B., Jr.	MSFC	Wilson, A. S	NAS 8-33358	2351
11	UNIV MARYLAND-COL PK	Kaluzienski, L. J	HQ-SC	Earl, J. A	NGR 21-002-066	2366
11	UNIV MARYLAND-COL PK	Roman, N. G.	HQ-SC	Griem, H. R	NGR 21-002-073	2367
11	UNIV MARYLAND-COL PK	Kaluzienski, L. J	HQ-SC	Gloeckler, G.	NGR 21-002-224	2370
11	UNIV MARYLAND-COL PK	Opp, A. G.	HQ-SC	Rose, W. K.	NSG 7252	2406
11	UNIV MARYLAND-COL PK	Rosendhal, J. D.	HQ-SC	Currie, D. G	NSG 7284	2408
11	UNIV MARYLAND-COL PK	Kaluzienski, L. J.	HQ-SC	Scott, J. S.	NSG 7555	2416
11	UNIV MARYLAND-COL PK	Brunk, W. E.	HQ-SL	A'Hearn, M. F	NSG 7322	2409
11	UNIV OF MASS-AMHERST	Hall, C. F.	ARC	McGill, G. E.	NAS 2-9129	2612
11	UNIV OF MASS-AMHERST	Brunk, W. E.	HQ-SL	Irvine, W. M.	NGL 22-010-023	2613
11	UNIV MICH-ANN ARBOR	Hall, C. F.	ARC	Donahue, T. M	NAS 2-9126	2631
11	UNIV MICH-ANN ARBOR	Hall, C. F.	ARC	Nagy, A. F	NAS 2-9130	2632
11	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-24454	2640
11	UNIV MICH-ANN ARBOR	Kupperian, J. E., Jr	GSFC	Donahue, T. M.	NSG 5206	2681
11	UNIV MICH-ANN ARBOR	Kupperian, J. E., Jr.	GSFC	Atreya, S. K.	NSG 5232	2682
11	UNIV MICH-ANN ARBOR	Boggess, A.	GSFC	Kirshner, R	NSG 5366	2685
11	UNIV MICH-ANN ARBOR	Rosendhal, J. D	HQ-SC	Hiltner, W. A	NGR 23-005-464	2662
11	UNIV MICH-ANN ARBOR	Weiler, E. J.	HQ-SC	Hegyi, D. J	NSG 7608	2692
11	UNIV MICH-ANN ARBOR	Bonlin, J. D.	HQ-ST	Mohler, O. C.	NGL 23-005-275	2657
11	U MINN-MNPLS-ST PAUL	Gemmell, J. D	GSFC	Jee, W. S.	NAS 5-11310	2698
11	U MINN-MNPLS-ST PAUL	Stone, R. G.	GSFC	Kellogg, P. J.	NAS 5-25151	2701
11	U MINN-MNPLS-ST PAUL	Stone, R. G	GSFC	Kellogg, P. J	NAS 5-25753	2703
11	U MINN-MNPLS-ST PAUL	Boggess, A.	GSFC	Black, J. H	NSG 5237	2716
11	U MINN-MNPLS-ST PAUL	Boggess, A.	GSFC	Davidson K.	NSG 5397	2718
11	U MINN-MNPLS-ST PAUL	Talley, D.	MSFC	Waddington, C. J.	NAS 8-27977	2704
11	U MINN-MNPLS-ST PAUL	Kaluzienski, L. J.	HQ-SC	Waddington, C. J	NGR 24-005-050	2709
11	U MINN-MNPLS-ST PAUL	Boggess, N. W.	HQ-SC	Ney, E.	NSG 2014	2712
11	UNIV MO-ST LOUIS	Kupperian, J. E., Jr.	GSFC	Schwartz, R. D.	NSG 5151	2774
11	UNIV MO-ST LOUIS	Boggess, A.	GSFC	Lamb, S. A.	NSG 5400	2775
11	UNIV NEBRASKA-LINCLN	Kupperian, J. E., Jr.	GSFC	Schmidt, E. G.	NSG 5332	2800
11	UNIV NEBRASKA-LINCLN	Boggess, A.	GSFC	Schmidt, E. G.	NSG 5391	2801
11	UNIV NEW HAMP-DURHAM	Davis, M. A.	GSFC	Lockwood, J. A.	NAS 5-25420	2822
11	UNIV NEW HAMP-DURHAM	Kaluzienski, L. J.	HQ-SC	Chupp, E. L.	NGL 30-002-021	2826
11	UNIV NEW HAMP-DURHAM	Fishman, G. J.	HQ-SC	Webber, W. R.	NGR 30-002-052	2827
11	UNIV NEW HAMP-DURHAM	Kaluzienski, L. J.	HQ-SC	Lockwood, J. A.	NSG 7481	2831
11	UNIV OF NOTRE DAME	Haggard, J. B.	LERC	Kanury, M.	NAS 3-21018	2175
11	UNIV OKLAHOMA-NORMAN	Kupperian, J. E., Jr.	GSFC	Herczeg, T. J.	NSG 5257	3315
11	UNIV OKLAHOMA-NORMAN	Jones, J. B., Jr.	MSFC	Chincarini, G. L.	NAS 8-33330	3310
11	UNIV OREGON-EUGENE	Roman, N. G.	HQ-SC	Zimmerman, R. L.	NSG 7639	3335

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11	UNIV OREGON-EUGENE	Brunk, W. E.	HQ-SL	Kemp, J. C.	NSG 7531	3334
11	UNIV OF PENNSYLVANIA	Boggess, A.	GSFC	Koch, R. H.	NSG 5296	3421
11	UNIV OF PENNSYLVANIA	Dailey, C. C.	MSFC	Shen, B. S.	NAS 8-33088	3425
11	UNIV OF PENNSYLVANIA	Jones, J. B., Jr.	MSFC	Shen, B. S.	NAS 8-33336	[illegible]
11	UNIV OF PITTSBURGH	Black, D. C.	ARC	Goglia, G. L.	NSG 2117	[illegible]
11	UNIV OF PITTSBURGH	Boggess, A.	GSFC	Hapke, B. W.	NSG 5362	3447
11	UNIV OF PITTSBURGH	Dwornik, S. E.	HQ-SL	Hapke, B. W.	NSG 7147	3449
11	UNIV OF ROCHESTER	Haughney, L. C.	ARC	Pipher, J. L.	NSG 2343	3098
11	UNIV OF ROCHESTER	Kupperian, J. E., Jr	GSFC	Savedoff, M. P	NSG 5329	3099
11	UNIV OF ROCHESTER	Kupperian, J. E., Jr.	GSFC	Savedoff, M. P.	NSG 5354	3100
11	UNIV OF ROCHESTER	Jones, J. B., Jr.	MSFC	Duthie, J. G	NAS 8-33328	3096
11	UNIV OF SANTA CLARA	Erickson, E. F.	ARC	Fraser, G.	NCA 2-685908	1682
11	UNIV OF SANTA CLARA	Dyal, P.	ARC	Barker, W. A.	NCA 2-685909	1683
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Judge, D. L.	NAS 2-6558	1689
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Intriligator, D. S.	NAS 2-7969	1690
11	UNIV OF SOUTHERN CAL	Hall, C. F.	ARC	Intriligator, D. S.	NAS 2-9478	1691
11	UNIV OF SOUTHERN CAL	Kupperian, J. E., Jr.	GSFC	Peters, G. J.	NSG 5356	1704
11	UNIV TENNESSEE-KNOXV	Harris, J. W.	JSC	Taylor, L. A.	NGL 43-001-140	3511
11	UNIV TEXAS-AUSTIN	Haughney, L. C.	ARC	Evans, N. J., II	NSG 2345	3666
11	UNIV TEXAS-AUSTIN	Liberatore, F. J.	GSFC	Trafton, L. M.	NAS 5-25656	3641
11	UNIV TEXAS-AUSTIN	Kupperian, J. E., Jr	GSFC	Smith, M. A	NSG 5167	3671
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	VandenBout, P. A.	NSG 5233	3672
11	UNIV TEXAS-AUSTIN	Kupperian, J. E., Jr.	GSFC	Smith, M. A.	NSG 5309	3673
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	Parsons, S. B.	NSG 5328	3674
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	Wray, J. D.	NSG 5337	3675
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	Lambert, D. L.	NSG 5379	3676
11	UNIV TEXAS-AUSTIN	Boggess, A.	GSFC	Wills, B. J.	NSG 5387	3677
11	UNIV TEXAS-AUSTIN	Potter, A. E.	JSC	Barnes, T.	NAS 9-15093	3648
11	UNIV TEXAS-AUSTIN	Snoddy, W. C.	MSFC	Henize, K. G.	NAS 8-31459	3643
11	UNIV TEXAS-AUSTIN	O'Dell, C. R.	MSFC	Lambert, D. L.	NAS 8-32905	3644
11	UNIV TEXAS-AUSTIN	O'Dell, C. R.	MSFC	Jefferys, W. H.	NAS 8-32906	3645
11	UNIV TEXAS-AUSTIN	Roman, N. G.	HQ-SC	Shield, G. A.	NSG 7232	3680
11	UNIV TEXAS-AUSTIN	Rosendhal, J. D.	HQ-SC	Bengtson, R. D.	NSG 7347	3682
11	UNIV TEXAS-AUSTIN	Roman, N. G.	HQ-SC	Henize, K. G.	NSG 7371	3684
11	UNIV TEXAS-AUSTIN	Boggess, N. W.	HQ-SC	Evans, N. J., II	NSG 7381	3685
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Wilson, W. J.	NGL 44-012-006	3653
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Douglas, J. N.	NGL 44-012-055	3654
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Smith, H. J	NGR 44-012-152	3655
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Mulholland, J. D.	NGR 44-012-282	3657
11	UNIV TEXAS-AUSTIN	Brunk, W. E.	HQ-SL	Jefferys, W. H.	NSG 7408	3686
11	UNIV OF TOLEDO	Kupperian, J. E., Jr.	GSFC	Molnar, M. R.	NSG 5183	3280
11	UNIV OF TOLEDO	Kupperian, J. E., Jr.	GSFC	Bopp, B. W.	NSG 5207	3281
11	UNIV OF TOLEDO	Boggess, A.	GSFC	Morrison, N. D	NSG 5359	3282
11	UNIV OF TOLEDO	Boggess, A.	GSFC	Witt, A. N	NSG 5388	3283
11	UNIV OF TOLEDO	Rosendhal, J. D.	HQ-SC	Witt, A. N	NSG 7041	3284
11	UNIV OF TOLEDO	Roman, N. G.	HQ-SC	Molnar, M. R.	NSG 7138	3285
11	UNIV OF TOLEDO	Rosendhal, J. D	HQ-SC	Witt, A. N.	NSG 7431	3288
11	UNIV OF TOLEDO	Roman, N. G.	HQ-SC	Molnar, M. R.	NSG 7475	3289
11	UNIV OF TOLEDO	Weiler, E. J.	HQ-SC	Witt, A. N	NSG 7620	3290
11	UNIV OF TOLEDO	Murphy, R. E.	HQ-SL	Delsemme, A. H.	NSG 7301	3286
11	UNIV OF VIRGINIA	Wilson, L.	GSFC	O'connell, R. W.	NAS 5-22346	3844
11	UNIV OF VIRGINIA	Humes, D. H.	LARC	Singer, S. F.	NSG 1427	3855
11	UNIV OF VIRGINIA	Jones, J. B., Jr.	MSFC	Thuan, T. X.	NAS 8-33327	3848
11	UNIV OF VIRGINIA	Jones, J. B., Jr.	MSFC	Sarazin, C. L.	NAS 8-33348	3849
11	UNIV OF VIRGINIA	Roman, N. G.	HQ-SC	Frederick, L. W.	NGL 47-005-066	3850
11	UNIV OF VIRGINIA	Brunk, W. E.	HQ-SL	Ianna, P. A.	NSG 7364	3865
11	UNIV OF WASHINGTON	Kupperian, J. E., Jr.	GSFC	Wallerstein, G.	NSG 5142	3944
11	UNIV OF WASHINGTON	Boggess, A.	GSFC	Bohm-Vitense, E.	NSG 5240	3945

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11	UNIV OF WASHINGTON	Boggess, A.	GSFC	Wallerstein, G.	NSG 5374	3947
11	UNIV OF WASHINGTON	Boggess, A.	GSFC	Szkody, P.	NSG 5395	3948
11	UNIV OF WASHINGTON	Boggess, A.	GSFC	Bohm-Vitense, E.	NSG 5398	3949
11	UNIV OF WASHINGTON	Corrigan, J. P.	GSFC	Lin, C. S.	NSG 5410	3950
11	UNIV OF WASHINGTON	Jones, J. B., Jr.	MSFC	Szkody, P.	NAS 8-33337	3927
11	UNIV OF WASHINGTON	Jones, J. B., Jr.	MSFC	Boynton, P. E.	NAS 8-33344	3928
11	UNIV OF WASHINGTON	Jones, J. B., Jr.	MSFC	Boynton, P. E.	NAS 8-33360	3929
11	UNIV OF WASHINGTON	Kaluzienski, L. J.	HQ-SC	Lord, J. J.	NSG 7318	3955
11	UNIV OF WASHINGTON	Brunk, W. E.	HQ-SL	Greene, T. F.	NGR 48-002-142	3934
11	UNIV WISC-MADISON	Wainscott, F. H.	GSFC	Anderson, C. M.	NAS 5-22349	3972
11	UNIV WISC-MADISON	White, R. A.	GSFC	Bless, R. C.	NAS 5-24487	3978
11	UNIV WISC-MADISON	Sours, W. T.	GSFC	Code, A. D.	NAS 5-25487	3982
11	UNIV WISC-MADISON	Vitagliano, H. D.	GSFC	Savage, B. D.	NAS 5-25714	3984
11	UNIV WISC-MADISON	Bissell, E. E.	GSFC	Code, A. D.	NGL 50-002-013	3989
11	UNIV WISC-MADISON	Bissell, E. E.	GSFC	Kraushaar, W. L.	NGL 50-002-044	3990
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Savage, B. D.	NSG 5100	3997
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Cassinelli, J. P.	NSG 5180	3999
11	UNIV WISC-MADISON	Kupperian, J. E., Jr.	GSFC	Savage, B. D	NSG 5181	4000
11	UNIV WISC-MADISON	Boggess, A.	GSFC	Savage, B. D.	NSG 5241	4002
11	UNIV WISC-MADISON	Boggess, A.	GSFC	Doherty, L. R.	NSG 5242	4003
11	UNIV WISC-MADISON	Boggess, A.	GSFC	Cassinelli, J. P.	NSG 5363	4006
11	UNIV WISC-MADISON	Jones, J. B., Jr.	MSFC	Cassinelli, J. P.	NAS 8-33340	3986
11	UNIV WISC-MADISON	Weiler, E. J.	HQ-SC	Williamson, P. R.	NSG 7050	4007
11	VANDERBILT UNIVERSTY	Roman, N. G.	HQ-SC	Weedman, D. W.	NSG 7343	3523
11	VANDERBILT UNIVERSTY	Roman, N. G.	HQ-SC	Hall, D.	NSG 7463	3524
11	VANDERBILT UNIVERSTY	Roman, N. G.	HQ-SC	Hall, D.	NSG 7543	3525
11	VILLANOVA UNIVERSITY	Boggess, A.	GSFC	Sion, E. M.	NSG 5375	3452
11	VIRGINIA POLY INST	Kupperian, J. E., Jr.	GSFC	Dennison, B. K.	NSG 5221	3916
11	VIRGINIA POLY INST	Jones, J. B., Jr.	MSFC	Dennison, B. K.	NAS 8-33359	3874
11	VIRGINIA POLY INST	Brunk, W. E.	HQ-SL	McGee, H. A.	NGL 47-004-080	3882
11	WASHINGTON ST UNIV	Boggess, A.	GSFC	Lutz, J. H.	NSG 5383	3963
11	WASHINGTON UNIVERSTY	Kupperian, J. E., Jr.	GSFC	Smith, W. H	NSG 5187	2785
11	WASHINGTON UNIVERSTY	Talley, D.	MSFC	Barcus, J.	NAS 8-27976	2779
11	WASHINGTON UNIVERSTY	Kaluzienski, L. J.	HQ-SC	Israel, M. H.	NGR 26-008-001	2782
11	WASHINGTON UNIVERSTY	Weiler, E. J.	HQ-SC	Smith, W. H.	NSG 7372	2789
11	WASHINGTON UNIVERSTY	Brunk, W. E.	HQ-SL	Smith, W. H.	NSG 7334	2788
11	WESTRN KENTUCKY UNIV	Boggess, A.	GSFC	Hackney, R. L.	NSG 5238	2270
11	WHEATON COLLEGE	Boggess, A.	GSFC	Barker, T.	NSG 5376	2620
11	YALE UNIVERSITY	Eby, P. B.	MSFC	Parker, P. D.	NAS 8-33572	1821
12	ADELPHI UNIVERSITY	Buell, D. A.	ARC	Steinmetz, W. J.	NSG 2088	2903
12	ARKANSAS STATE UNIV	Burkhart, J. A.	LERC	Bennett, J. E.	NSG 3249	1161
12	ATLANTA UNIVERSITY	Kent, M. I.	MSFC	Reed, J. L.	NSG 8019	1968
12	BOWIE STATE COLLEGE	Gross, F. C.	GSFC	Rock, M.	NSG 5009	2299
12	CALIF INST OF TECH	Harris, J. W.	JSC	Wasserburg, G. J.	NGL 05-002-188	1191
12	CASE WESTERN RESERVE	Quattrone, P. D.	ARC	Yeager, E.	NGR 36-027-050	3150
12	CASE WESTERN RESERVE	Donn, B. D.	GSFC	Anderson, A. B.	NSG 5392	3186
12	CASE WESTERN RESERVE	Riley, T. J.	LERC	Angus, J. C.	NAS 3-21965	3143
12	CASE WESTERN RESERVE	Kohl, F. J.	LERC	Mateescu, G. D.	NSG 3009	3155
12	CASE WESTERN RESERVE	Serafini, T. T.	LERC	Koenig, J. L.	NSG 3140	3163
12	CASE WESTERN RESERVE	Lauver, R. W.	LERC	Ritchey, W. M.	NSG 3142	3164
12	CASE WESTERN RESERVE	Lauver, R. W.	LERC	Ritchey, W. M.	NSG 3241	3173
12	CASE WESTERN RESERVE	Lauver, R. W.	LERC	Ishida, H	NSG 3272	3179
12	CASE WESTERN RESERVE	Hsu, L. C.	LERC	Koenig, J. L.	NSG 3276	3180
12	CASE WESTERN RESERVE	Jones, W. R., Jr.	LERC	Cahan, B. D.	NSG 3288	3183
12	CASE WESTERN RESERVE	Schafer, C. F.	MSFC	Ostrach, S.	NAS 8-31907	3146
12	CATHOLIC UNIVERSITY	Payne, W. A.	GSFC	Hunt, J. B.	NSG 5173	1842
12	CLARK COLLEGE	Whitten, R. C.	ARC	Veluri, V. R.	NSG 2143	1969
12	CLEVELAND STATE UNIV	Gordon, W. A.	LERC	Megargle, R.	NSG 3308	3198

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12	COLLEGE OF WM & MARY	Burks, H. D.	LARC	Kranbuehl, D. E.	NSG 1095	3763
12	COLORADO SCH OF MINE	Antoine, A. C.	LERC	Daniel, S. R.	NSG 3122	1708
12	COPPIN STATE COLLEGE	Ford, F. E.	GSFC	McDermott, P. P.	NSG 5051	2301
12	CORNELL UNIVERSITY	Young, R. S.	HQ-SB	Sagan, C. E.	NGR 33-010-101	2960
12	DREXEL UNIVERSITY	Torres, A. L.	WFC	Thornton, D. C.	NSG 6035	3359
12	FISK UNIVERSITY	Kent, M. I.	MSFC	Mickens, R. E.	NSG 8035	3483
12	HARVARD UNIVERSITY	Harris, J. W.	JSC	Hays, J. F.	NGL 22-007-247	2455
12	HOWARD UNIVERSITY	Murphy, R. E.	HQ-SL	Jackson, W. M.	NSG 5071	1888
12	HOWARD UNIVERSITY	Donn, B.	HQ-SL	Jackson, W. M.	NSG 7378	1896
12	KENT STATE UNIV-KENT	Quattrone, P. D.	ARC	Madey, R.	NSG 2013	3200
12	LEHIGH UNIVERSITY	Boese, R. W.	ARC	Lovejoy, R. W.	NCA 2-380901	3363
12	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Goldstein, J. I.	NGR 39-007-056	3366
12	MASS INST OF TECH	Quattrone, P. D.	ARC	Reid, R. C.	NGR 22-009-723	2537
12	MASS INST OF TECH	Harris, J. W.	JSC	Burns, R. G.	NGR 22-009-551	2533
12	MASS INST OF TECH	Antoine, A. C.	LERC	Uhlmann, D. R.	NSG 3286	2581
12	MASS INST OF TECH	Young, R. S.	HQ-SB	Rich, A.	NGR 22-009-277	2529
12	MISS UNIV FOR WOMEN	StClair, T. L.	LARC	Pratt, J. R.	NSG 1539	2750
12	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-LU	Hall, J. H.	NSG 7652	2013
12	MORRIS BROWN COLLEGE	Patterson, W. J.	MSFC	Maxwell, A.	NSG 8027	2015
12	MUSKINGUM COLLEGE	Reid, M. A.	LERC	Wallace, W. J.	NSG 3278	3206
12	OLD DOMINION UNIV	Phillips, D. H.	LARC	Ake, R. L.	NSG 1393	3811
12	PENN STATE U-UNIV PK	Fewell, L. L.	ARC	Allcock, H. R.	NSG 2364	3398
12	PENN STATE U-UNIV PK	Young, R. S.	HQ-SB	Wedler, F. C.	NSG 7515	3420
12	POLY INST OF NY	Fohlen, G. M.	ARC	Pearce, E. M.	NSG 2147	3020
12	POLY INST OF NY	Fohlen, G. M.	ARC	Pearce, E. M.	NSG 2361	3021
12	POLY INST OF NY	Young, R. S.	HQ-SB	Eirich, F. R	NGR 33-006-070	3017
12	POMONA COLLEGE	Williams, T. S., Jr.	LARC	Baird, A. K.	NAS 1-11854	1260
12	RENSSELAER POLY-NY	Reeves, F. A.	MSFC	Glicksman, M. E.	NAS 8-32690	3030
12	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Ferris, J. P.	NGR 33-018-148	3036
12	SAN FRAN STATE UNIV	Lawless, J. G.	ARC	Orenberg, J. B.	NCA 2-660902	1265
12	SAN JOSE STATE UNIV	Oyama, V. I.	ARC	Ling, A. C.	NCA 2-675810	1272
12	SAN JOSE STATE UNIV	Polaski, L. J.	ARC	Goodman, J. K.	NCA 2-675908	1279
12	SAN JOSE STATE UNIV	Cagliostro, D. E.	ARC	Ballard, R. C.	NCC 2 4	1283
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NCC 2 8	1285
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Spitze, L. A.	NGR 05-046-011	1288
12	SAN JOSE STATE UNIV	Rosser, R. W.	ARC	Hyer, M. W.	NSG 2186	1290
12	SAN JOSE STATE UNIV	Fohlen, G. M.	ARC	Ling, A. C.	NSG 2209	1291
12	SAN JOSE STATE UNIV	Heimbuch, A. H.	ARC	Hsu, M. T.	NSG 2274	1295
12	SAN JOSE STATE UNIV	Golub, M. A.	ARC	Ling, A. C.	NSG 2353	1301
12	SAN JOSE STATE UNIV	Wydeven, T. J.	ARC	Sree Horsha, K. S.	NSG 2355	1302
12	SAN JOSE STATE UNIV	Fish, R. H.	ARC	Mayer, L. A.	NSG 2371	1303
12	STATE U NY-STONY BRK	Chang, S.	ARC	Owen, T.	NCA 2-760901	3068
12	STATE U NY-STONY BRK	Harris, J. W.	JSC	Schaeffer, O. A.	NGL 33-015-174	3072
12	STATE U NY-STONY BRK	Brabbs, T. A.	LERC	Yang, C. H.	NCC 3 2	3069
12	TEXAS A&M UNIVERSITY	Young, R. S.	HQ-SB	Fendler, J. H.	NSG 7037	3603
12	UNIV OF ALBUQUERQUE	Fordyce, J. S.	LERC	Urzendowski, R. M.	NSG 3092	2893
12	UNIV ALA-BIRMINGHAM	Young, R. S.	HQ-SB	Lacey, J. C., Jr.	NGR 01-010-001	1039
12	UNIV ALA-HUNTSVILLE	Urban, E. W.	MSFC	Hendricks, J. B.	NAS 8-33384	1053
12	UNIV OF ARIZONA	Harris, J. W.	JSC	Drake, M. J.	NGR 03-002-388	1123
12	UNIV CALIF-BERKELEY	Altman, R. L.	ARC	Goren, S. L.	NCA 2-50001	1428
12	UNIV CALIF-BERKELEY	Altman, R. L.	ARC	Williams, M. C.	NCA 2-50905	1437
12	UNIV CALIF-BERKELEY	Young, R. S.	HQ-SB	Jukes, J. H.	NGR 05-003-460	1450
12	UNIV CALIF-DAVIS	Cagliostro, D. E.	ARC	Needles, H. L.	NCC 2 20	1490
12	UNIV CALIF-L ANGELES	Altman, R. L.	ARC	Knuth, E. L.	NCA 2-390903	1513
12	UNIV CALIF-L ANGELES	Harris, J. W.	JSC	Molnar, P.	NGL 05-007-367	1518
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Arnold, J. R.	NGL 05-009-148	1590
12	UNIV CALIF-SAN DIEGO	Harris, J. W.	JSC	Marti, K.	NGL 05-009-150	1591
12	UNIV CALIF-S BARBARA	Kohl, F. J.	LERC	Steinberg, M.	NSG 3256	1652

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12	UNIV OF CHICAGO	Harris, J. W.	JSC	Clayton, R. N.	NGL 14-001-169	2087
12	UNIV COLORADO-BOLDR	Whitten, R. C.	ARC	Castleman, A. W.	NSG 2248	1762
12	UNIV OF DAYTON	Kourtides, D. A.	ARC	Salyer, I. O.	NSG 2373	3267
12	UNIV OF DAYTON	Kourtides, D. A.	ARC	Salyer, I. O.	NSG 2374	3268
12	UNIV OF DENVER	Valero, F. P.	ARC	Bonomo, F.	NCA 2-205901	1802
12	UNIV OF FLORIDA	Schell, J. T.	MSFC	Patterson, E. P.	NAS 8-20247	1928
12	UNIV OF HAWAII-MANOA	Young, R. S.	HQ-SB	Folsome, C. E.	NGR 12-001-109	2038
12	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Becker, R. S.	NGR 44-005-091	3620
12	UNIV OF IDAHO	Rosser, R. W.	ARC	Korus, R. A.	NSG 2367	2058
12	UNIV ILLINOIS-URBANA	Young, R. S.	HQ-SB	Woese, C. R.	NSG 7044	2133
12	UNIV MARYLAND-COL PK	Mandel, A. D.	ARC	Goldsby, R. A.	NCA 2-420901	2353
12	UNIV MARYLAND-COL PK	Giver, L. P.	ARC	Khanna, R. K.	NCA 2-420902	2354
12	UNIV MARYLAND-COL PK	Donn, B. D.	GSFC	Khanna, R. K.	NSG 5172	2390
12	UNIV MARYLAND-COL PK	Young, R. S.	HQ-SB	Ponnamperuma, C. A.	NGR 21-002-317	2374
12	UNIV MARYLAND-COL PK	Young, R. S.	HQ-SB	Ponnamperuma, C.A.	NSG 7469	2413
12	UNIV OF MASS-AMHERST	Young, R. S.	HQ-SB	Huguenin, R. L.	NSG 7397	2616
12	UNIV OF MIAMI	Young, R. S.	HQ-SB	Fox, S. W.	NGR 10-007-008	1959
12	UNIV MO-ROLLA	Graves, R. A., Jr.	LARC	Biolsi, L.	NSG 1369	2767
12	UNIV OF NEW MEXICO	Harris, J. W.	JSC	Keil, K.	NGL 32-004-063	2898
12	UNIV OF PITTSBURGH	Kakar, R. K.	HQ-ST	Kaufman, F.	NGR 39-011-161	3440
12	UNIV OF SANTA CLARA	Chang, S.	ARC	White, D. H.	NCA 2-685806	1674
12	UNIV OF SANTA CLARA	Lawless, J. G.	ARC	Sweeney, M. A.	NCA 2-685903	1678
12	UNIV STHN COLORADO	Bryan, C. J.	KSC	Mahan, K. I.	NSG 806	1810
12	UNIV TEXAS-AUSTIN	Bond, V.	JSC	Szebekely, V. G.	NAS 9-15567	3651
12	UNIV TEXAS-EL PASO	Duke, M.	JSC	Hoffer, J. M.	NSG 9062	3713
12	UNIV OF TOLEDO	Stearns, C. A.	LERC	Edwards, J. G.	NSG 3250	3278
12	UNIV OF UTAH	Pohly, J. G.	HQ-LU	Guillory, W. A.	NSG 7516	3734
12	UNIV OF WASHINGTON	Langhoff, S. R.	ARC	Davidson, E. R.	NSG 2365	3939
12	UTAH STATE UNIV	Kakar, R. K.	HQ-ST	Megill, L. R.	NSG 7206	3745
12	VIRGINIA POLY INST	Johnston, N. J.	LARC	Wolfe, J. F.	NSG 1064	3885
12	VIRGINIA POLY INST	Young, P. R.	LARC	Mason, J. G.	NSG 1085	3886
12	VIRGINIA POLY INST	Progar, D. J.	LARC	Wightman, J. P.	NSG 1124	3887
12	VIRGINIA POLY INST	StClair, A. K.	LARC	Taylor, L. T.	NSG 1428	3894
12	VIRGINIA POLY INST	StClair, T. L.	LARC	Wolfe, J. F.	NSG 1524	3897
12	VIRGINIA POLY INST	StClair, A. K.	LARC	McGrath, J. E.	NSG 1597	3904
12	WORCESTER POLY INST	Young, R. S.	HQ-SB	Plumb, R. C.	NSG 7392	2624
12	YALE UNIVERSITY	Fryburg, G. C.	LERC	Rosner, D. E.	NSG 3169	1827
13	ALABAMA A&M UNIV	Schafer, C. F.	MSFC	Lal, R. B.	[illegible] 8033	1003
13	ALABAMA A&M UNIV	Burns, R. E.	MSFC	Williams, A. C.	[illegible] 8068	1014
13	ATHENS STATE COLLEGE	Finnell, S. E.	MSFC	Martin, A. M.	[illegible] S 8-32220	1015
13	BOWIE STATE COLLEGE	Caruso, A. J.	GSFC	Bhatia, M. S.	NGR 21-027-010	2297
13	BRIGHAM YOUNG UNIV	Hall, C. F.	ARC	Jones, D. E.	NAS 2-7358	3722
13	BROOKLYN COLLEGE	Meador, W. E., Jr.	LARC	Franco, V.	NSG 1378	2904
13	CALIF INST OF TECH	Gemmell, J. D.	GSFC	Stone, E. C.	NAS 5-11066	1170
13	CALIF INST OF TECH	Davis, M. A.	GSFC	Stone, E. C.	NAS 5-20721	1171
13	CALIF INST OF TECH	Stouffer, C. G.	GSFC	Garmire, G. P.	NAS 5-24339	1175
13	CALIF INST OF TECH	Wende, C. D.	GSFC	Garmire, G. P.	NAS 5-25049	1176
13	CALIF INST OF TECH	Harris, J. W.	JSC	Epstein, S.	NGL 05-002-190	1192
13	CALIF INST OF TECH	Harris, J. W.	JSC	Albee, A. L.	NGL 05-002-338	1194
13	CALIF INST OF TECH	Harris, J. W.	JSC	Tombrello, T. A.	NGR 05-002-333	1202
13	CALIF INST OF TECH	DeLoach, A. C.	MSFC	Moore, R. L.	NAS 8-33215	1181
13	CALIF INST OF TECH	Henry, W.	HQ-RP	Ahrens, T. J	NSG 7458	1227
13	CALIF INST OF TECH	Schwenk, F. C.	HQ-RT	Vaughan, R.	NSG 7275	1221
13	CALIF INST OF TECH	Schwenk, F. C.	HQ-RT	Liepmann, H. W.	NSG 7508	1229
13	CALIF INST OF TECH	Bohlin, J. D.	HQ-ST	Goldreich, P.	NSG 7342	1223
13	CAL STATE U-FULLERTN	Boese, R. W.	ARC	Nanes, R.	NCA 2-253901	1241
13	CAL STATE U-NRTHRDGE	Bohlin, J. D.	HQ-ST	Chapman, G. A.	NSG 7456	1254
13	CASE WESTERN RESERVE	Purvis, C. K.	LERC	[illegible]uan, W. L.	NSG 3197	3166

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13	CASE WESTERN RESERVE	Labus, T. L.	LERC	Ostrach, S.	NSG 3221	3171
13	CASE WESTERN RESERVE	Reeves, F. A.	MSFC	Ostrach, S.	NAS 8-33015	3147
13	CATHOLIC UNIVERSITY	Dennis, B. R.	GSFC	Werntz, C.	NSG 5066	1840
13	CATHOLIC UNIVERSITY	McAvoy, N.	GSFC	Kelley, G. L.	NSG 5111	1841
13	CATHOLIC UNIVERSITY	Wiskerchen, M. J.	HQ-ST	Whang, Y. C.	NGR 09-005-063	1839
13	CATHOLIC UNIVERSITY	Bohlin, J. D.	HQ-ST	Whang, Y C.	NSG 7422	1843
13	CHRISTPHR NEWPRT COL	Byvik, C. E.	LARC	Buoncristiani, A. M.	NSG 1514	3754
13	CITY COLLEGE OF N Y	Byrns, Z. H.	JSC	Pierson, W. J.	NAS 9-13642	2906
13	CITY U N Y-GRAD SCHL	Temkin, A.	GSFC	Mittleman, M. H.	NSG 5334	2914
13	CLARK COLLEGE	Pohly, J. G.	HQ-LU	Sinha, O. P.	NSG 7267	1970
13	CLARKSON COL OF TECH	Barnes, C. M	JSC	McNulty, P.	NSG 9059	2918
13	CLARKSON COL OF TECH	Crouch, R. K.	LARC	Carlson, F.	NSG 1572	2916
13	CLARKSON COL OF TECH	Williams, J. R.	MSFC	Subramanian, R. S.	NAS 8-32944	2915
13	COLLEGE OF WM & MARY	Miller, W. E.	LARC	Sher, A.	NSG 1385	3765
13	COLLEGE OF WM & MARY	Hohl, F.	LARC	Zang, T. A.	NSG 1564	3767
13	COLLEGE OF WM & MARY	Fripp, A. L.	LARC	Sher, A.	NSG 1653	3770
13	COLORADO STATE UNIV	McKenzie, R. L.	ARC	She, C. Y.	NSG 2287	1724
13	COLORADO STATE UNIV	Exton, R. J.	LARC	She, C Y.	NSG 1594	1722
13	COLORADO STATE UNIV	Chubb, D. L.	LERC	Collins, G. J.	NSG 3060	1726
13	COLORADO STATE UNIV	Mirtich, M. J.	LERC	Kaufman, H. R.	NSG 3086	1727
13	COLORADO STATE UNIV	Aron, P. R.	LERC	Yadlowsky, E. J.	NSG 3145	1729
13	COLORADO STATE UNIV	Sater, B. L.	LERC	Sites, J. R.	NSG 3167	1730
13	COLORADO STATE UNIV	Grier, N. T.	LERC	Kaufman, H R.	NSG 3196	1731
13	COLORADO STATE UNIV	Schwenk, F. C.	HQ-RT	Etters, R. D	NGR 06-002-159	1720
13	COLUMBIA UNIVERSITY	Harris, J. W.	JSC	Horai, K.	NGR 33-008-177	2931
13	CORNELL UNIVERSITY	Conrath, B. J.	GSFC	Gierasch, P. J	NAS 5-23236	2951
13	CORNELL UNIVERSITY	Flood, D. J.	LERC	Ashcroft, N. W.	NGR 33-010-188	2965
13	CORNELL UNIVERSITY	Lundholm, J. G., Jr.	HQ-RS	Ashcroft, N. W.	NSG 7487	2987
13	CORNELL UNIVERSITY	Kaiser, M. L.	HQ-ST	Farley, D. T.	NGR 33-010-161	2963
13	DARTMOUTH COLLEGE	Cooper, D M.	ARC	Christy, R. W.	NSG 2397	2813
13	DREXEL UNIVERSITY	Brooks, W. F.	ARC	Acquista, C. A.	NSG 2357	3353
13	DREXEL UNIVERSITY	Nelsen, E. D.	GSFC	House, F. B.	NAS 5-22946	3347
13	DREXEL UNIVERSITY	Holland, A. C.	WFC	Acquista, C. R.	NSG 6019	3358
13	DREXEL UNIVERSITY	Lundholm, J. G., Jr.	HQ-RR	Rosen, G. H.	NSG 7491	3360
13	FISK UNIVERSITY	Stecker, F. W.	GSFC	Mickens, R. E.	NSG 5297	3482
13	FISK UNIVERSITY	Kroes, R. L.	MSFC	Silberman, E.	NSG 8060	3484
13	FLORIDA A&M UNIV	Temkin, A.	GSFC	Jones, H. W.	NSG 5307	1913
13	FLORIDA A&M UNIV	Pohly, J. G.	HQ-LU	Jones, H. J.	NSG 901	1909
13	FORT LEWIS COLLEGE	Browne, I. D.	JSC	Baker, J. R.	NAS 9-15276	1740
13	GEORGE WASHINGTON U	Greene, G C.	LARC	Liebowitz, H.	NSG 1474	1865
13	GEORGIA INST OF TECH	Feiler, C. E.	LERC	Cassonova, R. A.	NSG 3228	2003
13	HAMPTON INSTITUTE	Hohl, F.	LARC	Han, K. S.	NSG 1595	3788
13	HARVARD UNIVERSITY	Reed, E. I.	GSFC	Parkinson, W. H.	NSG 5176	2465
13	HARVARD UNIVERSITY	Snoddy, W. C.	MSFC	Vaiana, G. S.	NAS 8-31374	2447
13	HARVARD UNIVERSITY	Lacy, L. L.	MSFC	Turnbull, D.	NAS 8-32691	2448
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H	NGL 22-007-006	2452
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Parkinson, W. H.	NSG 5128	2462
13	HARVARD UNIVERSITY	Bohlin, J. D	HQ-ST	Vaiana, G. S.	NSG 7497	2481
13	HARVARD UNIVERSITY	Bohlin, J. D.	HQ-ST	Vaiana, G. S.	NSG 7537	2483
13	HOWARD UNIVERSITY	Nava, D. F.	GSFC	Tsang, T.	NGR 09-011-057	1884
13	HOWARD UNIVERSITY	Alcorn, G. E.	GSFC	Cooper, A. R.	NSG 5158	1890
13	HOWARD UNIVERSITY	O'Keefe, J. A.	GSFC	Wallace, W. J.	NSG 5186	1891
13	IOWA STATE UNIV	Pollack, J. B.	ARC	Grossman, A. S.	NCA 2-340902	2186
13	JOHNS HOPKINS UN ✓	Fowler, W. S.	GSFC	Fastie, W. G.	NAS 5-25358	2305
13	JOHNS HOPKINS UNIV	DeLoach, A. C.	MSFC	Roelof, E. C.	NAS 8-33106	2310
13	JOHNS HOPKINS UNIV	Hedin, A. E.	HQ-ST	Krimigis, S. M.	NSG 7055	2325
13	LEHIGH UNIVERSITY	Harris, J. W.	JSC	Sclar, C. B.	NGR 39-007-064	3368
13	LEHIGH UNIVERSITY	Williams, J. R.	MSFC	VanDerHoff, J. W.	NAS 8-32951	3362

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13	MASS INST OF TECH	Davis, M. A.	GSFC	Bridge, H. S.	NAS 5-11062	2493
13	MASS INST OF TECH	Harris, J. W.	JSC	Simmons, M. G.	NGR 22-009-540	2532
13	MASS INST OF TECH	Byvik, C E.	LARC	Wrighton, M. S.	NSG 1048	2543
13	MASS INST OF TECH	Akey, N. D.	LARC	Fonstad, C. G.	NSG 1413	2548
13	MASS INST OF TECH	Singh, J. J.	LARC	Greytak, T. J.	NSG 1551	2552
13	MASS INST OF TECH	Greene, G. C.	LARC	Ingard, K. V.	NSG 1583	2554
13	MASS INST OF TECH	Davidson, M. C.	MSFC	Hitt, A. F.	NAS 8-32994	2512
13	MASS INST OF TECH	DeLoach, A. C.	MSFC	Sullivan, J. D.	NAS 8-33137	2513
13	MASS INST OF TECH	DeLoach, A. C.	MSFC	Frankenthal, S.	NAS 8-33138	2514
13	MASS INST OF TECH	Cauffman, D. P.	HQ-ST	Bridge, H. S.	NGL 22-009-015	2521
13	MIAMI UNIVERSITY	Hohl, F.	LARC	Wells, W. E.	NCC 1 12	3203
13	MIAMI UNIVERSITY	Hohl, F.	LARC	Wells, W. E.	NSG 1383	3204
13	MIAMI UNIVERSITY	Hohl, F.	LARC	Wells, W. E.	NSG 1396	3205
13	MICHIGAN STATE UNIV	Bohlin, J. D.	HQ-ST	Stein, R. F.	NSG 7293	2627
13	MISSISSIPPI STATE U	Hollis, B. R., Jr.	MSFC	Trotter, D.	NAS 8-26749	2733
13	MONTANA STATE UNIV	Eby, P. B.	MSFC	Nortdvedt, K.	NSG 8061	2795
13	MOREHOUSE COLLEGE	Burch, J. L.	MSFC	Turner, J. M.	NSG 8043	2014
13	NEW YORK UNIVERSITY	Darden, C. M.	LARC	Ting, L.	NSG 1576	3005
13	NEW YORK UNIVERSITY	Roman, N. G.	HQ-SC	Glassgold, A. E.	NGR 33-016-196	3001
13	N CAR CENTRAL UNIV	McAvoy, N.	GSFC	Dutta, J. M.	NSG 5120	3117
13	NO CAROLINA STATE U	Meador, W. E., Jr.	LARC	Hassan, H. A.	NSG 1058	3126
13	NO CAROLINA STATE U	Mayes, W. H.	LARC	Hart, F. D.	NSG 1205	3128
13	NO CAROLINA STATE U	Long, E. R., Jr.	LARC	Fornes, R. E.	NSG 1562	3134
13	OHIO STATE UNIV	Boese, R. W.	ARC	Rao, K. N.	NSG 2175	3226
13	OLD DOMINION UNIV	Fowler, W. B.	GSFC	Becher, J.	NSG 5289	3840
13	OLD DOMINION UNIV	Melfi, L. T., Jr.	LARC	Brock, F. J.	NSG 1271	3801
13	OLD DOMINION UNIV	Holmes, H. K.	LARC	Zuckerwar, A. J.	NSG 1324	3805
13	OLD DOMINION UNIV	Hohl, F.	LARC	Harries, W. L.	NSG 1362	3809
13	OLD DOMINION UNIV	Hohl, F.	LARC	Harries, W. L.	NSG 1568	3832
13	OREGON STATE UNIV	Harris, J. W.	JSC	Schmitt, R. A.	NGL 38-002-039	3323
13	PENN STATE U-UNIV PK	Spencer, N. W.	GSFC	Nisbet, J. S.	NSG 5212	3412
13	PENN STATE U-UNIV PK	Aron, P. R.	LERC	Robinson, J. W.	NSG 3166	3402
13	PENN STATE U-UNIV PK	Aron, P. R.	LERC	Kendall, B. R.	NSG 3301	3407
13	PENN STATE U-UNIV PK	Ballance, C. W., Jr.	WFC	Kendall, B. R.	NGL 39-009-032	3392
13	PENN STATE U-UNIV PK	Kaiser, M. L.	HQ-ST	Nisbet, J. S.	NGL 39-009-003	3389
13	POLY INST OF NY	Will, H. A.	LERC	Lederman, S.	NSG 3108	3023
13	PRINCETON UNIVERSITY	McKenzie, R. L.	ARC	Miles, R. B.	NSG 2366	2855
13	PRINCETON UNIVERSITY	Williams, J. T.	GSFC	Lowrance, J. L.	NSG 5277	2860
13	PRINCETON UNIVERSITY	Honaker, W. C.	LARC	Miles, R. B.	NSG 1070	2848
13	PRINCETON UNIVERSITY	Neuschaefer, R.	MSFC	Saville, D. A.	NAS 8-32614	2841
13	PRINCETON UNIVERSITY	Boggess, N. W.	HQ-SC	Dicke, R. H.	NGR 31-001-202	2847
13	RENSSELAER POLY-NY	Meador, W. E., Jr.	LARC	Schwarz, H. J.	NSG 1628	3039
13	RENSSELAER POLY-NY	Jones, W. R., Jr.	LERC	Lauer, J. L.	NSG 3170	3041
13	RENSSELAER POLY-NY	Lacy, L. L.	MSFC	Ross, S.	NAS 8-33074	3032
13	RICE UNIVERSITY	Taylor, H. A., Jr.	GSFC	Cloutier, P. A.	NAS 5-23338	3542
13	RICE UNIVERSITY	Lad, R. A.	LERC	Rorschach, H. E.	NGL 44-006-001	3552
13	RICE UNIVERSITY	McKenzie, R. L.	HQ-RT	Swain, P. H.	NSG 7490	3564
13	RICE UNIVERSITY	Cauffman, D. P.	HQ-ST	Michel, F. C.	NGL 44-006-012	3553
13	RICE UNIVERSITY	Cauffman, D. P.	HQ-ST	Dessler, A. J.	NGR 44-006-137	3555
13	SAN FRAN STATE UNIV	Barnes, A.	ARC	Kilpatrick, T.	NCA 2-660806	1263
13	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Heinemann, K. H.	NSG 2249	1381
13	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Heinemann, K. H.	NSG 2285	1385
13	STANFORD UNIVERSITY	McKenzie, R. L.	ARC	Byer, R. L.	NSG 2289	1386
13	STANFORD UNIVERSITY	Billman, K W.	ARC	Pantell, R. H.	NSG 2292	1387
13	STANFORD UNIVERSITY	Chackerian, C., Jr.	ARC	Byer, R. L.	NSG 2372	1394
13	STANFORD UNIVERSITY	Davis, M. A.	GSFC	Helliwell, R. A.	NAS 5-20871	1307
13	STANFORD UNIVERSITY	Fellerman, K. D.	GSFC	Helliwell, R. A.	NAS 5-24409	1310
13	STANFORD UNIVERSITY	Davis, M. A.	GSFC	Wilcox, J. M.	NAS 5-24420	1311

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13	STANFORD UNIVERSITY	Bissell, E. E.	GSFC	Walker, A. B., Jr.	NSG 5131	1400
13	STANFORD UNIVERSITY	Potter, R. A.	MSFC	Everitt, C. W	NAS 8-32355	1316
13	STANFORD UNIVERSITY	Urban, E. W.	MSFC	Everitt, C. W.	NAS 8-32605	1317
13	STANFORD UNIVERSITY	Schwenk, F. C.	HQ-RT	Harris, S. L.	NSG 7619	1409
13	STANFORD UNIVERSITY	Wiskerchen, M. J.	HQ-ST	Helliwell, R. A.	NGL 05-020-008	1346
13	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Sturrock, P. A.	NGL 05-020-272	1351
13	STANFORD UNIVERSITY	Bohlin, J. D.	HQ-ST	Tyler, G. L.	NSG 7552	1407
13	STATE UNIV NY-BUFFAL	Morris, J. F.	LERC	Shaw, D. T.	NSG 7071	3063
13	STATE U NY-STONY BRK	Harris, J. W.	JSC	Bence, A. E.	NGL 33-015-130	3071
13	STATE U NY-STONY BRK	Harris, J. W.	JSC	Papike, J. J.	NSG 9044	3089
13	STATE U NY-STONY BRK	Cochran, T. H.	LERC	Berlad, A. L.	NSG 3298	3078
13	TALLADEGA COLLEGE	Whitten, R. C.	ARC	Morrison, R. A.	NSG 2217	1028
13	TEXAS A&M UNIVERSITY	Matthews, R. L.	JSC	Rouse, J. W., Jr.	NAS 9-15451	3584
13	TEXAS A&M UNIVERSITY	Brown, G. V.	LERC	Ford, A. L.	NSG 3201	3598
13	TEXAS A&M UNIVERSITY	Nowakowski, M.	MSFC	Parker, D. L.	NAS 8-32527	3576
13	UNION COLLEGE	McAvoy, N.	GSFC	Galantowicz, A.	NGR 33-032-004	3095
13	UNIV ALA-HUNTSVILLE	Tandberghanssen, E.	MSFC	Wu, S. T.	NAS 8-28097	1040
13	UNIV ALA-HUNTSVILLE	Chappell, C. R.	MSFC	Comfort, R. H.	NAS 8-30563	1042
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-31170	1043
13	UNIV ALA-HUNTSVILLE	Price, J. M.	MSFC	Christiensen, D.	NAS 8-31293	1045
13	UNIV ALA-HUNTSVILLE	Vaughan, O. H.	MSFC	Hung, R. J.	NAS 8-31729	1046
13	UNIV ALA-HUNTSVILLE	Parnell, T. A.	MSFC	Gregory, J. C.	NAS 8-31895	1047
13	UNIV ALA-HUNTSVILLE	Urban, E. W.	MSFC	Karr, G. R.	NAS 8-32818	1048
13	UNIV ALA-HUNTSVILLE	DeLoach, A. C.	MSFC	Steinolfson, R. S	NAS 8-33216	1051
13	UNIV ALA-UNIVERSITY	Owen, R. B.	MSFC	Lin, H. K.	NAS 8-32386	1058
13	UNIV ALASKA-FAIRBNKS	Spencer, N. W.	GSFC	Rees, M. H.	NSG 5219	1064
13	UNIV OF ARIZONA	Pearl, J C.	GSFC	Fink, U. W.	NCA 5-94	1109
13	UNIV OF ARIZONA	McAvoy, N.	GSFC	Lamb, W. E., Jr.	NSG 5302	1133
13	UNIV OF ARIZONA	Kaiser, M. L.	HQ-ST	Hsieh, K. C.	NGR 03-002-107	1116
13	UNIV OF ARIZONA	Hedin, A. E.	HQ-ST	Sonett, C. P.	NSG 7024	1136
13	UNIV OF ARIZONA	Bohlin, J. D.	HQ-ST	Levy, E. H.	NSG 7168	1142
13	UNIV CALIF-BERKELEY	Poppa, H. R.	ARC	Angelakos, D. J.	NCA 2-50705	1430
13	UNIV CALIF-BERKELEY	Billman, K. W.	ARC	Gustafson, K. T.	NSG 2151	1458
13	UNIV CALIF-BERKELEY	Kowalski, G. E.	GSFC	Anderson, K. A.	NAS 5-20079	1410
13	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Mozer, F. S.	NAS 5-20080	1411
13	UNIV CALIF-BERKELEY	Gallagher, W. F.	GSFC	Heckman, H. K.	NAS 5-20995	1412
13	UNIV CALIF-BERKELEY	Bissell, E. E.	GSFC	Mozer, F. S.	NGR 05-003-239	1445
13	UNIV CALIF-BERKELEY	Harris, J. W.	JSC	Reynolds, J. H.	NGL 05-003-409	1443
13	UNIV CALIF-BERKELEY	Sachse, G. W.	LARC	Chiao, R. Y.	NSG 1637	1456
13	UNIV CALIF-BERKELEY	Ondrak, B. T.	MSFC	Price, P. B.	NAS 8-29603	1421
13	UNIV CALIF-BERKELEY	Bohlin, J. D.	HQ-ST	Anderson, K. A.	NSG 7527	1479
13	UNIV CALIF-DAVIS	Hansen, C. F.	ARC	Fong, C. Y.	NAS 2-10258	1482
13	UNIV CALIF-DAVIS	Arnold, J. O.	ARC	Fong, C. Y.	NSG 2383	1492
13	UNIV CALIF-DAVIS	Nelsen, E. D.	GSFC	Coulson, K. L.	NAS 5-22964	1483
13	UNIV CALIF-IRVINE	Whiting, E. E.	HQ-RT	Wallis, R. F.	NSG 7472	1500
13	UNIV CALIF-IRVINE	Bohlin, J. D.	HQ-ST	VanHoven, G.	NSG 7375	1499
13	UNIV CALIF-L ANGELES	Davis, M. A.	GSFC	Russell, C. T.	NAS 5-20064	1504
13	UNIV CALIF-L ANGELES	Hoffman, R. A.	GSFC	Coroniti, F V.	NAS 5-25039	1506
13	UNIV CALIF-L ANGELES	Harris, J W.	JSC	Kaplan, I. R.	NGR 05-007-289	1521
13	UNIV CALIF-L ANGELES	Rice, E. J.	LERC	Charwat, A. F.	NSG 3236	1535
13	UNIV CALIF-L ANGELES	Taylor, W. W.	HQ-ST	Holzer, R. E.	NGR 05-007-276	1520
13	UNIV CALIF-L ANGELES	Timothy, A. F.	HQ-ST	Ulrich, R. K.	NSG 7158	1549
13	UNIV CALIF-L ANGELES	Bohlin, J. D.	HQ-ST	Ulrich, R. K.	NSG 7407	1558
13	UNIV CALIF-SAN DIEGO	Davis, M. A.	GSFC	Peterson, L. E.	NAS 5-25448	1577
13	UNIV CALIF-SAN DIEGO	Woollam, J. A.	LERC	Luo, H L.	NSG 3103	1605
13	UNIV CALIF-SAN DIEGO	Cochran, T. H.	LERC	Williams, F. A.	NSG 3296	1608
13	UNIV CALIF-SAN DIEGO	Chappell, C. R.	MSFC	McIlwain, C. E.	NAS 8-31145	1580
13	UNIV CALIF-SAN DIEGO	DeLoach, A. C.	MSFC	Svestka Z.	NAS 8-32984	1581

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13	UNIV CALIF-SAN DIEGO	Kaluzienski, L. J.	HQ-SC	Peterson, L. E.	NGL 05-005-003	1583
13	UNIV CALIF-SAN DIEGO	Hedin, A. E.	HQ-ST	McIlwain, C. E.	NGL 05-005-007	1585
13	UNIV CALIF-SAN DIEGO	Bohlin, J. D.	HQ-ST	Peterson, L. E.	NSG 7161	1615
13	UNIV CALIF-SAN DIEGO	Bohlin, J. D.	HQ-ST	Canfield, R. C.	NSG 7406	1618
13	UNIV CALIF-S BARBARA	Cassen, P.	ARC	Glantz, S. A.	NCA 2-680805	1641
13	UNIV CALIF-S BARBARA	Brooks, W. F.	ARC	Vanyo, J. P.	NCC 2 11	1645
13	UNIV OF CHICAGO	Davis, M. A.	GSFC	Simpson, J. A.	NAS 5-11067	2075
13	UNIV OF CHICAGO	Gallagher, W. F.	GSFC	Meyer, P.	NAS 5-20674	2076
13	UNIV OF CHICAGO	Davis, M. A.	GSFC	Simpson, J. A.	NAS 5-24430	2077
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Anders, E.	NGL 14-001-167	2086
13	UNIV OF CHICAGO	Harris, J. W.	JSC	Smith, J. V.	NGL 14-001-171	2088
13	UNIV OF CINCINNATI	Blue, J. W.	LERC	Selberg, B. P.	NSG 3091	3253
13	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Rottman, G. T.	NSG 5178	1766
13	UNIV COLORADO-BOLDR	Roman, N. G.	HQ-SC	Timothy, J. G.	NSG 7459	1784
13	UNIV COLORADO-BOLDR	Rosendhal, J. D.	HQ-SC	Thomas, R.	NSG 7460	1785
13	UNIV COLORADO-BOLDR	Strickland, A. T.	HQ-SL	Levine, J.	NSG 7344	1782
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Linsky, J. L.	NGI 06-003-057	1755
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Hansen, E. R.	NSG 7130	1776
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Chipman, E. G.	NSG 7165	1777
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Dulk, G. A.	NSG 7287	1779
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Thomas, R. N.	NSG 7291	1780
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Smith, D. F.	NSG 7507	1787
13	UNIV COLORADO-BOLDR	Bohlin, J. D.	HQ-ST	Gebbie, K. B.	NSG 7511	1788
13	UNIV DC-MT VERNON SQ	Mentall, J. E.	GSFC	Morgan, H. D.	NSG 5192	1903
13	UNIV OF DENVER	Goldberg, R.	GSFC	Barcus, J.	NAS 5-25862	1799
13	UNIV OF FLORIDA	Hohl, F.	LARC	Schneider, R. T.	NSG 1586	1942
13	UNIV OF FLORIDA	Thom, K.	HQ-RR	Schneider, R. T.	NGL 10-005-089	1938
13	UNIV OF FLORIDA	Thom, K.	HQ-RR	Schneider, R. T.	NSG 7299	1951
13	UNIV OF HAWAII-MANOA	DeLoach, A. C.	MSFC	Heasley, J. N.	NAS 8-33219	2030
13	UNIV OF HAWAII-MANOA	Dwornik, S. E.	HQ-SL	Morrison, D.	NSG 7633	2056
13	UNIV OF HAWAII-MANOA	Bohlin, J. D.	HQ-ST	Jefferies, J. T.	NSG 7536	2053
13	UNIV HOUSTON-CL LAKE	Harris, J. W.	JSC	Blanford, G. E.	NSG 9043	3637
13	UNIV ILLINOIS-URBANA	Spencer, N. W.	GSFC	Sechrist, C. F., Jr.	NSG 5213	2129
13	UNIV ILLINOIS-URBANA	Hohl, F.	LARC	Miley, G. H.	NSG 1547	2122
13	UNIV ILLINOIS-URBANA	Hohl, F.	LARC	Verdeyen, J. T.	NSG 1609	2123
13	UNIV ILLINOIS-URBANA	Dunning, J. W., Jr.	LERC	Verdeyen, J. T.	NGR 14-005-200	2119
13	UNIV ILLINOIS-URBANA	Cochran, T. H.	LERC	Strehlow, R. A.	NSG 3293	2127
13	UNIV OF IOWA	Stallcop, J. R.	ARC	Stwalley, W. C.	NSG 2327	2215
13	UNIV OF IOWA	Gemmell, J. D.	GSFC	Frank, L. A	NAS 5-11064	2201
13	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-20093	2204
13	UNIV OF IOWA	Davis, M. A.	GSFC	Frank, L. A.	NAS 5-20094	2205
13	UNIV OF IOWA	Fellerman, K. D.	GSFC	Frank, L. A.	NAS 5-24293	2206
13	UNIV OF IOWA	Fellerman, K. D.	GSFC	Shawhan, S. D.	NAS 5-24294	2207
13	UNIV OF IOWA	Heppner, J. P.	GSFC	Gurnett, D. A.	NAS 5-24336	2208
13	UNIV OF IOWA	Gemmell, J. D.	GSFC	Frank, L. A.	NAS 5-25530	2209
13	UNIV OF IOWA	Schwenk, F. C.	HQ-RT	Stwalley, W. C.	NSG 7471	2219
13	UNIV OF IOWA	Wiskerchen, M. J.	HQ-ST	VanAllen, J. A.	NGL 16-001-002	2211
13	UNIV OF IOWA	Kaiser, M. L.	HQ-ST	Gurnett, D. A.	NGL 16-001-043	2212
13	UNIV OF KANSAS	Hallenback, C. A.	LERC	Armstrong, T. P.	NSG 3290	2243
13	UNIV MARYLAND-COL PK	Davis, M. A.	GSFC	Gloeckler, G.	NAS 5-11063	2336
13	UNIV MARYLAND-COL PK	Gallagher, W. F.	GSFC	Gloeckler, G.	NAS 5-20062	2337
13	UNIV MARYLAND-COL PK	Conrath, B. J.	GSFC	Ponnamperuma, C. A.	NAS 5-23237	2338
13	UNIV MARYLAND-COL PK	Sing, M. L.	GSFC	Papadopoulos, K.	NAS 5-25388	2341
13	UNIV MARYLAND-COL PK	Kastner, S. O.	GSFC	Martin, F. W.	NCA 5-65	2360
13	UNIV MARYLAND-COL PK	Ogilvie, K. W.	GSFC	Coplan, M. A.	NGR 21-002-291	2372
13	UNIV MARYLAND-COL PK	Teegarden, B. J.	GSFC	Gloeckler, G.	NGR 21-002-316	2373
13	UNIV MARYLAND-COL PK	Johnson, T. S.	GSFC	Alley, C. O	NSG 5129	2388
13	UNIV MARYLAND-COL PK	Bissell, E. E.	GSFC	Moore, J. H.	NSG 5177	2392

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13	UNIV MARYLAND-COL PK	Hudson, R. D.	GSFC	McIlrath, T. J.	NSG 5313	2397
13	UNIV MARYLAND-COL PK	Simoneau, R. J.	LERC	Sengers, J. V.	NGR 21-002-344	2375
13	UNIV MARYLAND-COL PK	Coles, W. D.	LERC	Spain, I. L	NGR 21-002-400	2378
13	UNIV MARYLAND-COL PK	DeLoach, A. C.	MSFC	Rundu, M. R.	NAS 8-33105	2348
13	UNIV MARYLAND-COL PK	Urban, E. W.	MSFC	Paik, H. J.	NAS 8-33557	2352
13	UNIV MARYLAND-COL PK	Kakar, R. K.	HQ-EB	Ginter, M. L.	NSG 7340	2410
13	UNIV MARYLAND-COL PK	Lundholm, J. G., Jr.	HQ-RS	Spain, I. L.	NSG 7496	2415
13	UNIV MARYLAND-COL PK	Whiting, E. E.	HQ-RT	Weber, J.	NSG 7196	2405
13	UNIV MARYLAND-COL PK	Bohlin, J. D.	HQ-ST	Kundu, M. R.	NGR 21-002-199	2369
13	UNIV MARYLAND-COL PK	Bohlin, J. D.	HQ-ST	Spicer, D. S.	NSG 7427	2412
13	UNIV MD-EASTRN SHORE	Trafford, G. H.	WFC	Singh, G.	NGR 21-119-003	2418
13	UNIV OF MASS-AMHERST	Harris, J. W.	JSC	Haggerty, S. E.	NGL 22-010-089	2614
13	UNIV MICH-ANN ARBOR	Fellerman, K. D.	GSFC	Carignan, G. R.	NAS 5-24295	2637
13	UNIV MICH-ANN ARBOR	Fellerman, K. D.	GSFC	Hays, P. B.	NAS 5-24296	2638
13	UNIV MICH-ANN ARBOR	Hoffman, R. A.	GSFC	Nagy, A. F.	NAS 5-25038	2643
13	UNIV MICH-ANN ARBOR	Haykin, D.	GSFC	Fresh, F.	NAS 5-25158	2646
13	UNIV MICH-ANN ARBOR	Krehbiel, J. P.	GSFC	Carignan, G. R.	NAS 5-25409	2647
13	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-25916	2648
13	UNIV MICH-ANN ARBOR	Bissell, E. E.	GSFC	Sharp, W. E.	NGR 23-005-360	2661
13	UNIV MICH-ANN ARBOR	Hedin, A. E.	HQ-ST	Samir, U.	NGR 23-005-320	2660
13	U MINN-MNPLS-ST PAUL	Sugiura, M.	GSFC	Cahill, L. J., Jr.	NAS 5-25389	2702
13	U MINN-MNPLS-ST PAUL	Bissell, E. E.	GSFC	Winckler, J. R.	NSG 5088	2715
13	U MINN-MNPLS-ST PAUL	Bissell, E. E.	GSFC	Kellogg, P. J.	NSG 5373	2717
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Pepin, R. O.	NGL 24-005-225	2707
13	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Murthy, V. R.	NGR 24-005-223	2710
13	U MINN-MNPLS-ST PAUL	Sovey, J. S.	LERC	Wehner, G. K.	NSG 3041	2713
13	U MINN-MNPLS-ST PAUL	Lundholm, J. G., Jr.	HQ-RS	Scriven, L. E.	NSG 7296	2726
13	UNIV NEW HAMP-DURH M	Trainor, J. H.	GSFC	Webber, W. R.	NAS 5-24354	2821
13	UNIV NEW HAMP-DURHAM	VonRosenvinge, T. T.	GSFC	Fisk, L. A.	NAS 5-25642	2823
13	UNIV NEW HAMP-DURHAM	Bohlin, J. D.	HQ-ST	Chupp, E. L.	NGL 30-002-018	2825
13	UNIV NEW HAMP-DURHAM	Bohlin, J. D.	HQ-ST	Fisk, L. A.	NSG 7411	2830
13	UNIV OF NOTRE DAME	Scott, J. N.	LERC	Atassi, H.	NSG 3195	2181
13	UNIV OREGON-EUGENE	Harris, J. W.	JSC	Weill, D. F.	NGL 38-003-022	3331
13	UNIV OF PENNSYLVANIA	Hansen, C. F.	ARC	Rabii, S.	NAS 2-10070	3423
13	UNIV OF PITTSBURGH	Cooper, D. M.	ARC	Jordan, K. D.	NSG 2407	3442
13	UNIV OF PITTSBURGH	Kostiuk, T.	GSFC	Falk, J.	NAS 5-25013	3433
13	UNIV OF PITTSBURGH	Harris, J. W.	JSC	Hapke, B. W	NSG 9056	3451
13	UNIV OF PITTSBURGH	Brown, G. V.	LERC	Wallace, W. E	NSG 3168	3444
13	UNIV OF ROCHESTER	Stallcop, J. R.	ARC	George, T. F.	NSG 2198	3097
13	UNIV OF ROCHESTER	Bohlin, J. D.	HQ-ST	Thomas, J. H.	NSG 7562	3101
13	UNIV SAN FRANCISCO	Souza, K. A.	ARC	Benton, E. V.	NAS 2-9504	1663
13	UNIV SAN FRANCISCO	Thirolf, R. G.	JSC	Benton, E. V.	NAS 9-15337	1668
13	UNIV SAN FRANCISCO	Parnell, T. A.	MSFC	Benton, E. V.	NAS 8-26758	1666
13	UNIV OF SANTA CLARA	Whitten, R. C.	ARC	McCormick, P. T.	NCA 2-685906	1680
13	UNIV OF SOUTHERN CAL	Bissell, E. E.	GSFC	Judge, D. L.	NSG 5108	1703
13	UNIV OF SOUTHERN CAL	Schmerling, E. R.	HQ-ST	Intriligator, D. S.	NGR 05-018-181	1696
13	UNIV OF SOUTHERN CAL	Cauffman, D. P.	HQ-ST	Intriligator, D. S.	NGR 05-018-185	1697
13	UNIV OF SYDNEY	Melfi, L. T., Jr.	LARC	Bird, G. A.	NSG 7272	4023
13	UNIV TENNESSEE-KNOXV	Maguire, W. C.	GSFC	Fox, K.	NAS 5-25428	3493
13	UNIV TENNESSEE-KNOXV	Fichtl, G. H.	MSFC	Antar, B. N.	NAS 8-33447	3506
13	UNIV TEXAS-AUSTIN	Rice, E. J.	LERC	Blackstock, D. T.	NSG 3198	3669
13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Heelis, R. A.	NAS 5-24297	3694
13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Hanson, W. B.	NAS 5-24298	3695
13	UNIV TEXAS-DALLAS	Fellerman, K. D.	GSFC	Winningham, J. D.	NAS 5-24299	3696
13	UNIV TEXAS-DALLAS	Caporale, A. J.	GSFC	Hanson, W. B.	NAS 5-25310	3697
13	UNIV TEXAS-DALLAS	Bissell, E. E.	GSFC	Winningham, J. D.	NGR 44-004-124	3704
13	UNIV TEXAS-DALLAS	Chappell, C. R.	MSFC	Hanson, W. B.	NAS 8-32831	3700
13	UNIV TEXAS-EL PASO	Robertson, J. B.	LARC	Eastman, M. P.	NSG 1316	3711

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13	U TEX HEALTH CTR-SA	Harris, J. W.	JSC	Morgan, J. W.	NSG 9049	3718
13	UNIV OF TOLEDO	Connolley, D. J.	LERC	Rush, W. F.	NSG 3099	3273
13	UNIV OF UTAH	Randolph, L. P.	HQ-RT	Vali, V.	NASW 2967	3728
13	UNIV OF VIRGINIA	Beatty, M. E.	LARC	Batchman, T. E.	NSG 1567	3858
13	UNIV OF WASHINGTON	Schwenk, F. C.	HQ-RT	Hertzberg, A.	NGL 48-002-044	3931
13	UNIV WISC-MADISON	King, J. H.	HQ-ST	Scherb, F.	NGR 50-002-162	3993
13	UTAH STATE UNIV	Eiband, A. M.	GSFC	Banks, P. M.	NAS 5-24455	3736
13	UTAH STATE UNIV	Spencer, N. W.	GSFC	StMaurice, J. P.	NSG 5215	3741
13	UTAH STATE UNIV	Spencer, N. W.	GSFC	Foster, J. C.	NSG 5216	3742
13	VANDERBILT UNIVERSTY	Hohl, F.	LARC	Lee, J. H.	NCC 1 8	3521
13	VANDERBILT UNIVERSTY	Hohl, F.	LARC	Lee, J. H	NSG 1235	3522
13	VIRGINIA POLY INST	Smith, A.	LARC	Sanzone, G.	NSG 1020	3884
13	VIRGINIA STATE UNIV	Singh, J. J.	LARC	Stronach, C. E.	NSG 1342	3921
13	VIRGINIA STATE UNIV	Wilson, J. W.	LARC	Stronach, C. E.	NSG 1646	3922
13	WASHINGTON ST UNIV	Poppa, H. R.	ARC	Dickinson, J. T.	NCA 2-840801	3961
13	WASHINGTON ST UNIV	Poppa, H. R.	ARC	Dickinson, J. T.	NCA 2-840901	3962
13	WASHINGTON UNIVERSTY	Harris, J. W.	JSC	Walker, R. M.	NGL 26-008-065	2781
13	WASHINGTON UNIVERSTY	Heyman, J. S.	LARC	Miller, J. G	NSG 1601	2783
13	WILLIAMS COLLEGE	Reinhardt, V. S.	GSFC	Crampton, S. B.	NSG 5218	2621
13	WRIGHT STATE UNIV	DiCarlo, J. A.	LERC	Bambakidis, G.	NSG 3240	3295
13	XAVIER UNIV-LA	Wood, G. M.	LARC	Ioup, J. W.	NSG 1361	2293
13	YORK COLLEGE-NY	Quaide, W. L.	HQ-SL	Spergel, M S.	NSG 7454	3103
13	OREGON GRADUATE CTR	McKenzie, R. L.	ARC	Elliott, R. A.	NSG 2387	3316
19	ARIZONA STATE UNIV	Black, D. C.	ARC	Greeley, R.	NSG 2284	1079
19	ATHENS STATE COLLEGE	Zwiener, J. M.	MSFC	Workman, G. L.	NAS 8-32920	1017
19	BOSTON UNIVERSITY	Taylor, W. W.	HQ-ST	Mendillo, M	NSG 7254	2436
19	CALIF INST OF TECH	Harris, J. W.	JSC	Ahrens, T. J	NSG 9019	1232
19	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D F.	NAS 3-22259	3144
19	CASE WESTERN RESERVE	Mirtich, M. J.	LERC	Topich, J. A.	NSG 3131	3162
19	CASE WESTERN RESERVE	Mirtich, M. J.	LERC	Wallace, J. F.	NSG 3279	3181
19	CHRISTPHR NEWPRT COL	Wilson, J. W.	LARC	Chang, C. K.	NSG 1614	3755
19	COLLEGE OF WM & MARY	Smith, D. D.	LARC	Heeman, W.	NAS 1-9990	3756
19	COLLEGE OF WM & MARY	Cauffman, D P.	HQ-ST	Montgomery, D. C.	NSG 7416	3771
19	COLUMBIA UNIVERSITY	Smith, D. E.	GSFC	Scholz, C. H.	NGR 33-008-146	2930
19	COLUMBIA UNIVERSITY	Seltzer, S. M.	MSFC	Likins, P. A.	NAS 8-32212	2924
19	CORNELL UNIVERSITY	Gray, J. W.	WFC	Wray, J D.	NSG 6020	2979
19	HAMPTON INSTITUTE	Erickson, W. D.	LARC	Darden, G. C	NAS 1-14832	3778
19	HARVARD UNIVERSITY	Tate, F.	HQ-SP	Field, G. B.	NSG 7176	2476
19	HOUSTON BAPTIST UNIV	McCoy, J.	JSC	Warren, D. G	NSG 9076	3538
19	KENT STATE UNIV-KENT	Sater, B. L.	LERC	Gelerinter, E.	NAS 3-21945	3199
19	MASS INST OF TECH	Pepper, S. V.	LERC	Johnson, K. H.	NCC 3 1	2518
19	MICHIGAN STATE UNIV	Nakanishi, S.	LERC	Asmussen, J.	NSG 3299	2626
19	MORGAN STATE UNIV	Pohly, J. G.	HQ-LU	Proctor, N. K	NGT 21-025-006	2332
19	NEW MEX ST U-LAS CR	Hedin, A. E.	HQ-ST	Theimer, O. H.	NSG 7622	2892
19	OLD DOMINION UNIV	Fowler, W. B.	GSFC	Becher, J.	NSG 5053	3839
19	PENN STATE U-UNIV PK	Gray, J. W.	WFC	Ferguson, G. A.	NSG 6004	3415
19	PRINCETON UNIVERSITY	Williams, T. S., Jr.	LARC	Hargraves, R. B	NAS 1-9705	2833
19	RENSSELAER POLY-NY	Davidson, M. C	MSFC	Wiedemeier, H.	NAS 8-32639	3029
19	RENSSELAER POLY-NY	Gevarter, W. B.	HQ-RE	Shen, C. N.	NSG 7184	3044
19	STANFORD UNIVERSITY	Rubesin, M. W.	ARC	Reynolds, W. C.	NCC 2 15	1342
19	STANFORD UNIVERSITY	Snyder, C. T.	ARC	Karamcheti, K	NSG 2007	1371
19	STANFORD UNIVERSITY	Ostrow, H.	GSFC	MacOvski, A.	NAS 5-25043	1313
19	STANFORD UNIVERSITY	Davidson, M. C.	MSFC	Tiller, W A.	NAS 8-33110	1320
19	STANFORD UNIVERSITY	Kaiser, M. L.	HQ-ST	Crawford, F. W	NGL 05-020-176	1349
19	STANFORD UNIVERSITY	Kaiser, M. L.	HQ-ST	DaRosa, A V.	NGR 05-020-001	1354
19	STATE U NY-STONY BRK	Boese, R. W.	ARC	Boudart, M.	NCA 2-760801	3067
19	TEXAS A&M UNIVERSITY	Stonesifer, G. R.	GSFC	Harlan, J. C.	NAS 5-24383	3571
19	UNIV ALA-HUNTSVILLE	Morgan, S. H.	MSFC	Wu, S. T.	NAS 8-33132	1050

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19	UNIV ALA-HUNTSVILLE	Morgan, S. H.	MSFC	Wu, S. T.	NAS 8-33443	1054
19	UNIV ALASKA-FAIRBNKS	Gray, J. W.	WFC	Davis, T. N.	NSG 6014	1065
19	UNIV ALASKA-FAIRBNKS	Gray, J. W.	WFC	Hallinan, T. J.	NSG 6024	1066
19	UNIV ALASKA-FAIRBNKS	Gray, J. W.	WFC	Hallinan, T. J.	NSG 6028	1067
19	UNIV ALASKA-FAIRBNKS	Hedin, A. E.	HQ-ST	Swift, O. W.	NSG 7625	1069
19	UNIV ARKANSAS-FAYETV	Demel, K. J.	JSC	Waite, W. P.	NAS 9-14251	1164
19	UNIV CALIF-BERKELEY	King, J. H.	HQ-ST	Anderson, K. A.	NGL 05-003-017	1439
19	UNIV CALIF-BERKELEY	Kaiser, M. L.	HQ-ST	Mozer, F. S.	NSG 7401	1476
19	UNIV CALIF-L ANGELES	Riccitiello, S. R.	ARC	MacKenzie, J. D.	NSG 2321	1531
19	UNIV CALIF-L ANGELES	Wiskerchen, M. J.	HQ-ST	Kennel, C. F.	NGL 05-007-190	1517
19	UNIV CALIF-L ANGELES	Schmerling, E. R.	HQ-ST	Stenzel, R. L.	NSG 7616	1565
19	UNIV CALIF-SAN DIEGO	Rubesin, M. W.	ARC	Rosenblatt, M.	NSG 2376	1601
19	UNIV CALIF-SAN DIEGO	Kahn, W. D.	GSFC	Goodkind, J. M	NSG 5331	1611
19	UNIV CALIF-SAN DIEGO	Salzman, J. A.	LERC	Austin, R. W.	NAS 3-21386	1569
19	UNIV CALIF-SAN DIEGO	Woollam, J. A.	LERC	Webb, G. W.	NSG 3055	1604
19	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Suess, H. E.	NGL 05-009-005	1588
19	UNIV CALIF-SAN DIEGO	Schmerling, E. R.	HQ-ST	Alfven, H.	NSG 7623	1621
19	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Fuller, M. D.	NSG 9020	1658
19	UNIV COLORADO-BOLDR	Hall, C. F.	ARC	Stewart, I. A.	NAS 2-9477	1741
19	UNIV COLORADO-BOLDR	Bissell, E. E.	GSFC	Barth, C. A.	NSG 5103	1764
19	UNIV DC-VAN NESS	Chappelle, E. W.	GSFC	Watlington, R. A.	NSG 5290	1905
19	UNIV OF HAWAII-MANOA	Finley, C. J.	HQ-SL	Berg, E.	NSG 7179	2045
19	UNIV HOUSTON-HOUSTON	Jackson, J. T.	JSC	Morrow, J. R.	NAS 9-15521	3613
19	UNIV HOUSTON-HOUSTON	Gray, J. W.	WFC	Sheldon, W. R.	NSG 6008	3626
19	UNIV HOUSTON-HOUSTON	Wiskerchen, M. J.	HQ-ST	Sheldon, W. R.	NSG 7609	3632
19	UNIV ILLINOIS-URBANA	Gray, J. W.	WFC	Bowhill, S. A.	NGR 14-005-181	2118
19	UNIV OF IOWA	Hedin, A. E.	HQ-ST	Joyce, G.	NSG 7632	2220
19	UNIV MARYLAND-COL PK	Hedin, A. E.	HQ-ST	Wu, C. S.	NGL 21-002-005	2364
19	UNIV MICH-ANN ARBOR	Ruff, R. C.	MSFC	Carignan, G. R.	NAS 8-31987	2650
19	UNIV MICH-ANN ARBOR	Chappell, C. R.	MSFC	Carignan, G. R.	NAS 8-32332	2651
19	UNIV MICH-ANN ARBOR	Jones, C. T.	MSFC	Torr, M. R.	NAS 8-32569	2652
19	U MINN-MNPLS-ST PAUL	Morris, J. F.	LERC	Chanin, L. M.	NSG 3094	2714
19	U MINN-MNPLS-ST PAUL	Ballance, C. W., Jr.	WFC	Arnoldy, R. J.	NSG 6005	2719
19	U MINN-MNPLS-ST PAUL	Gray, J. W.	WFC	Nier, A. O.	NSG 6009	2720
19	U MINN-MNPLS-ST PAUL	Gray, J. W.	WFC	Cahill, L. J., Jr.	NSG 6021	2721
19	U MINN-MNPLS-ST PAUL	Taylor, W. H.	HQ-ST	Kellogg, P. J.	NSG 7108	2723
19	U MINN-MNPLS-ST PAUL	Cauffman, D. P.	HQ-ST	Cahill, L. J., Jr.	NSG 7237	2725
19	UNIV MO-ROLLA	Weigand, A. J.	LERC	Yasuda, H. K.	NSG 3199	2771
19	UNIV OF NEVADA-RENO	Smith, R. E.	MSFC	Telford, J. W.	NAS 8-31441	2809
19	UNIV NEW HAMP-DURHAM	Wende, C. D.	GSFC	Arnoldy, R. L.	NAS 5-24328	2820
19	UNIV NEW HAMP-DURHAM	Gray, J. W.	WFC	Arnoldy, R. L.	NSG 6022	2829
19	UNIV OF PENNSYLVANIA	Brewer, W. D.	LARC	Vogel, F. L.	NSG 1596	3430
19	UNIV OF PITTSBURGH	Gray, J. W.	WFC	Zipf, E. C.	NSG 6011	3448
19	UNIV STHN COLORADO	Lofgren, G.	JSC	Smith, R. K.	NSG 9051	1812
19	UNIV SO MISSISSIPPI	Wood, G. M.	LARC	Rayborn, G. H.	NSG 1515	2753
19	UNIV TEXAS-AUSTIN	Kahn, W. D.	GSFC	Tapley, B. D.	NAS 5-25018	3640
19	UNIV TEXAS-AUSTIN	White, W. W.	GSFC	Shelus, P. J.	NSG 7162	3679
19	UNIV TEXAS-AUSTIN	Flinn, E. A.	HQ-ER	Dorman, J. H.	NSG 7159	3678
19	UNIV TEXAS-AUSTIN	Shirey, W. H.	HQ-SM	Silverberg, E. C.	NASW 2974	3652
19	UNIV TEXAS-DALLAS	Chappell, C. R.	MSFC	Hanson, W. B.	NAS 8-31775	3698
19	UNIV TEXAS-DALLAS	Gray, J. W.	WFC	Christensen, A. B.	NSG 6023	3708
19	UNIV OF TOLEDO	Fellows, R. F.	HQ-SL	Delsemme, A. H.	W-14168	3291
19	UNIV OF UTAH	Kourtides, D. A.	ARC	Hughes, B. M.	NAS 2-10064	3723
19	UTAH STATE UNIV	Gray, J. W.	WFC	Williamson, P. R.	NSG 6027	3743
19	VIRGINIA POLY INST	Parker, L. C.	WFC	Powell, N. L.	NSG 6029	3917
19	VIRGINIA POLY INST	Parker, L. C.	WFC	Powell, N. L.	NSG 6030	3918
19	VIRGINIA POLY INST	Parker, L. C.	WFC	Powell, N. L.	NSG 6031	3919
19	WASHINGTON UNIVERSTY	Williams, R.	JSC	Haskin, L. A.	NSG 9073	2793

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21	ALABAMA A&M UNIV	Smith, O. E.	MSFC	Temple, E. C.	NSG 8065	1011
21	ARIZONA STATE UNIV	Lee, G.	MSFC	Woodfin, M. A.	NAS 8-32230	1072
21	BOWIE STATE COLLEGE	Lefferts, E. J.	GSFC	Srivastava, S.	NGR 21-027-004	2296
21	COLLEGE OF WM & MARY	Harris, J. L.	LARC	Donegan, M. K.	NSG 1435	3766
21	COLORADO STATE UNIV	Murphy, J. D.	ARC	Prenter, P. M.	NCA 2-165901	1716
21	DREXEL UNIVERSITY	Zeleznik, F. J.	LERC	Rosen, G. H.	NSG 3090	3354
21	DUKE UNIVERSITY	Ford, W. F.	LERC	Smith, D. A.	NSG 3160	3108
21	GEORGE WASHINGTON U	Harris, J. L.	LARC	Foley, J. D.	NSG 1508	1866
21	GEORGE WASHINGTON U	Elber, W.	LARC	Gross, D.	NSG 1556	1868
21	HAMPTON INSTITUTE	Haigler, G. W.	LARC	Shan, S. N.	NCC 1 7	3782
21	HAMPTON INSTITUTE	Hogge, J. E.	LARC	Hargrove, A.	NSG 1478	3785
21	HOWARD UNIVERSITY	Laughlin, C. R.	GSFC	Gill, T. L.	NSG 5295	1893
21	IOWA STATE UNIV	Shoosmith, J. N.	LARC	Feinberg, R. B.	NSG 1538	2193
21	LEHIGH UNIVERSITY	Everett, R. A., Jr.	LARC	Erdogan, F.	NGR 39-007-011	3364
21	MISSISSIPPI STATE U	Smith, R. E.	LARC	Thompson, J. F.	NSG 1577	2748
21	NEW YORK UNIVERSITY	Warming, R. F.	ARC	Harten, A.	NCA 2-525901	2999
21	NEW YORK UNIVERSITY	South, J. C., Jr.	LARC	Garabedian, P. R.	NSG 1579	3006
21	NEW YORK UNIVERSITY	Knight, J. C.	LARC	Schwartz, J. T.	NSG 1610	3007
21	NO CAR A&T STATE U	Ramapriyan, H. K.	GSFC	Alexander, W. E.	NSG 5406	3115
21	OLD DOMINION UNIV	Waller, M. C.	LARC	Rana, D. S.	NSG 1565	3831
21	OREGON STATE UNIV	Wilson, D. E.	ARC	Murray, R. J.	NCA 2-586901	3321
21	PENN STATE U-UNIV PK	Labovitz, M.	GSFC	McMurtry, G. J.	NAS 5-25702	3379
21	STANFORD UNIVERSITY	Romiez, M. P.	ARC	VanCleemput, W. M.	NCA 2-745903	1330
21	STANFORD UNIVERSITY	Lomax, H.	ARC	VanDyke, M. D.	NCA 2-745909	1335
21	STANFORD UNIVERSITY	Lomax, H.	ARC	Golub, G. H.	NCA 2-745912	1338
21	STANFORD UNIVERSITY	Shoosmith, J. N.	LARC	Golub, G. H.	NSG 1443	1370
21	UNIV CALIF-BERKELEY	Lomax, H.	ARC	Miller, K.	NCA 2-50901	1434
21	UNIV DC-MT VERNON SQ	Fuchs, A. J.	GSFC	Bakshi, J. S.	NSG 5122	1902
21	UNIV ILLINOIS-CHICGO	Randolph, L. P.	HQ-RT	Barcilon, V.	NSG 7247	2111
21	UNIV ILLINOIS-URBANA	Foudriat, E. C.	LARC	Campbell, R. H.	NSG 1471	2121
21	UNIV MARYLAND-COL PK	Gevarter, W. B.	HQ-RE	Minker, J.	NGR 21-002-270	2371
21	UNIV OF MIAMI	Tucker, J. H.	LARC	Tapia, M. A.	NSG 1436	1961
21	UNIV NEW HAMP-DURHAM	MacElroy, R. D.	ARC	Moore, B.	NCA 2-512901	2824
21	UNIV OF NEW ORLEANS	Lambiotte, J. J., Jr.	LARC	Ioup, G. E.	NSG 1648	2291
21	UNIV OF SANTA CLARA	Hofman, L. B.	ARC	Danielson, R. L.	NCA 2-685907	1681
21	UNIV OF SO FLORIDA	Park, S. K.	LARC	Tsokos, C. P.	NSG 1487	1966
21	UNIV OF SOUTHERN CAL	Jaffee, R. L.	ARC	Segal, G. A.	NSG 2351	1700
21	UNIV TEXAS-AUSTIN	Fuchs, A. J.	GSFC	Tapley, B. D.	NSG 5154	3670
21	UNIV TEXAS-AUSTIN	Shoosmith, J. N.	LARC	Daniel, J. W.	NSG 1440	3659
21	UNIV TEXAS-AUSTIN	Smith, R. E.	LARC	Sherman, A. H.	NSG 1632	3663
21	UNIV OF VIRGINIA	Bowles, R. L.	LARC	Brown, R. L., Jr.	NSG 1335	3853
21	WICHITA STATE UNIV	Smith, J. M.	LERC	Jordan, K. D.	NSG 3186	2256
22	CAL STATE U-FULLERTN	Tobias, L.	ARC	Dear, R. G.	NCA 2-253801	1240
22	CAL STATE U-NRTHRDGE	Greene, E. P.	GSFC	Nathanson, W. I.	NAS 5-24436	1249
22	COLLEGE OF WM & MARY	Foudriat, E. C.	LARC	Feyock, S.	NSG 1626	3769
22	GEORGIA INST OF TECH	Pearson, R.	NSTL	Faust, N. L.	NAS13-84	1990
22	MASS INST OF TECH	Shoosmith, J. N.	LARC	Moses, J.	NSG 1323	2546
22	MISSISSIPPI STATE U	Darden, J. H.	MSFC	Mitchell, J. R.	NAS 8-32810	2735
22	NO CAROLINA STATE U	Park, S. K.	LARC	Roulier, J. A.	NSG 1549	3133
22	PURDUE UNIVERSITY	Gordon, F., Jr.	GSFC	Phillips, T. L.	NAS 5-24462	2146
22	SAN JOSE STATE UNIV	Chyu, W. J.	ARC	Mitchem, J.	NCA 2-675901	1273
22	TEXAS A&M UNIVERSITY	Broune, I. D.	JSC	Freund, R. J.	NAS 9-13894	3578
22	TEXAS A&M UNIVERSITY	Browne, I. D.	JSC	Guseman, L. F., Jr.	NAS 9-14689	3580
22	UNIV ALA-HUNTSVILLE	Jones, R. E.	MSFC	Shiva, S. G.	NAS 8-33096	1049
22	UNIV OF ARIZONA	Hall, C. F.	ARC	Baker, L. R.	NAS 2-10089	1095
22	UNIV OF GEORGIA	Harrison, J. O.	HQ-ET	Hale, H.	NASW 3247	2021
22	UNIV MARYLAND-COL PK	Whiting, E. E.	HQ-RT	Reiger, C. J.	NSG 7253	2407
22	UNIV MO-COLUMBIA	Migneault, G. E.	LARC	Miller, D. R.	NSG 1540	2761

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22	U PUERTO RICO-RIO PI	Lopez, J. J.	GSFC	Cabassa, H. D.	NAS 5-25844	4022
22	UNIV OF SANTA CLARA	Knauer, S. C.	ARC	Danielson, R. L.	NCA 2-685905	1679
22	UNIV TEXAS-AUSTIN	Shipman, F. S.	LARC	Browne, J. C.	NSG 1446	3660
22	UNIV TEXAS-AUSTIN	Will, R. W.	LARC	Browne, J. C.	NSG 1479	3661
22	UNIV TEXAS-AUSTIN	Schiess, J. R.	LARC	Cline, A. K.	NSG 1544	3662
22	UNIV OF VIRGINIA	Will, R. W.	LARC	Berman, W. J.	NAS 1-14862	3841
22	UNIV OF VIRGINIA	Will, R. W.	LARC	Pratt, T. W.	NSG 1458	3856
31	ALCORN STATE UNIV	Grebowsky, J.	GSFC	Paul, M. P.	NGR 25-012-001	2729
31	ARIZONA STATE UNIV	Spence, D. C.	LARC	Greeley, R.	NAS 1-15168	1071
31	ARIZONA STATE UNIV	Alexander, M. B.	MSFC	Logan, E., Jr.	NAS 8-32357	1073
31	ARIZONA STATE UNIV	Dwornik, S. E.	HQ-SL	Greeley, R.	NSG 7548	1085
31	AUGSBURG COLLEGE	Spencer, N. W.	GSFC	Engebretson, M. J.	NSG 5285	2696
31	BOSTON UNIVERSITY	Guynes, B. V.	MSFC	Mendillo, M.	NAS 8-32844	2429
31	CALIF INST OF TECH	Pollack, J. B.	ARC	Yung, Y. L.	NSG 2283	1205
31	CALIF INST OF TECH	Nelsen, E. D.	GSFC	Ingersoll, A. P.	NAS 5-22965	1173
31	CALIF INST OF TECH	Hansen, J. E.	GSFC	Yung, Y. L.	NSG 5301	1212
31	CALIF INST OF TECH	Donley, J. L.	GSFC	Zirin, H.	NSG 5314	1213
31	CALIF INST OF TECH	Donley, J. L.	GSFC	Zirin, H.	NSG 5327	1214
31	CALIF INST OF TECH	Mitz, M. A.	HQ-SL	Yung, Y. L.	NSG 7376	1224
31	CAL STATE U-FULLERTN	Murphy, R. E.	HQ-SL	Ryan, J. A.	NSG 7614	1243
31	CAL STATE U-NRTHRDGE	Donley, J. L.	GSFC	Martin, S. F.	NSG 5324	1251
31	CAL STATE U-NRTHRDGE	Donley, J. L.	GSFC	Chapman, G. A.	NSG 5330	1252
31	CAL STATE U-NRTHRDGE	Donley, J. L.	GSFC	Chapman, G. A.	NSG 5333	1253
31	CITY COLLEGE OF N Y	Hansen, J. E.	GSFC	Spar, J.	NGR 33-013-086	2909
31	CLEMSON UNIV-CLEMSON	Rodgers, E. B.	GSFC	Gentry, R. C.	NSG 5349	3470
31	CLEMSON UNIV-CLEMSON	Wexler, R.	GSFC	Gentry, R. C.	NSG 5350	3471
31	COLLEGE OF WM & MARY	Sullivan, E. M.	LARC	Smith, M. A.	NCC 1-3	3760
31	COLLEGE OF WM & MARY	Sullivan, E. M.	LARC	Smith, M. A.	NCC 1-16	3761
31	COLLEGE OF WM & MARY	Sullivan, E. M.	LARC	Park, J. H.	NSG 1203	3764
31	COLORADO STATE UNIV	Schnetzler, C. C.	GSFC	Melver, J. L.	NAS 5-25760	1717
31	COLORADO STATE UNIV	Theon, J. S.	GSFC	Reiter, W. R.	NGR 06-002-098	1718
31	COLORADO STATE UNIV	Neil, F. V.	GSFC	Marlatt, W. E.	NSG 5073	1732
31	COLORADO STATE UNIV	Rodgers, E. B.	GSFC	VonderHaar, T. H.	NSG 5268	1733
31	COLORADO STATE UNIV	Ahring, A.	GSFC	VonderHaar, T. H.	NSG 5259	1734
31	COLORADO STATE UNIV	Steele, A.	GSFC	Reiter, E. R.	NSG 5340	1735
31	COLORADO STATE UNIV	Heymsfield, G. M.	GSFC	Cotton, W. R.	NSG 5341	1736
31	COLORADO STATE UNIV	Curran, R. J.	GSFC	Cox, S. K.	NSG 5357	1738
31	COLORADO STATE UNIV	Harrison, E. F.	LARC	VonderHaar, T. H.	NAS 1-15550	1709
31	COLORADO STATE UNIV	Easter, W. S.	LARC	Meroney, R. N.	NAS 1-13925	1710
31	COLUMBIA UNIVERSITY	Tadeusz, P.	GSFC	Broecker, W. S.	NCC 5-16	2928
31	COLUMBIA UNIVERSITY	West, G. S., Jr.	MSFC	Balachandran, N. K.	NAS 8-33378	2925
31	CORNELL UNIVERSITY	Pirraglia, J. A.	GSFC	Gierasch, P. J.	NAS 5-23785	2952
31	CORNELL UNIVERSITY	Murphy, R. E.	HQ-SL	Sagan, C. E.	NGL 33-010-082	2956
31	CORNELL UNIVERSITY	Murphy, R. E.	HQ-SL	Gierasch, P. J.	NGL 33-010-180	2958
31	CORNELL UNIVERSITY	Quaide, W. E.	HQ-SL	Burns, J. A.	NSG 7445	2986
31	CORNELL UNIVERSITY	Murphy, R. E.	HQ-SL	Gierasch, P. J.	NSG 7612	2995
31	DARTMOUTH COLLEGE	Hansen, J. E.	GSFC	Self, S.	NSG 5145	2816
31	DREXEL UNIVERSITY	Ucellini, L. W.	GSFC	Kreitzberg, C.	NSG 5162	3356
31	DREXEL UNIVERSITY	Russell, J. M., III	LARC	House, F. B.	NAS 1-14393	3346
31	DREXEL UNIVERSITY	Smith, G. L.	LARC	House, F. B.	NSG 1545	3351
31	DREXEL UNIVERSITY	Black, R. E.	MSFC	Lord, A. E.	NAS 8-33372	3348
31	DREXEL UNIVERSITY	Holland, A. C.	WFC	Hackney, R. L.	NSG 6007	3357
31	DUKE UNIVERSITY	Kakar, R. K.	HQ-ST	DeLucia, F. C.	NSG 7540	3109
31	FAIRFIELD UNIVERSITY	Heath, D. F.	GSFC	McElaney, J. H.	NCC 5-6	1813
31	FAIRFIELD UNIVERSITY	Heath, D. F.	GSFC	McElaney, J. H.	NGR 07-010-002	1814
31	FLORIDA STATE UNIV	McMaster, L. R.	LARC	Craig, R. A.	NAS 1-14930	1916
31	FLORIDA STATE UNIV	Kakar, R. K.	HQ-EB	Hunt, R. H.	NSG 7473	1919
31	FLORIDA STATE UNIV	Murphy, R. E.	HQ-SL	Hess, S. K.	NSG 7629	1920

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31	GEORGE WASHINGTON U	Orr, H. D., III	LARC	Liebowitz, H.	NCC 1 1	1847
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Liebowitz, H.	NCC 1 19	1849
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Rogerson, A. C.	NSG 1026	1857
31	GEORGE WASHINGTON U	Callis, L. B., Jr.	LARC	Liebowitz, H	NSG 1216	1861
31	GEORGE WASHINGTON U	Costen, R. C.	LARC	Rogerson, A. C.	NSG 1251	1862
31	GEORGE WASHINGTON U	Smith, G. L.	LARC	Liebowitz, H	NSG 1555	1867
31	GEORGIA INST OF TECH	Young, R. E.	ARC	Alyea, F. N.	NCC 2 9	1991
31	GEORGIA INST OF TECH	Ragent, B.	ARC	Grams, G. W.	NSG 2306	1996
31	GEORGIA INST OF TECH	Pollack, J. B.	ARC	Grams, G. W.	NSG 2363	1999
31	GEORGIA INST OF TECH	LeVine, D. M.	GSFC	Wilson, C. S.	NAS 5-24148	1983
31	GEORGIA INST OF TECH	King, J. L.	GSFC	Dees, J. W	NSG 5082	2008
31	GEORGIA INST OF TECH	Atlas, D.	GSFC	Metcalf, J. I	NSG 5220	2009
31	GEORGIA INST OF TECH	Lawrence, G. F.	LARC	Zimmer, R. P.	NAS 1-14351	976
31	GEORGIA INST OF TECH	McMaster, L. R.	LARC	Grams, G. W.	NSG 1493	1993
31	GEORGIA INST OF TECH	McMaster, L. R	LARC	Cunrold, D. M.	NSG 1643	1995
31	GEORGIA INST OF TECH	Smith, O. F	MSFC	Justus, C. G.	NAS 8-32897	1986
31	GEORGIA INST OF TECH	Fellows, R. F	HQ-SL	Edwards, H. D.	NGL 11-002-004	1992
31	HARVARD UNIVERSITY	Donley, J. L.	GSFC	Reeves, F. M.	NAS 5-23494	2445
31	HARVARD UNIVERSITY	Rice, C. F.	GSFC	McElroy, M. B.	NAS 5-24134	2446
31	HARVARD UNIVERSITY	Halem, M.	GSFC	Lindzen, R. S	NSG 5160	2464
31	HARVARD UNIVERSITY	Williams, T. S., Jr	LARC	McElroy, M. B.	NAS 1-10492	2431
31	HARVARD UNIVERSITY	Roman, N. G	HQ-SC	Parkinson, W. H.	NSG 7304	2477
31	HARVARD UNIVERSITY	Murphy, R. E.	HQ-SL	Goody, R. M.	NGL 22-007-228	2454
31	HARVARD UNIVERSITY	Murphy, R. E.	HQ-SL	Pipkin, F. M.	NSG 7095	2475
31	HARVARD UNIVERSITY	Seals, R. K., Jr.	HQ-ST	Anderson, J	NASW 3242	3451
31	HARVARD UNIVERSITY	Kakar, R. K.	HQ-ST	McElroy, M. B.	NSG 2031	2460
31	IOWA STATE UNIV	Halem, M	GSFC	Chen, T.	NSG 5339	2199
31	JOHNS HOPKINS UNIV	Rice, C. F.	GSFC	Doering, J. P.	NAS 5-11415	2303
31	KANSAS STATE UNIV	Baldwin, R. R.	JSC	Kanemasu, E. T.	NAS 9-14899	2222
31	KANSAS STATE UNIV	Murphy, R. E.	HQ-SL	Williams, D	NGL 17-001-026	2223
31	LE MOYNE-OWEN COL	Woods, D. C	LARC	Matthews, N.	NSG 1593	3485
31	MASS INST OF TECH	Poppoff, L. G	ARC	Prinn, R. G	NSG 2010	2555
31	MASS INST OF TECH	Poppoff, L. G	ARC	Alyea, F. N.	NSG 2196	2561
31	MASS INST OF TECH	Theon, J. S.	GSFC	Staelin, D. H.	NAS 5-21980	2495
31	MASS INST OF TECH	Halem, M.	GSFC	Charney, J. G.	NGR 22-009-727	2538
31	MASS INST OF TECH	Hansen, J. E.	GSFC	Stone, P. H.	NSG 5113	2584
31	MASS INST OF TECH	Halem, M.	GSFC	Charney, J. G.	NSG 5166	2586
31	MASS INST OF TECH	McMaster, L. R.	LARC	Connold, D. M.	NAS 1-14932	2486
31	MASS INST OF TECH	Murphy, R. E.	HQ-SL	Lewis, J. S.	NGR 22-009-521	2525
31	MASS INST OF TECH	Murphy, R. E.	HQ-SL	McCord, T. B.	NSG 038	2608
31	MORGAN STATE UNIV	Duncan, C. H.	GSFC	Oliver, F. W	NSG 5401	2334
31	MURRAY STATE UNIV	Atwell, B. H.	NSTL	Franklin, W. Y.	NAS13-111	3296
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E.	NSG 5034	3009
31	NEW YORK UNIVERSITY	Halem, M.	GSFC	Isaacson, E	NSG 5130	3010
31	NEW YORK UNIVERSITY	Murphy, R. E	HQ-SL	Hoffert, M. I.	NSG 7591	3013
31	NO CAROLINA STATE U	Heppner, J. P	GSFC	Mauring, E. R.	NAS 5-25751	3118
31	OHIO STATE UNIV	Murphy, J. P.	HQ-ER	Mueller, I. I.	NASW 3194	3214
31	OHIO STATE UNIV	Simon, N. K.	HQ-ST	Seliga, T. A.	NASW 3149	3213
31	OHIO STATE UNIV	Kakar, R. K.	HQ-ST	Shaw, J. H.	NSG 7479	3241
31	OKLAHOMA STATE UNIV	Vitale, J. A	HQ-ET	Walsh, S.	NSG 7640	3304
31	OLD DOMINION UNIV	Reichle, H. G., Jr	LARC	Kindle, E. C	NCC 1 2	3791
31	OLD DOMINION UNIV	Dodgen, J. A.	LARC	Kindle, E. C	NSG 113	3797
31	OLD DOMINION UNIV	McMaster, L. R.	LARC	Chu, W. P	NSG 1341	3807
31	OLD DOMINION UNIV	Reichle, H. G., Jr.	LARC	Kindle, E. C.	NSG 1394	4012
31	OLD DOMINION UNIV	Beck, S. M.	LARC	Kindle, E. C.	NSG 1[illegible]	4013
31	OLD DOMINION UNIV	Hoell, J. M.	LARC	Copeland, G. E.	NSG 13[illegible]	4[illegible]
31	OLD DOMINION UNIV	Suttles, J. T.	LARC	Tiwari, S. N.	NSG 1622	3627
31	OREGON STATE UNIV	Halem, M.	GSFC	Esbensen, S.	NSG 5308	3726

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31	OREGON STATE UNIV	Adler, R. F.	GSFC	Decker, F. W.	NSG 5343	3327
31	OREGON STATE UNIV	Halem, M.	GSFC	Gates, W. L.	NSG 5353	3328
31	OREGON STATE UNIV	Hill, C. K.	MSFC	Barber, D. A.	NAS 8-32694	3319
31	PENN STATE U-UNIV PK	Oseroff, H.	GSFC	Carlson, T. N.	NAS 5-24264	3376
31	PENN STATE U-UNIV PK	Ucellini, L. W.	GSFC	Anthes, R. A.	NSG 5205	3411
31	PENN STATE U-UNIV PK	Greaves, J. R.	GSFC	Clark, J. H.	NSG 5347	3414
31	PENN STATE U-UNIV PK	Duke, J. R.	WFC	Olivero, J.	NAS 6-2726	3380
31	PENN STATE U-UNIV PK	Schmidlin, F. J.	WFC	Clark, J. H.	NAS 6-2818	3381
31	PENN STATE U-UNIV PK	Schmidlin, F. J.	WFC	Hale, L. C.	NAS 6-2826	3382
31	PENN STATE U-UNIV PK	Tilford, S. G.	HQ-ST	Hale, L. C.	NSG 7350	3418
31	POLY INST OF NY	Pirraglia, J. A.	GSFC	Gross, S. H.	NAS [illegible]-25076	3015
31	POLY INST OF NY	Spencer, N. W.	GSFC	Gross, S. H.	NSG 5264	3024
31	POLY INST OF NY	Murphy, R. E.	HQ-SL	Gross, S. H.	NGR 33-006-068	3016
31	RENSSELAER POLY-NY	Gevarter, W. B.	HQ-RT	Yerazunis, S. W.	NASW 3279	3033
31	RENSSELAER POLY-NY	Fellows, R. F.	HQ-SL	Harteck, P.	NGL 33-018-007	3035
31	RICE UNIVERSITY	Teegarden, B. J.	GSFC	Haymes, R. C.	NAS 5-25032	3543
31	RICE UNIVERSITY	Spencer, N. W.	GSFC	Reiff, P. H.	NSG 5286	3556
31	RICE UNIVERSITY	Quaide, W. L	HQ-SL	Michel, F. C.	NSG 7032	3558
31	RICE UNIVERSITY	Fellows, R. F.	HQ-SL	Chamberlain, J. W.	NSG 7043	3559
31	RICE UNIVERSITY	Murphy [illegible]	HQ-SL	Stebbings, R. F.	NSG 7386	3563
31	ST U NY COL-PURCHASE	Halem, [illegible]	GSFC	Tenenbaum, J.	NSG 5077	3091
31	ST LOUIS UNIVERSITY	Hill, C. K.	MSFC	Fuelberg, H. E	NAS 8-32838	2754
31	ST LOUIS UNIVERSITY	Hill, C. K.	MSFC	Fuelberg, H. E.	NAS 8-33370	2755
31	SAN DIEGO STATE UNIV	Levine, J. S.	LARC	Angione, R. J	NSG 1430	1262
31	SAN JOSE STATE UNIV	Whitten, R. C.	ARC	Riegel, C. A.	NCA 2-675809	1271
31	SAN JOSE STATE UNIV	Pollack, J. B.	ARC	Riegel, C. A.	NCC 2 2	1281
31	SAN JOSE STATE UNIV	Swan, P. R.	ARC	Bornstein, R. D	NCC 2 [illegible]	1284
31	SAN JOSE STATE UNIV	Young, R. E.	ARC	Riegel, C. A.	NCC 2 17	1287
31	SAN JOSE STATE UNIV	Whitten, R. C.	ARC	Riegel, C. A.	NSG 2130	1289
31	SAN JOSE STATE UNIV	Woeller, F. H.	ARC	Mayer, L. A.	NSG 2315	1298
31	SO UNIV-BATON ROUGE	O'Neal, R. L.	LARC	Scott, R. L., Jr.	NAS 1-1533[illegible]	2279
31	STANFORD UNIVERSITY	Halem, M.	GSFC	Spreiter, J. R.	NSG 5254	1401
31	STANFORD UNIVERSITY	Guynes, B. V.	MSFC	Darosa, A. V	NAS 8-32852	1318
31	STANFORD UNIVERSITY	Murphy, R. E	HQ-SL	Eshleman, V. R.	NGL 05-020-014	1347
31	STATE UNIV NY-ALBANY	Page, W. A.	ARC	Lazrus, A. L.	NSG 2386	3053
31	STATE UNIV NY-ALBANY	Holdeman, J. D.	LERC	Falconer, P.	NSG 3138	3055
31	STATE UNIV NY-ALBANY	Clifton, K. S.	MSFC	Schuerman, D.	NAS 8-32485	3048
31	STATE UNIV NY-ALBANY	Turner, R. E.	MSFC	Orville, R. E.	NAS 8-33380	3051
31	STATE UNIV NY-ALBANY	Murphy, R. E.	HQ-SL	Weinberg, J. L.	NSG 7093	3057
31	STATE UNIV NY-ALBANY	Greenwood, L. R.	HQ-ST	Kiang, C. S.	NSG 7222	3058
31	STATE U NY-STONY BRK	Stewart, R. W	GSFC	Hogan, J. S.	NCC 5 7	3070
31	STATE U NY-STONY BRK	Hansen, J. E.	GSFC	Owen, T.	NGR 33-015-165	3075
31	STATE U NY-STONY BRK	Stewart, R. W.	GSFC	Hogan, J. S.	NSG 5102	3079
31	STATE U NY-STONY BRK	Adler, R F.	GSFC	Atlas, R. M.	NSG 5271	3082
31	STATE U NY-STONY BRK	Murphy, R. E.	HQ-SL	Varanasi, P.	NGR 33-015-139	3073
31	TENNESSEE TECH U	Humphries, W. R.	MSFC	Griggs, E. I.	NAS 8-31564	3490
31	TEXAS A&M UNIVERSITY	Schmugge, T. J.	GSFC	McFarland, M. J	NSG 5193	3601
31	TEXAS A&M UNIVERSITY	Hill, C. K.	MSFC	Scoggins, J. R.	NAS 8-31773	3575
31	TEXAS A&M UNIVERSITY	Fellows, R. F.	HQ-SL	Plass, G. N	NGR 44-001-117	3592
31	UNIV ALA-UNIVERSITY	Peters, P. N.	MSFC	Bertsch, W.	NAS 8-33501	1060
31	UNIV ALASKA-FAIRBNKS	King, J. H.	HQ-ST	Akasofu, S.	NSG 7447	1068
31	UNIV OF ARIZONA	Hall, C. F.	ARC	Barnes, C. H., Jr.	NAS 2-9487	1094
31	UNIV OF ARIZONA	Murphy, J. P.	ARC	Fink, U. W	NSG 2349	1127
31	UNIV OF ARIZONA	Sours, W. T.	GSFC	Smith, B. A.	NAS 5-25484	1098
31	UNIV OF ARIZONA	Dunkelman, L	GSFC	Martineck, S	NCA 5-76	1107
31	UNIV OF ARIZONA	Dozier, B.	GSFC	Martineck, S.	NCA 5-93	1108
31	UNIV OF ARIZONA	LeVine, D. M.	GSFC	Krider, E. P	NSG 5023	1129
31	UNIV OF ARIZONA	Schmugge, T. J.	GSFC	Evans, D. D.	NSG 5279	1132

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31	UNIV OF ARIZONA	Jafferis, W.	KSC	Krider, E. P.	NAS10-8518	1106
31	UNIV OF ARIZONA	McCormick, M. P.	LARC	Herman, B. M.	NAS 1-14332	1090
31	UNIV OF ARIZONA	McMaster, L. R.	LARC	Herman, B. M.	NAS 1-14928	1091
31	UNIV OF ARIZONA	Fellows, R. F.	HQ-SL	Hoenig, S. A.	NGL 03-002-019	1111
31	UNIV OF ARIZONA	Murphy, R. E.	HQ-SL	Hunten, D. M.	NSG 7558	1154
31	UNIV OF ARIZONA	Murphy, R. E.	HQ-SL	Tomasko, M. G.	NSG 7573	1155
31	UNIV OF ARIZONA	Newton, G. P.	HQ-ST	Hunten, D. M.	NSG 7485	1151
31	UNIV ARKANSAS-FAYETV	Falls, L. W.	MSFC	Tubbs, J. D.	NAS 8-31550	1162
31	UNIV ARKANSAS-FAYETV	Smith, O. E.	MSFC	Tubbs, J. D.	NAS 8-33224	1163
31	UNIV CALIF-BERKELEY	Fellows, R. F.	HQ-SL	Pimental, G. C.	NGL 05-003-286	1441
31	UNIV CALIF-BERKELEY	Smith, M. J.	HQ-SL	Lin, R. P.	NSG 7277	1474
31	UNIV CALIF-DAVIS	Millard, J. P.	ARC	Hatfield, J. L.	NCA 2-180901	1487
31	UNIV CALIF-IRVINE	Seals, R. K., Jr.	HQ-EB	Molina, M. J.	NSG 7208	1498
31	UNIV CALIF-L ANGELES	Hall, C. F.	ARC	Russell, C. T.	NAS 2-9491	1503
31	UNIV CALIF-L ANGELES	Ehernberger, L. J.	DFRC	Wurtele, M. G.	NSG 4001	1536
31	UNIV CALIF-L ANGELES	Ehernberger, L. J.	DFRC	Wurtele, M. G.	NSG 4024	1538
31	UNIV CALIF-L ANGELES	Halem, M.	GSFC	Arakawa, A.	NGR 05-007-328	1523
31	UNIV CA[illegible] L ANGELES	Reed, E. I.	GSFC	Thorne, R. M.	NSG 5190	1542
31	UNIV CALIF-L ANGELES	Murphy, R. E.	HQ-SL	Schubert, G.	NSG 7164	1550
31	UNIV CALIF-L ANGELES	Murphy, R. E.	HQ-SL	Swinson, W. F.	NSG 7239	1552
31	UNIV CALIF-L ANGELES	Dwornik, S. E.	HQ-SL	Coleman, P. J., Jr.	NSG 7295	1554
31	UNIV CALIF-L ANGELES	Murphy, R. E.	HQ-SL	Martin, T. Z.	NSG 7594	1564
31	UNIV CALIF-SAN DIEGO	Wende, C. D.	GSFC	McIlwain, C. E.	NAS 5-23705	1573
31	UNIV CALIF-SAN DIEGO	Donley, J. L.	GSFC	Hudson, H. S.	NSG 5321	1609
31	UNIV CALIF-SAN DIEGO	Donley, J. L.	GSFC	Hudson, H. S.	NSG 5322	1610
31	UNIV CALIF-SAN DIEGO	Sullivan, E. M.	LARC	Cicerone, R. J.	NSG 1590	1599
31	UNIV CALIF-SAN DIEGO	Aucremanne, M. J.	HQ-SC	McIlwain, C. E.	NASW 2996	1582
31	UNIV OF CENTRAL FLA	Smith, O. E.	MSFC	Somerville, P. N.	NAS 8-33071	1923
31	UNIV OF CHICAGO	Adler, R. F.	GSFC	Srivastava, R. C.	NSG 5402	2100
31	UNIV OF CHICAGO	Guynes, B. V.	MSFC	Meyer, P.	NAS 8-32828	2078
31	UNIV OF CHICAGO	Dodge, J. C.	HQ-EB	Fujita, T. T.	NGR 14-001-008	2090
31	UNIV OF CHICAGO	Kaluzienski, L. J.	HQ-SC	Muller, D.	NSG 7464	2105
31	UNIV OF CHICAGO	Fellows, R. F.	HQ-SL	Clayton, R. N.	NGR 14-001-194	2093
31	UNIV OF CHICAGO	Seals, R. K., Jr.	HQ-ST	Kaplan, [illegible]. D.	NSG 7356	2104
31	UNIV COLORADO-BOLDR	Rice, C. F.	GSFC	Barth, C. A.	NAS 5-11405	1742
31	UNIV COLORADO-BOLDR	Gemmell, J. D.	GSFC	Barth, C. A.	NAS 5-22409	1743
31	UNIV COLORADO-BOLDR	Rice, C. F.	GSFC	Stewart, A. I.	NAS 5-23808	1746
31	UNIV COLORADO-BOLDR	Stephanides, C. C.	GSFC	Smith, M. L.	NAS 5-25887	1747
31	UNIV COLORADO-BOLDR	Reber, C. A.	GSFC	London, J.	NSG 5153	1765
31	UNIV COLORADO-BOLDR	Donley, J. L.	GSFC	Gebbie, K. B.	NSG 5318	1771
31	UNIV COLORADO-[illegible]OLDR	[illegible]eed, E. I.	GSFC	Rusch, D. W.	NSG 5372	1774
31	UNIV COLORADO-BOLDR	Brunk, W. E.	HQ-SL	Barth, C. A.	NGL 06-003-052	1754
31	UNIV COLORADO-BOLDR	Murphy, R. E.	HQ-SL	Barth, C. A.	NGR 06-003-127	1757
31	UNIV COLORADO-BOLDR	Kakar, R. K.	HQ-ST	Thomas, R. J.	NSG 7231	1776
31	UNIV COLORADO-BOLDR	Kakar, R. K.	HQ-ST	Timothy, J. G.	NSG 7559	1789
31	UNIV OF CONNECTICUT	Halem, M.	GSFC	Cooper, A. R.	NSG 5075	1817
31	UNIV OF CONNECTICUT	Halem, M.	GSFC	Lin, J. D.	NSG 5346	1818
31	UNIV OF DAYTON	Camp, D. W.	MSFC	Leurs, J. K.	NAS 8-33369	3266
31	UNIV OF DAYTON	Duke, J. R.	WFC	Luers, J. K.	NAS 6-2456	3263
31	UNIV OF DENVER	Munoz, R. M.	ARC	Murcray, D. G.	NAS 2-10158	1797
31	UNIV OF DENVER	Kunde, V. G.	GSFC	Goldman, A.	NAS 5-25097	1798
31	UNIV OF DENVER	McMaster, L. R.	LARC	Murcray, D. G.	NAS 1-14929	1796
31	UNIV OF DENVER	Goad, J. H., Jr.	LARC	Goldman, A.	NSG 1405	1803
31	UNIV OF DENVER	McCormick, M. P.	LARC	Murcray, D. G.	NSG 1439	1805
31	UNIV OF DENVER	Goad, J. H., Jr.	LARC	Murcray, D. G.	NSG 1557	1806
31	UNIV OF DENVER	Kakar, R. K.	HQ-ST	Murcray, D. G.	NSG 7271	1809
31	UNIV OF FLORIDA	Wilhelmi, A. J.	ARC	Lanzerotti, L. J.	NAS 2-9976	1926
31	UNIV OF FLORIDA	Pope, C. D.	KSC	Gerber, J. F.	NAS10-9611	1934

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31	UNIV OF FLORIDA	Jafferis, W.	KSC	Uman, M. A.	NGR 10-005-169	1939
31	UNIV OF FLORIDA	Reichle, H. G., Jr.	LARC	Chameides, W. L.	NSG 1600	1943
31	UNIV OF FLORIDA	Donn, B.	HQ-SL	Green, A. S.	NGL 10-005-008	1937
31	UNIV OF HAWAII-MANOA	Greaves, J. R.	GSFC	Sadler, J. C.	NAS 5-25376	2028
31	UNIV OF HAWAII-MANOA	Greaves, J. R.	GSFC	Murakami, T.	NAS 5-25378	2029
31	UNIV OF HAWAII-MANOA	Th[illegible], J. S.	GSFC	Ramage, C. S.	NSG 5159	2040
31	UNIV OF HAWAII-MANOA	Donley, J. L.	GSFC	Jefferies, J. T.	NSG 5317	2043
31	UNIV OF HAWAII-MANOA	Donl[illegible], J. L.	GSFC	Orrall, F. Q.	NSG 5326	2044
31	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	McCord, T. B.	NSG 7590	2054
31	UNIV HOUSTON-CL LAKE	Clark, J.	MSFC	Samfield, E.	DEN 8 1	3635
31	UNIV ILLINOIS-URBANA	Donley, J. L.	GSFC	Mouschovias, T. C.	NSG 5319	2132
31	UNIV ILLINOIS-URBANA	Seals, R. K., Jr.	HQ-ST	Bowhill, S. A.	NSG 7506	2134
31	UNIV OF IOWA	Davis, M. A.	GSFC	Gurnett, D. A.	NAS 5-11431	2203
31	UNIV OF IOWA	Guynes, B. V.	MSFC	Shawhan, S. D.	NAS 8-32807	2210
31	UNIV OF KANSAS	Schmugge, T. J	GSFC	Ulaby, F. T.	NAS 5-25807	2229
31	UNIV OF KANSAS	Demel, K. J.	JSC	Ulaby, F. T.	NAS 9-15421	2231
31	UNIV OF KENTUCKY	Reichle, H. G., Jr.	LARC	Peters, L. K.	NSG 1501	2261
31	UNIV MARYLAND-COL PK	Sours, W. T.	GSFC	Currie, D. G.	NAS 5-25486	2344
31	UNIV MARYLAND-COL PK	Dennis, B. R.	GSFC	Rosenfeld, A.	NCA 5-79	2361
31	UNIV MARYLAND-COL PK	Donn, B. D.	GSFC	Smith, E. P.	NGL 21-002-033	2365
31	UNIV MARYLAND-COL PK	Hartle, R. E.	GSFC	Matthews, D. L.	NGR 21-002-096	2368
31	UNIV MARYLAND-COL PK	Barnes, W. L.	GSFC	Wilkerson, T. D.	NSG 5174	2391
31	UNIV MARYLAND-COL PK	Arking, A.	GSFC	Thompson, O. E.	NSG 5209	2393
31	UNIV MARYLAND-COL PK	Winston, G. C.	GSFC	Currie, D. G.	NSG 5234	2394
31	UNIV MARYLAND-COL PK	Winston, G. C.	GSFC	Currie, D. G.	NSG 5287	2395
31	UNIV MARYLAND-COL PK	Donley, J. L.	GSFC	Kundu, M. R.	NSG 5320	2398
31	UNIV MARYLAND-COL PK	Donley, J. L.	GSFC	Spicer, D. S.	NSG 5323	2399
31	UNIV MARYLAND-COL PK	Spencer, N. W.	GSFC	Lin, C. S.	NSG 5404	2402
31	UNIV MARYLAND-COL PK	Browell, E. V.	LARC	Wilkerson, T. D.	NCC 1 25	2362
31	UNIV MD-EASTRN SHORE	Parsons, C. L.	WFC	Smith, J. C.	NSG 6016	2420
31	UNIV OF MIAMI	Nelsen, E. D.	GSFC	Gordon, H. R.	NAS 5-22963	1952
31	UNIV OF MIAMI	Greaves, J. R.	GSFC	Krause, E. B	NAS 5-25374	1953
31	UNIV OF MIAMI	Halem, M.	GSFC	Estoque, M. A.	NSG 5342	1962
31	UNIV OF MIAMI	Fowlis, W. W.	MSFC	Geisler, J. E.	NAS 8-32898	1954
31	UNIV OF MIAMI	Fowlis, W. W.	MSFC	Geisler, J. E.	NAS 8-33558	1955
31	UNIV MICH-ANN ARBOR	Hedin, A. E.	GSFC	Carignan, G. R.	NAS 5-11376	2633
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-11380	2634
31	UNIV MICH-ANN ARBOR	Cooley, J. E.	GSFC	Carignan, G. R.	NAS 5-20939	2635
31	UNIV MICH-ANN ARBOR	Rice, C. F.	GSFC	Hays, P. B.	NAS 5-23006	2636
31	UNIV MICH-ANN ARBOR	Rice, C. F.	GSFC	Walker, J.	NAS [illegible]-24331	2639
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-25002	2641
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Carignan, G. R.	NAS 5-25031	2642
31	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-25145	2644
31	UNIV MICH-ANN ARBOR	Niemann, H. B.	GSFC	Carignan, G. R.	NAS 5-25153	2645
31	UNIV MICH-ANN ARBOR	Stolarski, R. S.	GSFC	Rusch, D. W.	NSG 5171	2679
31	UNIV MICH-ANN ARBOR	Reed, E. I.	GSFC	Stedman, D. H.	NSG 5189	2680
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Fontheim, E. G.	NSG 5281	2683
31	UNIV MICH-ANN ARBOR	Spencer, N. W.	GSFC	Nagy, A. i	NSG 5282	2684
31	UNIV MICH-ANN ARBOR	Russell, J. M., III	LARC	Drayson, S. R.	NAS 1-14394	2629
31	UNIV MICH-ANN ARBOR	Pellett, G. L.	LARC	Dingle, A. N.	NSG 1243	2664
31	UNIV MICH-ANN ARBOR	Sullivan, F. M.	LARC	Drayson, S. R.	NSG 1373	2667
31	UNIV MICH-ANN ARBOR	Smith, G. L.	LARC	Bartman, F. L.	NSG 1482	2669
31	UNIV MICH-ANN ARBOR	Frostrom, R. J., Jr	WFC	Horvath, J. J	NAS 6-2794	2649
31	UNIV MICH-ANN ARBOR	Young, R. S.	HQ-SB	Kuhn, W. R.	NSG 7308	2687
31	UNIV MICH-ANN ARBOR	Murphy, R. E.	HQ-SL	Liu, V. C.	NGR 23-005-094	2659
31	UNIV MICH-ANN ARBOR	Murphy, R. E.	HQ-SL	Atreya, S. K.	NSG 7404	2688
31	UNIV MICH-ANN ARBOR	Murphy, R. E.	HQ-SL	Carignan, G. R.	NSG 7587	2691
31	UNIV MICH-ANN ARBOR	Cauffman, D. P.	HQ-ST	Nagy, A. F.	NGR 23-005-015	265[illegible]

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31	UNIV M CH-ANN ARBOR	Newton, G. P.	HQ-ST	Donahue, Y. M.	NSC 7209	2686
31	UNIV MICH-ANN ARBOR	Cauffman, D. P.	HQ-ST	Hays, P. B.	NSG 7492	2690
31	U MINN-MNPLS-ST PAUL	Hall, C. F.	ARC	Nier, A. O.	NAS 2-8812	2697
31	U MINN-MNPLS-ST PAUL	Findlay, J. A.	GSFC	Neir, J. A.	NAS 5-11438	2699
31	U MINN-MNPLS-ST PAUL	Wende, C. D.	GSFC	Winckler, J. R.	NAS 5-23703	2700
31	U MINN-MNPLS-ST PAUL	Beswick, A. G.	LARC	Mauersberger, K.	NSG 1431	2711
31	U MINN-MNPLS-ST PAUL	Seals, R. K., Jr.	HQ-EB	Mauersberger, K.	NSG 7221	2724
31	U MINN-MNPLS-ST PAUL	Murphy, R. E.	HQ-SL	Nier, A. O.	NGL 24-005-009	2706
31	U MINN-MNPLS-ST PAUL	Murphy, R. E.	HQ-SL	Nier, A O.	NSG 7575	2727
31	UNIV MO-COLUMBIA	Smith, R. E.	MSFC	Tung, C.	NAS 8-31150	2756
31	UNIV MO-COLUMBIA	Smith, R. E.	MSFC	Kassner, J. L., Jr.	NAS 8-31849	2757
31	UNIV MO-ROLLA	Fallon, R. A.	MSFC	Hagen, D. E.	NAS 8-32976	2764
31	UNIV NEBRASKA-LINCLN	Fellows, R. F.	HQ-SL	Samson, J.	NGR 28-004-021	2798
31	UNIV NEVADA-DRI	Smith, R. E.	MSFC	Squires, P.	NAS 8-31470	2802
31	UNIV NEVADA-DRI	Fallon, R. A.	MSFC	Kocmond, W. C.	NAS 8-32975	2803
31	UNIV NEVADA-DRI	Fallon, R. A.	MSFC	Hallett, J.	NAS 8-32977	2804
31	UNIV NEVADA-DRI	Fallon, R. A.	MSFC	Kocmond, W. C.	NAS 8-33273	2805
31	UNIV NEVADA-DRI	Anderson, B. J.	MSFC	Hallett, J.	NAS 8-33295	2806
31	UNIV OF NEVADA-RENO	Schrick, B. J.	MSFC	Kocmond, W. C.	NAS 8-32313	2810
31	UNIV NEW HAMP-DURHAM	Donley, J. L.	GSFC	Chupp, E. L.	NAS 5-23761	2819
31	UNIV NEW HAMP-DURHAM	Donley, J. L.	GSFC	Fisk, L. A.	NSG 5316	2828
31	UNIV OF NEW MEXICO	Quaide, W. L.	HQ-SL	Keil, K.	NSG 7579	2902
31	UNIV OKLAHOMA-NORMAN	Greaves, J. R.	GSFC	Sasaki, Y. K.	NAS 5-25375	3308
31	UNIV OKLAHOMA-NORMAN	Camp, D. W.	MSFC	McCarthy, J.	NAS 8-31377	3309
31	UNIV OREGON-EUGENE	Kakar, R. K.	HQ-ST	Nolt, I. G.	NSG 7360	3333
31	UNIV OF PITTSBURGH	Murphy, R. E.	HQ-SL	Fite, W. L.	NGL 39-011-013	3436
31	UNIV OF PITTSBURGH	Murphy, R. E.	HQ-SL	Zipf, E. C.	NGL 39-011-030	3437
31	UNIV OF PITTSBURGH	Murphy, R. E.	HQ-SL	Biondi, M. A.	NGR 39-011-137	3439
31	UNIV SO CAROLINA-COL	Fellows, R. F.	HQ-SL	Durig, J. R.	NGL 41-002-003	3473
31	UNIV OF SOUTHERN CAL	Murphy, R. E.	HQ-SL	Maxworthy, T.	NGR 05-018-178	1694
31	UNIV OF SOUTHERN CAL	Murphy, R. E.	HQ-SL	Judge, D L.	NGR 05-018-180	1695
31	UNIV OF SOUTHERN CAL	Murphy, R. E.	HQ-SL	Shemar y, D. E.	NSG 7595	1707
31	UNIV TENNESSEE-KNOXV	Hill, C. K.	MSFC	Frost, W.	NAS 8-31718	3496
31	UNIV TENNESSEE-KNOXV	Vaughan, O. H.	MSFC	Connett, J. R.	NAS 8-32031	3497
31	UNIV TENNESSEE-KNOXV	Camp, D. W.	MSFC	Kohl, R. H.	NAS 8-32635	3500
31	UNIV TENNESSEE-KNOXV	Camp, D. W.	MSFC	Frost, W	NAS 8-32692	3501
31	UNIV TENNESSEE-KNOXV	Fowlis, W. W.	MSFC	Antar, B. N.	NAS 8-33386	3505
31	UNIV TENNESSEE-KNOXV	Fellows, R. F.	HQ-SL	Gailar, N. M.	NGL 43-001-006	3510
31	UNIV TEXAS-DALLAS	Hall, C. F.	ARC	Hoffman, J. H.	NAS 2-9485	3691
31	UNIV TEXAS-DALLAS	Rice, C. F.	GSFC	Hoffman, J. H.	NAS 5-11406	3692
31	UNIV TEXAS-DALLAS	Rice, C. F.	GSFC	Hanson, W B.	NAS 5-11407	3693
31	UNIV TEXAS-DALLAS	Brace, L. H.	GSFC	Heikkila, W. J.	NSG 5085	3705
31	UNIV TEXAS-DALLAS	Brace, L. H	GSFC	Hoffman, J. H.	NSG 5087	3706
31	UNIV TEXAS-DALLAS	Spencer, N. W.	GSFC	Klumpar, D. M.	NSG 5280	3707
31	UNIV TEXAS-DALLAS	Oran, W. A.	MSFC	Hoffman, J. H.	NAS 8-32689	3699
31	UNIV TEXAS-DALLAS	Murphy, R. E.	HQ-SL	Johnson, F S.	NGL 44-004-026	3701
31	UNIV TEXAS-DALLAS	Quaide, W. L.	HQ-SL	Hodges, R. R., Jr.	NSG 7034	3709
31	UNIV TEXAS-DALLAS	Murphy, R. E.	HQ-SL	Hanson, W B.	NSG 7599	3710
31	UNIV TEXAS-DALLAS	Wiskerchen, M. J.	HQ-ST	Hanson, W. B.	NGR 44-004-120	3703
31	UNIV TEXAS-S ANTONIO	Spencer, N. W.	GSFC	Burch, J. L.	NSG 5418	3721
31	UNIV TEXAS-S ANTONIO	Chappell, C. R.	MSFC	Burch, J. L.	NAS 8-32584	3720
31	UNIV OF UTAH	Greaves, J. R.	GSFC	Kao, S. K.	NAS 5-25373	3725
31	UNIV OF UTAH	Duke, J. R.	WFC	Kao, S. K.	NAS 6-2498	3726
31	UNIV OF UTAH	Duke, J R.	WFC	Staffanson, F L.	NAS 6-2727	3727
31	UNIV OF WASHINGTON	Young, R. E.	ARC	Holton, J. R.	NSG 2228	3936
31	UNIV OF WASHINGTON	Pollack, J. B.	ARC	Charlson, R J.	NSG 2362	3938
31	UNIV OF WASHINGTON	Spencer, N. W	GSFC	Lin, C. S	NSG 5283	3946
31	UNIV OF WASHINGTON	Harris, J. W.	JSC	Brownlee, D. E.	NSG 9052	3959

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31	UNIV OF WASHINGTON	Williams, T. S., Jr.	LARC	Leovy, C. B.	NAS 1-9694	3923
31	UNIV OF WASHINGTON	Russell, J. M., III	LARC	Leovy, C. B.	NAS 1-14341	3924
31	UNIV OF WASHINGTON	Fallon, R. A.	MSFC	Hobbs, P V	NAS 8-33148	3926
31	UNIV OF WASHINGTON	Murphy, R. E.	HQ-SL	Leovy, C. B	NSG 7085	3951
31	UNIV OF WASHINGTON	Murphy, R. E.	HQ-SL	Leovy, C. B.	NSG 7611	3957
31	UNIV WISC-MADISON	Hall, C. F.	ARC	Suomi, D. V.	NAS 2-9480	3969
31	UNIV WISC-MADISON	Montgomery, H. E.	GSFC	Suomi, V. E	NAS 5-21965	3971
31	UNIV WISC-MADISON	Gemmell, J. D.	GSFC	Kraushaar, W. L	NAS 5-22410	3973
31	UNIV WISC-MADISON	Greaves, J R.	GSFC	Suomi, V. E.	NAS 5-23462	3974
31	UNIV WISC-MADISON	Hasler, A. F	GSFC	Suomi, V. E.	NAS 5-23706	3975
31	UNIV WISC-MADISON	Theon, J S.	GSFC	Weinman, J. A.	NAS 5-24230	3976
31	UNIV WISC-MADISON	Greaves, J. R	GSFC	Suomi, V. E.	NAS 5-25148	3979
31	UNIV WISC-MADISON	Greaves, J. R.	GSFC	Suomi, V. E.	NAS 5-25377	3980
31	UNIV WISC-MADISON	Greaves, J. R.	GSFC	Johnson, D. R.	NAS 5-25399	3981
31	UNIV WISC-MADISON	Halem, M.	GSFC	Houghton, D. D	NSG 5152	3998
31	UNIV WISC-MADISON	Halem, M.	GSFC	Herman, G. F.	NSG 5223	4001
31	UNIV WISC-MADISON	Minzner, R. A.	GSFC	Suomi, V. E.	NSG 5251	4004
31	UNIV WISC-MADISON	Halem, M.	GSFC	Horn, L. H.	NSG 5252	4005
31	UNIV WISC-MADISON	Browell, E. V.	LARC	Eloranta, E.	NAS 1-14136	3968
31	UNIV WISC-MADISON	Turner, R. E.	MSFC	Johnson, D. R.	NAS 8-33222	3985
31	UNIV WISC-MADISON	Murphy, R. E.	HQ-SL	Suomi, V. E.	NGR 50-002-189	3994
31	UNIV OF WYOMING	Hedgepeth, K. D.	LARC	Pepin, T. J	NAS 1-13797	4012
31	UNIV OF WYOMING	McCormick, M. P	LARC	Pepin, T. J.	NAS 1-14373	4013
31	UNIV OF WYOMING	McMaster, L. R.	LARC	Pepin, T. J	NAS 1-14931	4014
31	UNIV OF WYOMING	McMaster, L. R.	LARC	Hofmann, D J.	NAS 1-15377	4015
31	UNIV OF WYOMING	McMaster, L. R.	LARC	Pepin, T. J.	NSG 1518	4019
31	UNIV OF WYOMING	Schrick, B. J.	MSFC	Vali, G.	NAS 8-32067	4016
31	UNIV OF WYOMING	Fallon, R. A.	MSFC	Vali, G.	NAS 8-33150	4018
31	UNIV OF WYOMING	Kakar, R. K.	HQ-EB	Hofmann, D. J.	NSG 7349	4021
31	UTAH STATE UNIV	Lowenstein, M.	ARC	Jeppesen, H.	NAS 2-9557	3735
31	UTAH STATE UNIV	Chappell, C. R.	MSFC	Raitt, W. J	NAS 8-32636	3737
31	UTAH STATE UNIV	Johnson, W. G.	MSFC	Williamson, P R.	NAS 8-33381	3738
31	UTAH STATE UNIV	Johnson, W. G.	MSFC	Banks, P M.	NAS 8-33383	3739
31	UTAH STATE UNIV	Tilford, S. G.	HQ-ST	Baker, K. D.	NSG 7210	3746
31	UTAH STATE UNIV	Hedin, A. E.	HQ-ST	Banks, P. M	NSG 7289	3747
31	UTAH STATE UNIV	Kakar, R. K.	HQ-ST	Megill, L R.	NSG 7388	3748
31	VIRGINIA POLY INST	Argentiero, P. D.	GSFC	Havalick, R. M.	NAS 5-25839	3872
31	VIRGINIA POLY INST	Schmidlin, F. J.	WFC	Tieleman, H. W.	NGL 47-004-067	3881
31	WEBER STATE COL	DeLoach, A. C.	MSFC	Tripp, D. A	NAS 8-33113	3750
31	WASHINGTON ST UNIV	Kakar, R. K.	HQ-EB	Cronn, D	NSG 7214	3964
31	WESTRN KENTUCKY UNIV	Stonemetz, R. E.	MSFC	Healy, H.	NAS 8-33387	2269
31	YALE UNIVERSITY	Murphy, R. E.	HQ-SL	Cross, R. J., Jr.	NGL 07-004-043	1823
31	YORK UNIVERSITY	Cooper, D. M.	ARC	Nicholls, R W.	NSG 7223	4026
31	YORK UNIVERSITY	Newton, G. P.	HQ-ST	Schiff, H. I	NGR 52-134-005	4025
31	OREGON GRADUATE CTR	Kakar, R. K.	HQ-EB	Rasmussen, R. A	NSG 7457	3317
32	ARIZONA STATE UNIV	Black, D. C.	ARC	Greeley, R.	NCA 2-35802	1075
32	ARIZONA STATE UNIV	Pollack, J. B.	ARC	Krinsley, D.	NCA 2-35901	1076
32	ARIZONA STATE UNIV	Pollack, J. B.	ARC	Krinsley, D.	NCA 2-35902	1077
32	ARIZONA STATE UNIV	Harris, J. W	JSC	Buseck, P R.	NSG 9068	1088
32	ARIZONA STATE UNIV	Young, R. S.	HQ-SB	Cronin, J R.	NSG 7255	1082
32	ARIZONA STATE UNIV	French, B. M.	HQ-SL	Moore, C. B	NGL 03-001-001	1078
32	ARIZONA STATE UNIV	French, B. M.	HQ-SL	Larimer, J. W.	NSG 7040	1081
32	ARIZONA STATE UNIV	Dwornik, S. E.	HQ-SL	Greeley, R.	NSG 7415	1083
32	ARIZONA STATE UNIV	Quaide, W. L.	HQ-SL	Greeley, R.	NSG 7429	1084
32	ARIZONA STATE UNIV	Dwornik, S. E.	HQ-SL	Rankin, R L	NSG 7630	1086
32	ARIZONA STATE UNIV	Dwornik, S. E.	HQ-SL	Sheridan, M.	NSG 7642	1087
32	BOSTON UNIVERSITY	Young, R. S.	HQ-SB	Margulis, L.	NGR 22-004-025	2431
32	BROWN UNIVERSITY	Harris, J. W.	JSC	Rutherford, M. J.	NGR 40-002-123	3456

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32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Mutch, T. A.	NASW 3285	3453
32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Head, J. W.	NGR 40-002-088	3454
32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Head, J. W.	NGR 40-002-116	3455
32	BROWN UNIVERSITY	Dwornik, S. E.	HQ-SL	Mutch, T. A	NSG 7569	3459
32	BROWN UNIVERSITY	Dwornik, S E.	HQ-SL	Head, J. W.	NSG 7570	3460
32	BROWN UNIVERSITY	Quaide, W. L	HQ-SL	Rutherford, M J.	NSG 7589	3461
32	BROWN UNIVERSITY	Quaide, W. L.	HQ-SL	Parmentier, E. M.	NSG 7605	3462
32	CALIF INST OF TECH	Cohen, S. C.	GSFC	Melosh, H. J.	NCC 5 17	1184
32	CALIF INST OF TECH	Allenby, R. J.	GSFC	Whitcomb, J. H	NSG 5224	1208
32	CALIF INST OF TECH	Allenby, R. J.	GSFC	Melosh, H. J.	NSG 5267	1211
32	CALIF INST OF TECH	Vitale, J. A.	HQ-ET	Anderson, D. L	NSG 7610	1231
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Anderson, D L	NGL 05-002-069	1187
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Ahrens, T J	NGL 05-002-105	1188
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Shoemaker, E. M.	NGR 05-002-303	1201
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Ahrens, T. J.	NSG 7129	1219
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Burnett, D. S.	NSG 7202	1220
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Melosh, H. J.	NSG 7316	1222
32	CALIF INST OF TECH	Dwornik, S. E.	HQ-SL	Albee, A. L.	NSG 7442	1226
32	CALIF INST OF TECH	Quaide, W. L.	HQ-SL	Muhleman, D O	NSG 7565	1230
32	CAL STATE U-FULLERTN	French, B. M	HQ-SL	Woolum, D S.	NSG 7314	1242
32	CARNEGIE-MELLON UNIV	French, B. M.	HQ-SL	Kohman, T P.	NSG 7585	3345
32	COLORADO STATE UNIV	Carpenter, L. H.	GSFC	Thompson, E. G	NGR 06-002-191	1721
32	COLUMBIA UNIVERSITY	Wagner, C. A	GSFC	Watts, A. B.	NCC 5 3	2927
32	COLUMBIA UNIVERSITY	Allenby, R J.	GSFC	Bilham, R. G.	NSG 5072	2937
32	COLUMBIA UNIVERSITY	Ungar, S. G.	GSFC	High, C. J.	NSG 5080	2938
32	COLUMBIA UNIVERSITY	Labovitz, M.	GSFC	Kuo, J. T	NSG 5222	2942
32	COLUMBIA UNIVERSITY	Smith, D. E.	GSFC	Talwani, M.	NSG 5273	2943
32	COLUMBIA UNIVERSITY	Stanley, H. R.	WFC	Talwani, M	NAS 6-2519	2922
32	COLUMBIA UNIVERSITY	Quaide, W. L.	HQ-SL	Keihm, S. J	NSG 7194	2945
32	COLUMBIA UNIVERSITY	French, B. M.	HQ-SL	Onions, R. K.	NSG 7200	2946
32	COLUMBIA UNIVERSITY	Quaide, W. L.	HQ-SL	Takahashi, T.	NSG 7434	2948
32	COLUMBIA UNIVERSITY	French, B. E.	HQ-SL	Onions, R. K.	NSG 7466	2949
32	CORNELL UNIVERSITY	Allenby, R. J	GSFC	Oliver, J.	NCC 5 4	2955
32	CORNELL UNIVERSITY	Cohen, S. C.	GSFC	Turcotte, D. L.	NSG 5060	2978
32	CORNELL UNIVERSITY	Quaide, W. L.	HQ-SL	Turcotte, D. L.	NGR 33-010-108	2961
32	CORNELL UNIVERSITY	Dwornik, S. E.	HQ-SL	Sagan, C E	NGR 33-010-220	2967
32	CORNELL UNIVERSITY	Boyce, J. M.	HQ-SL	Veverka, J.	NSG 7156	2981
32	CORNELL UNIVERSITY	Kochendorfer, F. D.	HQ-SL	Harwit, M O.	NSG 7268	2983
32	CORNELL UNIVERSITY	Goldstein, B. E.	HQ-SL	Gold, T.	NSG 7348	2985
32	CORNELL UNIVERSITY	Boyce, J. M.	HQ-SL	Veverka, J.	NSG 7498	2989
32	CORNELL UNIVERSITY	Boyce, J. M.	HQ-SL	Veverka, J.	NSG 7546	2991
32	CORNELL UNIVERSITY	Boyce, J. M.	HQ-SL	Veverka, J	NSG 7547	2992
32	CORNELL UNIVERSITY	Quaide, W L.	HQ-SL	Burns, J A	NSG 7593	2993
32	CORNELL UNIVERSITY	Quaide, W. L.	HQ-SL	Veverka, J.	NSG 7606	2994
32	DARTMOUTH COLLEGE	Kupperian, J. E., Jr	GSFC	Sonnerup, B U.	NSG 5348	2817
32	FLORIDA STATE UNIV	Williams, T. S., Jr.	LARC	Hess, S K.	NAS 1-9693	1915
32	GEORGIA INST OF TECH	Downs, S. W., Jr.	MSFC	Faust, C. E	NAS 8-31990	1985
32	HUNTER COLLEGE	Ungar, S. G.	GSFC	Coiner, J C.	NSG 5325	2997
32	HARVARD UNIVERSITY	Young, R. S.	HQ-SB	Barghoorn, E. S.	NGL 22-007-069	2453
32	HARVARD UNIVERSITY	Quaide, W. L.	HQ-SL	Cameron, A. G.	NGR 22-007-269	2457
32	HARVARD UNIVERSITY	Dwornik, S E.	HQ-SL	Goody, R M	NSG 7398	2479
32	HARVARD UNIVERSITY	Quaide, W. L	HQ-SL	O'Connell, R. J.	NSG 7513	2482
32	INDIANA U-BLOOMINGTN	McKay, D. S.	JSC	Basu, A.	NSG 9072	2141
32	INDIANA U-BLOOMINGTN	Harris, J. W.	JSC	Basu, A.	NSG 9077	2142
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SB	Hayes, J. M	NGR 15-003-118	2138
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SB	Ripley, E M	NSG 7389	2139
32	INDIANA U-BLOOMINGTN	Young, R. S.	HQ-SB	Ripley, E. M.	NSG 7520	2140
32	JACKSON STATE UNIV	Atwell, B. H	NSTL	Lang, M.	NSG 736	2731

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32	JOHNS HOPKINS UNIV	Marsh, J. G.	GSFC	Marsh, B. D.	NCC 5 1	2311
32	JOHNS HOPKINS UNIV	Taylor, P. T.	GSFC	Marsh, B. D.	NCC 5 13	2312
32	JOHNS HOPKINS UNIV	Langel, R. A.	GSFC	Marsh, B. D.	NCC 5 18	2313
32	JOHNS HOPKINS UNIV	Smith, D. E.	GSFC	Marsh, B. D	NSG 5090	2318
32	JOHNS HOPKINS UNIV	Langel, R. A.	GSFC	Marsh, B. D.	NSG 5269	2322
32	KANSAS STATE UNIV	Dwornik, S. E.	HQ-SL	Underwood, J. R., Jr.	NSG 7478	2224
32	KANSAS STATE UNIV	Quaide, W. L.	HQ-SL	Underwood, J R , Jr.	NSG 7580	2225
32	KANSAS STATE UNIV	Dwornik, S. E.	HQ-SL	Underwood, J R , Jr	NSG 7613	2226
32	LEHIGH UNIVERSITY	French, B. M.	HQ-SL	Goldstein, J. I.	NGR 39-007-043	3365
32	LA STATE U-SHREVEPT	Dwornik, S. E.	HQ-SL	Nummedal, D.	NSG 7542	2274
32	MASS INST OF TECH	Mead, G. D.	GSFC	Molnar, P	NCC 5 8	2519
32	MASS INST OF TECH	Mead, G. D.	GSFC	Solomon, S C	NCC 5 14	2520
32	MASS INST OF TECH	Clark, T. A.	GSFC	Counselman, C. C , III	NGR 22-009-839	2542
32	MASS INST OF TECH	Smith, D. E	GSFC	Sclater, J G	NSG 5253	2587
32	MASS INST OF TECH	Frey, H V	GSFC	Molnar, P	NSG 5260	2588
32	MASS INST OF TECH	Halem, M.	GSFC	Eagleson, P. S.	NSG 5306	2589
32	MASS INST OF TECH	Flinn, E. A.	HQ-ER	Counselman, C. C., III	NSG 7428	2601
32	MASS INST OF TECH	Flinn, E. A.	HQ-ES	Soloman, S C.	NSG 7329	2596
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Counselman, C C., III	NSG 7010	2590
32	MASS INST OF TECH	Williams, R.	HQ-SL	Suomi, V. E.	NSG 7077	2591
32	MASS INST OF TECH	Quaide, W. L	HQ-SL	Toksoz, M N.	NSG 7081	2592
32	MASS INST OF TECH	Dwornik, S E	HQ-SL	Solomon, S C	NSG 7297	2594
32	MASS INST OF TECH	Quaide, W. L	HQ-SL	Burns, R. G	NSG 7338	2598
32	MASS INST OF TECH	Dwornik, S. E	HQ-SL	Biemann, K.	NSG 7432	2602
32	MASS INST OF TECH	Dwornik S. E	HQ-SL	Solomon, S C	NSG 7438	2603
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Pinson, W.	NSG 7467	2604
32	MASS INST OF TECH	Quaide, W. L.	HQ-SL	Burns, R G	NSG 7604	2607
32	NEW MEX ST U-LAS CR	Krabill, W. B.	WFC	Guard, K.	NAS 6-2885	2887
32	NE LOUISIANA UNIV	Dwornik, S E	HQ-SL	Dehon, R A	NSG 7357	2275
32	NE LOUISIANA UNIV	Quaide, W L	HQ-SL	Dehon, R A	NSG 7420	2276
32	NE LOUISIANA UNIV	Dwornik, S. E.	HQ-SL	Dehon, R. A	NSG 7534	2277
32	NE LOUISIANA UNIV	Dwornik, S. E.	HQ-SL	Dehon, R A.	NSG 7628	2278
32	OHIO STATE UNIV	Stephanides, C C	GSFC	Mueller, I I	NAS 5-25888	3212
32	OHIO STATE UNIV	Marsh, J G	GSFC	Rapp, R H.	NGR 36-008-161	3217
32	OHIO STATE UNIV	Smith, D. E.	GSFC	Mueller, I. I.	NSG 5265	3237
32	OHIO STATE UNIV	Smith, D. E.	GSFC	Schmidt, E G	NSG 5275	3238
32	OHIO STATE UNIV	Murphy, J. P.	HQ-ER	Mueller, I. I	NGR 36-008-204	3218
32	OKLAHOMA STATE UNIV	Marquis, D. L	JSC	Ray, D E	NAS 9-15692	3299
32	OREGON STATE UNIV	Bryson, R. P.	HQ-SL	Schmitt, R A	NGL 38-002-020	3322
32	OREGON STATE UNIV	Dwornik, S. E.	HQ-SL	Komar, P. D	NSG 7178	3329
32	PENN STATE U-UNIV PK	Allenby, R. J	GSFC	Alexander, S. S	NCC 5 12	3387
32	PENN STATE U-UNIV PK	Allenby, R. J	GSFC	Alexander, S S.	NCC 5 19	3388
32	PENN STATE U-UNIV PK	Allenby, R J	GSFC	Alexander, S S	NSG 5185	3410
32	PENN STATE U-UNIV PK	Allenby, R J	GSFC	Alexander, S S	NSG 5276	3413
32	PENN STATE U-UNIV PK	Quaide, W L	HQ-SL	Gold, D P	NGL 39-009-010	3391
32	PENN STATE U-UNIV PK	Goldstein, B. E	HQ-SL	Muan, A	NSG 7120	3416
32	PENN STATE U-UNIV PK	Goldstein, B. E.	HQ-SL	Alexander, S S.	NSG 7193	3417
32	PENN STATE U-UNIV PK	Quaide, W. E	HQ-SL	Eggler, D	NSG 7465	3419
32	POMONA COLLEGE	Quaide, W. L	HQ-SL	Baird, A K	NSG 7566	1261
32	PRINCETON UNIVERSITY	Wilson, L.	GSFC	Jenkins, E B	NAS 5-22360	2837
32	PRINCETON UNIVERSITY	Quaide, W. L	HQ-SL	Phinney, R A	NSG 7080	2863
32	PRINCETON UNIVERSITY	Dwornik, S. E.	HQ-SL	Smoluchowski, R	NSG 7283	2866
32	PRINCETON UNIVERSITY	Dwornik, S E.	HQ-SL	Judson, S	NSG 7568	2869
32	PRINCETON UNIVERSITY	French, B M	HQ-SL	Hargraves, R B	NSG 7602	2871
32	PURDUE UNIVERSITY	Langel, R A	GSFC	Hinze, A. J	NAS 5-22816	2145
32	PURDUE UNIVERSITY	Langel, R A	GSFC	Hinze, W J	NAS 5-25030	2147
32	PURDUE UNIVERSITY	Allenby, R J	GSFC	Braile, L W	NCC 5 21	2154
32	PURDUE UNIVERSITY	Amsbury, D L	JSC	Hoffer, R M	NAS 9-15889	2153

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32	PURDUE UNIVERSITY	French, B. M.	HQ-SL	Lipschutz, M. E.	NGL 15-005-140	2155
32	QUEENS COLLEGE	Quaide, W. L.	HQ-SL	Takahashi, T	NSG 7321	3025
32	RICE UNIVERSITY	Harris, J. W.	JSC	Heymann, D	NGL 44-006-127	3554
32	RICE UNIVERSITY	Quaide, W. L.	HQ-SL	Clayton, D D.	NSG 7361	3561
32	RICE UNIVERSITY	Quaide, W. L.	HQ-SL	Debremaecker, J. C.	NSG 7362	3562
32	RICE UNIVERSITY	Quaide, W. L	HQ-ST	Freeman, J. W., Jr.	NSG 7157	3560
32	RUTGERS U-N BRUNSWK	Harris, J. W.	JSC	Klein, L. C.	NSG 9065	2878
32	RUTGERS U-N BRUNSWK	French, B. M.	HQ-SL	Hewins, R. H.	NSG 7327	2876
32	RUTGERS U-N BRUNSWK	Dwornik, S. E.	HQ-SL	Zebib, A.	NSG 7601	2877
32	ST MARY'S UNIV-SA	Horz, F	JSC	Hanss, R. E	NSG 9039	3565
32	SO DAKOTA STATE UNIV	Bullock, H. E., Jr.	JSC	Westin, F C	NAS 9-15345	3479
32	STANFORD UNIVERSITY	Broderick, J. C.	GSFC	Lyon, R J	NAS 5-24232	1309
32	STANFORD UNIVERSITY	Broderick, J. C.	GSFC	Rich, E I	NAS 5-24479	1312
32	STANFORD UNIVERSITY	Dwornik, S. E.	HQ-SL	Howard, H. T.	NGR 05-020-649	1363
32	STANFORD UNIVERSITY	Dwornik, S. E.	HQ-SL	Levinthal, E. C.	NSG 7538	1406
32	STATE UNIV NY-ALBANY	Frey, H. V.	GSFC	Burke, K.	NSG 5274	3056
32	STATE UNIV NY-BUFFAL	Dwornik, S E	HQ-SL	King, J. S.	NGR 33-015-108	3062
32	STATE U NY-STONY BRK	Harris, J. W.	JSC	Hartung, J. B	NSG 9013	3088
32	STATE U NY-STONY BRK	Dwornik, S E.	HQ-SL	Owen, T	NSG 7553	3087
32	TEXAS A&M UNIVERSITY	Taylor, P T.	GSFC	Jones, G M.	NCC 5 11	3589
32	TEXAS A&M UNIVERSITY	Chang, A T.	GSFC	Blanchard, B. J.	NSG 5134	3599
32	TEXAS A&M UNIVERSITY	Chang, A. T.	GSFC	Blanchard, B. J.	NSG 5156	3600
32	TEXAS A&M UNIVERSITY	Demel, K. J.	JSC	Newton, R. R.	NAS 9-14875	3582
32	TEXAS A&M UNIVERSITY	Amsbury, D. L.	JSC	Harlan, J. C.	NAS 9-15465	3585
32	TEXAS A&M UNIVERSITY	Goldstein, B. E.	HQ-SL	Gangi, A. F	NSG 7189	3604
32	TEXAS A&M UNIVERSITY	Murphy, R E	HQ-SL	Young, A. T	NSG 7370	3605
32	TEXAS A&M UNIVERSITY	Quaide, W L	HQ-SL	Gangi, A F	NSG 7417	3606
32	TEXAS TECH UNIV	Halstead, T. W	HQ-SB	Hartman, H B.	NSG 7435	3609
32	UNIV OF ARIZONA	Young, R. S.	HQ-SB	Nagy, B.	NGR 03-002-171	1117
32	UNIV OF ARIZONA	Bohlin, J. M.	HQ-SL	Strom, R. G.	NGL 03-002-191	1114
32	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Sonett, C. P.	NGR 03-002-370	1121
32	UNIV OF ARIZONA	French, B. M	HQ-SL	Wilkening, L L	NSG 7011	1134
32	UNIV OF ARIZONA	Quaide, W. L	HQ-SL	Sonett, C. P	NSG 7020	1135
32	UNIV OF ARIZONA	Boyce, J M	HQ-SL	Strom, R. G	NSG 7146	1141
32	UNIV OF ARIZONA	French, B. M	HQ-SL	Gehrels, A M	NSG 7246	1143
32	UNIV OF ARIZONA	French, B. M.	HQ-SL	Zellner, B. H.	NSG 7249	1144
32	UNIV OF ARIZONA	Quaide, W. L	HQ-SL	Levy, E. H.	NSG 7419	1149
32	UNIV OF ARIZONA	French, B. M	HQ-SL	Boynton, W. V.	NSG 7436	1150
32	UNIV OF ARIZONA	Dwornik, S. E.	HQ-SL	Woronow, A.	NSG 7544	1153
32	UNIV OF ARIZONA	Quaide, W. L	HQ-SL	Drake, M. J	NSG 7576	1157
32	UNIV OF ARIZONA	Quaide, W. L	HQ-SL	Drake, M. J	NSG 7577	1158
32	UNIV OF ARIZONA	Quaide, W. L.	HQ-SL	Lebofsky, L	NSG 7607	1159
32	UNIV CALIF-BERKELEY	Davis, M. A.	GSFC	Anderson, K. A.	NAS 5-22307	1413
32	UNIV CALIF-BERKELEY	Young, R S.	HQ-SB	Calvin, M.	NGL 05-003-003	1438
32	UNIV CALIF-L ANGELES	Smith, D. E.	GSFC	Kaula, W. M.	NSG 5263	1543
32	UNIV CALIF-L ANGELES	Kupperian, J. E., Jr	GSFC	Siscoe, G. L.	NSG 5351	1545
32	UNIV CALIF-L ANGELES	Young, R S	HQ-SB	Kaplan, I R.	NGR 05-007-221	1519
32	UNIV CALIF-L ANGELES	Young, R. S	HQ-SB	Anderson, R N	NGR 05-007-407	1526
32	UNIV CALIF-L ANGELES	Young, R. S.	HQ-SB	Schopf, J. W	NSG 7489	1560
32	UNIV CALIF-L ANGELES	Quaide, W. L	HQ-SL	Kaula, W. M.	NGL 05-007-002	1515
32	UNIV CALIF-L ANGELES	Dwornik, S E	HQ-SL	Schubert, G	NGR 05-007-317	1522
32	UNIV CALIF-L ANGELES	French, B M	HQ-SL	Wasson, J T	NGR 05-007-329	1524
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Coleman, P J, Jr	NGR 05-007-351	1525
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Oertel, G	NSG 7052	1548
32	UNIV CALIF-L ANGELES	Quaide, W L	HQ-SL	Kieffer, H H	NSG 7282	1553
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Schubert, G	NSG 7315	1555
32	UNIV CALIF-L ANGELES	French, B. M	HQ-SL	Boynton, W V	NSG 7335	1556
32	UNIV CALIF-L ANGELES	Quaide, W L	HQ-SL	Busse, F W	NSG 7484	1559

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32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Kieffer, H. H.	NSG 7581	1561
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Kieffer, H. H.	NSG 7582	1562
32	UNIV CALIF-L ANGELES	Quaide, W. L.	HQ-SL	Shubert, G.	NSG 7583	1563
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arrhenius, G.	NGL 05-009-002	1586
32	UNIV CALIF-SAN DIEGO	French, B. M.	HQ-SL	Arnold, J. R.	NGL 05-009-004	1587
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arnold, J. R.	NGR 05-005-005	1592
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Arnold, J. R.	NSG 7027	1612
32	UNIV CALIF-SAN DIEGO	Quaide, W. L.	HQ-SL	Alfven, H.	NSG 7102	1613
32	UNIV CALIF-SAN DIEGO	French, B. M.	HQ-SL	MacDougall, J. D.	NSG 7121	1614
32	UNIV CALIF-SAN DIEGO	French, B. M	HQ-SL	Rudee, M. L.	NSG 7474	1619
32	UNIV CALIF-S BARBARA	Chang, A. T.	GSFC	Estes, J. E.	NCC 5 5	1646
32	UNIV CALIF-S BARBARA	Salomonson, V. V.	GSFC	Ozier, J. D.	NSG 5153	1654
32	UNIV CALIF-S BARBARA	Chang, A. T.	GSFC	Estes, J. E.	NSG 5170	1655
32	UNIV CALIF-S BARBARA	Amsbury, D. L.	JSC	Strahler, A. H	NAS 9-15509	1640
32	UNIV CALIF-S BARBARA	Harris, J. W.	JSC	Tilton, G. R	NGR 05-010-081	1648
32	UNIV CALIF-S BARBARA	Quaide, W. L.	HQ-SL	Peale, S. J.	NGR 05-010-062	1647
32	UNIV CALIF-S BARBARA	Quaide, W. L.	HQ-SL	Fuller, M. D.	NSG 7586	1657
32	UNIV OF CHICAGO	French, B. M.	HQ-SL	Anders, E.	NGL 14-001-010	2085
32	UNIV OF CHICAGO	Quaide, W. L.	HQ-SL	Turkevich, A. L.	NGR 14-001-135	2091
32	UNIV OF CHICAGO	French, B. M.	HQ-SL	Grossman, L.	NGR 14-001-249	2096
32	UNIV OF CHICAGO	Quaide, W. L.	HQ-SL	Schramm, D. N	NSG 7212	2102
32	UNIV OF CHICAGO	Quaide, W. L.	HQ-SL	Turkevich, A. L.	NSG 7532	2106
32	UNIV OF CHICAGO	French, B. M.	HQ-SL	Smith, J. V.	NSG 7550	2107
32	UNIV COLORADO-BOLDR	Harris, J. W.	JSC	Spetzler, H. A.	NSG 9036	1793
32	UNIV COLORADO-BOLDR	Murphy, J. P.	HQ-ER	Wyss, M.	NASW 3103	1753
32	UNIV COLORADO-BOLDR	Flinn, E. A.	HQ-SL	Smith, M. L	NSG 7319	1781
32	UNIV COLORADO-BOLDR	Quaide, W. L.	HQ-SL	Spetzler, H A.	NSG 7584	1790
32	UNIV OF DAYTON	Quaide, W. L.	HQ-SL	Piekutowski, A. J.	NSG 7444	3270
32	UNIV OF FLORIDA	Atwell, B. H.	NSTL	Cross, C.	NAS13-106	1936
32	UNIV OF GEORGIA	Butera, M. K.	NSTL	Cooley, J. E.	NAS13-121	2022
32	UNIV OF GEORGIA	Atwell, B. H.	NSTL	Welch, R.	NAS13-123	2023
32	UNIV OF GEORGIA	Boyce, J. M.	HQ-SL	Howard, J H.	NGR 11-003-037	2024
32	UNIV OF GEORGIA	Quaide, W. L.	HQ-SL	Wenner, D. B.	NSG 7433	2025
32	UNIV OF GEORGIA	Dwornik, S. E.	HQ-SL	Brook, G.	NSG 7539	2026
32	UNIV OF HAWAII-MANOA	White, W. W.	GSFC	Jefferies, J. T.	NGR 12-001-127	2039
32	UNIV OF HAWAII-MANOA	Nava, D. F.	GSFC	Philpotts, J. A.	NSG 5203	2041
32	UNIV OF HAWAII-MANOA	Harris, J. W.	JSC	Philpotts, J. A.	NSG 9071	2057
32	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	McCord, T. B.	NSG 7312	2047
32	UNIV OF HAWAII-MANOA	Dwornik, S. E.	HQ-SL	Kafotos, M	NSG 7403	2049
32	UNIV OF HAWAII-MANOA	Quaide, W L.	HQ-SL	Russ, G. P.	NSG 7423	2050
32	UNIV OF HAWAII-MANOA	Dwornik, S. E.	HQ-SL	McCord, T. B.	NSG 7443	2051
32	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	Gaffey, M. J.	NSG 7462	2052
32	UNIV OF HAWAII-MANOA	Quaide, W. L.	HQ-SL	Gaffey, M. J.	NSG 7597	2055
32	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Oro, J	NGR 44 005-002	3619
32	UNIV HOUSTON-HOUSTON	Dwornik, S. E.	HQ-SL	King, E. A	NSG 7228	3627
32	UNIV HOUSTON-HOUSTON	Dwornik, S. E.	HQ-SL	Smith, R. S	NSG 7410	3629
32	UNIV HOUSTON-HOUSTON	Dwornik, S. E.	HQ-SL	Smith, R.	NSG 7551	3631
32	UNIV HOUSTON-HOUSTON	French, B. M.	HQ-SL	King, E. A.	NSG 7617	3633
32	UNIV OF KANSAS	Chang, A. T.	GSFC	Ulaby, F. T.	NSG 5335	2250
32	UNIV OF KANSAS	Goldstein, B. E.	HQ-SL	VanSchmus, W. R.	NSG 7351	2251
32	UNIV MARYLAND-COL PK	Stief, L. J.	GSFC	Khanna, R. K.	NGR 21-002-368	2376
32	UNIV MARYLAND-COL PK	Rango, A.	GSFC	McCuen, R. H.	NGR 21-002-399	2377
32	UNIV MARYLAND-COL PK	Salomonson, V. V.	GSFC	Ragan, R. M	NSG 5017	2384
32	UNIV MARYLAND-COL PK	Trombka, J. I.	GSFC	Balakrishnan, A. V.	NSG 5094	2386
32	UNIV MARYLAND-COL PK	Schmugge, T. J.	GSFC	Witczak, M. W.	NSG 5137	2389
32	UNIV MARYLAND-COL PK	Quaide, W. L.	HQ-SL	Adler, I.	NSG 7046	2404
32	UNIV MARYLAND-COL PK	Quaide, W L.	HQ-SL	Pai, S. I.	NSG 7365	2411
32	UNIV MARYLAND-COL PK	Quaide, W. E.	HQ-SL	Tossell, J.	NSG 7482	2414

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32	UNIV OF MASS-AMHERST	Harris, J. W.	JSC	Rhodes, J. M.	NSG 9069	2619
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	McGill, G. E.	NGR 22-010-076	2615
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	Huguenin, R. L.	NSG 7405	2617
32	UNIV OF MASS-AMHERST	Dwornik, S. E.	HQ-SL	Wise, D.	NSG 7571	2618
32	UNIV OF MIAMI	French, B. M.	HQ-SL	Fisher, D. E	NSG 7309	1964
32	UNIV OF MIAMI	Quaide, W. L.	HQ-SL	Brass, G. B.	NSG 7510	1965
32	U MINN-MNPLS-ST PAUL	Harris, J. W.	JSC	Weiblen, P. W.	NSG 9050	2728
32	UNIV MO-ST LOUIS	Quaide, W. L.	HQ-SL	James, P. B.	NSG 7563	2776
32	UNIV OF NEW MEXICO	Atwell, B. H.	NSTL	Morain, S. R.	NAS13-109	2896
32	UNIV OF NEW MEXICO	Dwornik, S. E.	HQ-SL	Elston, W. E.	NGL 32-004-011	2897
32	UNIV OF NEW MEXICO	French, B. M.	HQ-SL	Keil, K.	NGL 32-004-064	2899
32	UNIV OF NEW MEXICO	Dwornik, S. E.	HQ-SL	Elston, W. E.	NGR 32-004-062	2900
32	UNIV OKLAHOMA-NORMAN	Atwell, B. H.	NSTL	Harrington, J. A.	NAS13-122	3311
32	UNIV OREGON-EUGENE	Quaide, W. L.	HQ-SL	Weill, D. F.	NGR 38-003-020	3332
32	UNIV OF PITTSBURGH	Thomas, H. H.	GSFC	Lidiak, E. G	NSG 5270	3446
32	UNIV OF PITTSBURGH	Quaide, W. L.	HQ-SL	Cassidy, W. A.	NGL 39-011-085	3438
32	UNIV OF PITTSBURGH	Quaide, W. L.	HQ-SL	Hapke, B. W.	NSG 7631	3450
32	UNIV OF RHODE ISLAND	Dwornik, S. E.	HQ-SL	Boothroyd, J. C.	NSG 7414	3465
32	UNIV OF SANTA CLARA	Oberbeck, V. R.	ARC	Aggarwal, H. R.	NSG 2275	1686
32	UNIV OF SANTA CLARA	Quaide, W. L.	HQ-SL	Aggarwal, H. R.	NSG 7330	1688
32	UNIV SO CAROLINA-COL	Dwornik, S. E.	HQ-SL	Nummedal, D.	NSG 7076	3474
32	UNIV OF SOUTHERN CAL	Quaide, W. L.	HQ-SL	Huth, G. C.	NSG 7535	1706
32	UNIV TENNESSEE-KNOXV	Bensko, J.	MSFC	Shahrokhi, F.	NAS 8-32034	3498
32	UNIV TENNESSEE-KNOXV	French, B. M	HQ-SL	McSween, H. Y.	NSG 7413	3517
32	UNIV TEXAS-AUSTIN	White, W. W	GSFC	Silverberg, E. C.	NGR 44-012-165	3656
32	UNIV TEXAS-AUSTIN	Kolenkiewicz, R.	GSFC	Tapley, B. D.	NGR 44-012-283	3658
32	UNIV TEXAS-AUSTIN	Harris, J. W.	JSC	Gose, W. A.	NSG 9021	3690
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Baker, V. R.	NSG 7326	3681
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Muehlberger, W. R.	NSG 7363	3683
32	UNIV TEXAS-AUSTIN	Quaide, W. L.	HQ-SL	Smoluchowski, R.	NSG 7505	3688
32	UNIV TEXAS-AUSTIN	Dwornik, S. E.	HQ-SL	Baker, V. R.	NSG 7557	3689
32	UNIV TEXAS-GALVESTON	Quaide, W. L.	HQ-SL	Makamura, Y.	NSG 7418	3716
32	UNIV OF UTAH	Quaide, W. L.	HQ-SL	Shorthill, R. W.	NSG 7425	3733
32	UNIV OF VERMONT	Vitale, J. A.	HQ-ET	John, H. H.	NSG 7453	3753
32	UNIV OF VIRGINIA	Dwornik, S. E.	HQ-SL	Howard, A.	NGR 47-005-172	3851
32	UNIV OF VIRGINIA	Dwornik, S. E.	HQ-SL	Howard, A.	NSG 7572	3866
32	UNIV OF WASHINGTON	Harris, J. W.	JSC	Adams, J B.	NSG 9032	3958
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	Adams, J. B.	NSG 7173	3952
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	Adams, J. B.	NSG 7174	3953
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	McCallum, I. S	NSG 7313	3954
32	UNIV OF WASHINGTON	Quaide, W. L.	HQ-SL	Adams, J. B.	NSG 7448	3956
32	UNIV WISC-MADISON	Quaide, W. L.	HQ-SL	Taylor, J. W.	NSG 7215	4008
32	UNIV WISC-PARKSIDE	Dwornik, S. E.	HQ-SL	Smith, E. I.	NGR 50-009-001	4011
32	UTAH STATE UNIV	Young, R. S.	HQ-SB	Smith, G. G.	NSG 7038	3744
32	VA MILITARY INSTITUT	Quaide, W. L.	HQ-SL	Gates, W. L.	NSG 7355	3868
32	VIRGINIA POLY INST	Costes, N. C.	MSFC	Storre, S.	NAS 8-33449	3875
32	WASHINGTON UNIVERSTY	Harris, J. W.	JSC	Haskin, L. A.	NSG 9055	2792
32	WASHINGTON UNIVERSTY	Quaide, W. L.	HQ-SL	Hohenberg, C. M.	NSG 7016	2786
32	WASHINGTON UNIVERSTY	Dwornik, S. E.	HQ-SL	Arvidson, R. E.	NSG 7087	2787
32	WASHINGTON UNIVERSTY	Dwornik, S. E.	HQ-SL	Arvidson, R. E.	NSG 7545	2790
32	WASHINGTON UNIVERSTY	Quaide, W. L.	HQ-SL	Goettal, K. A.	NSG 7578	2791
33	CITY COLLEGE OF N Y	Schroeder, L. C.	LARC	Pierson, W. J.	NAS 1-15669	2905
33	HARVARD UNIVERSITY	Halem, M.	GSFC	Robinson, A R.	NSG 5228	2468
33	HARVARD UNIVERSITY	King, J. H.	HQ-ST	McElroy, M. B.	NASW 2952	2450
33	JOHNS HOPKINS UNIV	Stanley, H R.	WFC	Phillips, O. M.	NAS 6-2706	2306
33	JOHNS HOPKINS UNIV	Huang, N. E.	WFC	Phillips, O. M.	NAS 6-2888	2307
33	JOHNS HOPKINS UNIV	Huang, N. E.	WFC	Phillips, O. M.	NAS 6-2993	2308
33	NO CAROLINA STATE U	Huang, N. E.	WFC	Tung, C.	NAS 6-3018	3119

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33	RUTGERS U-N BRUNSWK	Jones, W. L.	LARC	Delnore, V. E.	NSG 1566	2873
33	SAN JOSE STATE UNIV	Wrigley, R. C.	ARC	Broenkow, W. W.	NSG 2239	1293
33	TEXAS A&M UNIVERSITY	Huang, N. E.	WFC	Ichiye, T.	NAS 6-2884	3574
33	UNIV CALIF-BERKELEY	Kim, H. H.	GSFC	Colwell, R. N.	NSG 5256	1466
33	UNIV CALIF-SAN DIEGO	Nelsen, E. D.	GSFC	Austin, R. W.	NAS 5-25450	1578
33	UNIV CALIF-SAN DIEGO	Whitlock, C. H.	LARC	Smith, R. C.	NSG 1641	1600
33	UNIV CALIF-SAN DIEGO	Salzman, J. A.	LERC	Austin, R. W.	NAS 3-21473	1570
33	UNIV CALIF-S BARBARA	Barnes, W. L.	GSFC	Estes, J. E.	NSG 5106	1653
33	UNIV OF DELAWARE	Huang, N. E.	WFC	Wu, J.	NAS 6-2820	1829
33	UNIV OF KANSAS	Schroeder, L. C.	LARC	Moore, R. K.	NSG 1397	2237
33	UNIV MD-EASTRN SHORE	Huang, N. E.	WFC	Dudis, J. J.	NSG 6025	2422
33	UNIV OF MIAMI	Mueller, J. L.	GSFC	Williams, F.	NSG 5344	1963
33	UNIV OF RHODE ISLAND	Campbell, J. W.	LARC	Spaulding, M. L.	NSG 1495	3464
33	UNIV OF RHODE ISLAND	Zetka, E. F.	NSTL	Tippie, V.	NAS13-112	3463
33	UNIV OF WASHINGTON	Huang, N. E.	WFC	Katsaros, K. B.	NAS 6-2996	3925
39	ALABAMA A&M UNIV	Downs, S. W., Jr.	MSFC	Montgomery, O. L.	NSG 8062	1009
39	ALABAMA A&M UNIV	Smith, A. D.	MSFC	Montgomery, O. L.	NSG 8066	1012
39	AUBURN UNIV-AUBURN	Huffman, J. D.	MSFC	Vachon, R. I.	NAS 8-32215	1019
39	BOSTON COLLEGE	Taylor, W. W.	HQ-ST	Eather, R. H.	NSG 7385	2426
39	BOSTON COLLEGE	Tomayko, D. W.	HQ-ST	Carovillano, R. L.	NSG 7468	2427
39	CALIF INST OF TECH	Williams, T. S., Jr.	LARC	Anderson, D. L.	NAS 1-9703	1167
39	CITY COLLEGE OF N Y	Hess, R. V.	LARC	Tchen, C. M.	NSG 1485	2910
39	COLORADO STATE UNIV	Nelsen, E. D.	GSFC	VonderHaar, T. H.	NAS 5-22959	1711
39	COLORADO STATE UNIV	Tucker, C. J.	GSFC	Maxwell, E. L.	NAS 5-22081	1712
39	COLORADO STATE UNIV	Toll, D.	GSFC	Maxwell, E. L.	NAS 5-25696	1713
39	CORNELL UNIVERSITY	Wydeven, T. J.	ARC	Shuler, M. L.	NSG 2408	2976
39	CORNELL UNIVERSITY	Vitale, J. A.	HQ-ET	Liang, T.	NGL 33-010-171	2957
39	DARTMOUTH COLLEGE	Ongar, S. G.	GSFC	Stoiber, R. E.	NSG 5014	2815
39	DARTMOUTH COLLEGE	King, J. H.	HQ-ST	Sonnerup, B. U.	NSG 7292	2818
39	FORT VALLEY STATE C	Wolverton, B. C.	NSTL	Rogerson, A. C.	NSG 735	1974
39	GEORGIA INST OF TECH	Slajna, E. F.	GSFC	Cunnold, D. M.	NAS 5-25817	1984
39	HAMPTON INSTITUTE	Poole, L. R.	LARC	Peterson, A. M.	NCC 1-11	3783
39	HOWARD UNIVERSITY	O'Keefe, J. A.	GSFC	Thorpe, A. M.	NAS 5-25185	1879
39	HOWARD UNIVERSITY	Pohly, J. G.	HQ-LU	Ferguson, G. A.	NGL 09-011-046	1883
39	HUMBOLDT STATE UNIV	Norman, S. M.	ARC	Fox, L.	NSG 2341	1258
39	HUMBOLDT STATE UNIV	Weinstein, R. H.	HQ-ET	Hankins, D. B.	NSG 7525	1259
39	JACKSON STATE UNIV	Wolverton, B. C.	NSTL	Garrity, E.	NSG 8026	2732
39	LA ST U&A&M COL-BRGE	Vitale, J. A.	HQ-ET	Whitehurst, C. A.	NGL 19-001-105	2271
39	MASS INST OF TECH	Williams, T. S., Jr.	LARC	Biemann, K.	NAS 1-9684	2485
39	MICHIGAN STATE UNIV	Vitale, J. A.	HQ-ET	Boylan, M. G.	NGL 23-004-083	2625
39	MISSISSIPPI STATE U	Vitale, J. A.	HQ-ET	Miller, W. F.	NGL 25-001-054	2741
39	NEW MEX ST U-LAS CR	Nitschke, H. A.	JSC	Henry, D. G.	NAS 9-95482	2888
39	NEW MEX ST U-LAS CR	Fenner, R. G.	JSC	Carver, K.	NAS 9-95497	2889
39	NEW YORK UNIVERSITY	Halem, M.	GSFC	Hoffert, M. I.	NSG 5133	3011
39	NO CAROLINA STATE U	Paludan, C. T.	MSFC	Welby, G.	NAS 8-31984	3120
39	OLD DOMINION UNIV	Browell, E. V.	LARC	Kindle, E. C.	NSG 1477	3818
39	OREGON STATE UNIV	Mueller, J. L.	GSFC	Zanevelu, R. V.	NAS 5-23738	3318
39	OREGON STATE UNIV	Vitale, J. A.	HQ-ET	Schrumpf, B. J.	NGL 38-002-053	3324
39	PAN AMERICAN UNIV	Heydorn, R. P.	JSC	Lemaster, E. W.	NSG [illegible]33	3539
39	PENN STATE U-UNIV PK	Alford, W. L.	GSFC	McMurtry, G. J.	NAS 5-23859	3375
39	PENN STATE U-UNIV PK	Irons, J.	GSFC	Petersen, G. W.	NAS 5-25667	3378
39	PRAIRIE VIEW A&M U	Browne, I. D.	JSC	Brams, E. A.	NSG 9006	3541
39	PURDUE UNIVERSITY	McEwen, M. C.	JSC	Bauer, M. E.	NAS 9-15081	[illegible]49
39	PURDUE UNIVERSITY	Joosten, R. E.	JSC	Mroczynski, R.	NAS 9-15325	[illegible]150
39	PURDUE UNIVERSITY	Erickson, J. D.	JSC	Landgrebe, D. A.	NAS 9-15466	2151
39	PURDUE UNIVERSITY	Amsbury, D. L.	JSC	Hoffer, R. M.	NAS 9-15508	2152
39	PURDUE UNIVERSITY	Maurer, H. E.	WFC	Phillips, T. L.	NAS 6-2695	2148
39	PURDUE UNIVERSITY	Vitale, J. A.	HQ-ET	Weismiller, R. A.	NGL 15-005-186	2156

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39	SAN JOSE STATE UNIV	Nishioka, K.	ARC	Ling, A. C.	NSG 2305	1296
39	SAN JOSE STATE UNIV	Johnson, R. D.	ARC	Funk, G. A.	NSG 2398	1304
39	SAVANNAH STATE COL	Perkins, E. E.	KSC	Ghuman, G. S.	NSG 803	2017
39	SO DAKOTA STATE UNIV	Schmugge, T. J.	GSFC	Heilman, J. L.	NSG 5396	3481
39	SO DAKOTA STATE UNIV	Vitale, J. A.	HQ-ET	Myers, V. I.	NGL 42-003-007	3480
39	STANFORD UNIVERSITY	Hofman, L. B.	ARC	Peterson, A. M.	NCA 2-745910	1336
39	STANFORD UNIVERSITY	Schmitz, F. H.	ARC	Karamcheti, K.	NSG 2254	1383
39	STANFORD UNIVERSITY	Roberson, F. I.	HQ-ET	McAlister, J. F.	NASW 3204	1323
39	STATE UNIV NY-ALBANY	Weinberg, I.	LERC	Corbett, J. W.	NSG 3095	3054
39	STATE UNIV NY-ALBANY	Vaughan, O. H.	MSFC	Vonnegut, B.	NAS 8-32893	3049
39	STATE U NY-STONY BRK	Williams, T. S., Jr.	LARC	Owen, T.	NAS 1-10493	3064
39	TEXAS A&M UNIVERSITY	Deering, D. W.	GSFC	Haos, R. H.	NAS 5-25715	3572
39	TEXAS A&M UNIVERSITY	Schmugge, T. J.	GSFC	Miller, L. D.	NCC 5 15	3590
39	TEXAS A&M UNIVERSITY	Wang, J. R.	GSFC	Newton, R. R.	NSG 5266	3602
39	TEXAS A&M UNIVERSITY	Juras, N. T.	JSC	Rouse, J. W., Jr.	NAS 9-13904	3579
39	TEXAS A&M UNIVERSITY	Blanchard, D.	JSC	Randall, J. D.	NAS 9-14828	3581
39	TEXAS A&M UNIVERSITY	Vitale, J. A.	HQ-ET	Blanchard, B. J.	NGL 44-001-001	3591
39	UNIV ALA-HUNTSVILLE	West, G. S., Jr.	MSFC	Hung, R. J.	NAS 8-31171	1044
39	UNIV ALASKA-FAIRBNKS	Lumb, D. R.	ARC	Krebs, P. V.	NCA 2-20901	1062
39	UNIV ALASKA-FAIRBNKS	Vitale, J. A.	HQ-ET	Miller, J. M.	NGL 02-001-092	1063
39	UNIV OF ARIZONA	Vitale, J. A.	HQ-ET	Johnson, J. D.	NGL 03-002-313	1115
39	UNIV CALIF-BERKELEY	Linlor, W. I.	ARC	Angelakos, D. J.	NCA 2-50704	1429
39	UNIV CALIF-BERKELEY	Norman, S. M.	ARC	Colwell, R. N.	NCA 2-50903	1435
39	UNIV CALIF-BERKELEY	Bauer, E.	ARC	Colwell, R. N.	NSG 2207	1459
39	UNIV CALIF-BERKELEY	Garcia, J. C.	JSC	Colwell, R. N.	NAS 9-14565	1427
39	UNIV CALIF-BERKELEY	Vitale, J. A.	HQ-ET	Colwell, R. N.	NGL 05-003-404	1442
39	UNIV CALIF-BERKELEY	Vitale, J. A.	HQ-ET	Colwell, R. N.	NSG 7220	1472
39	UNIV CALIF-BERKELEY	Quaide, W. L.	HQ-SL	Anderson, K. A.	NSG 7127	1469
39	UNIV CALIF-DAVIS	Rango, A.	GSFC	Algazi, V. R.	NSG 5092	1494
39	UNIV CALIF-L ANGELES	Wende, C. D.	GSFC	Coleman, P. J., Jr	NAS 5-23702	1505
39	UNIV CALIF-L ANGELES	Cauffman, D. P.	HQ-ST	Coleman, P. J., Jr.	NGL 05-007-004	1516
39	UNIV CALIF-L ANGELES	Cauffman, D. P.	HQ-ST	Siscoe, G. L.	NSG 7180	1551
39	UNIV CALIF-SAN DIEGO	Smith, D. E.	GSFC	Berger, J.	NGR 05-009-246	1596
39	UNIV CALIF-SAN DIEGO	Purvis, C. K.	LERC	Whipple, E. C., Jr.	NSG 3150	1606
39	UNIV CALIF-S BARBARA	Norman, S. M.	ARC	Estes, J. E.	NCA 2-680901	1642
39	UNIV CALIF-S BARBARA	Norman, S. M.	ARC	Estes, J. E.	NCA 2-680902	1643
39	UNIV CALIF-S BARBARA	Jones, H	ARC	Estes, J. E.	NCA 2-680903	1644
39	UNIV CALIF-S BARBARA	Jones, H.	ARC	Estes, J. E.	NSG 2358	1650
39	UNIV CALIF-S BARBARA	Peterson, D	ARC	Estes, J. E.	NSG 2377	1651
39	UNIV CALIF-S BARBARA	Rango, A.	GSFC	Dozier, J.	NSG 5262	1656
39	UNIV OF CENTRAL FLA	Buchanan, P.	KSC	Vickers, D. H.	NAS10-8986	1924
39	UNIV COLORADO-BOLDR	Jones, C. T.	MSFC	Toomre, D. J.	NAS 8-31958	1748
39	UNIV COLORADO-BOLDR	Vitale, J. A.	HQ-ET	Ives, J. D.	NGL 06-003-200	1756
39	UNIV DC-HARVARD OA	Ruitberg, A. P.	GSFC	Walker, E. L.	NGR 09-053-003	1899
39	UNIV DC-MT VERNON SQ	Gross, F. C.	GSFC	Phelps, H. L.	NGR 09-050-019	1901
39	UNIV OF DELAWARE	Bowker, D. E.	LARC	Klemas, V.	NSG 1433	1832
39	UNIV OF DENVER	Orr, H. D., III	LARC	Murcray, D. G.	NSG 1432	1804
39	UNIV OF FLORIDA	Pope, C. D.	KSC	Manvi, R.	NAS10-8920	1930
39	UNIV OF FLORIDA	Pope, C. D.	KSC	Gerber, J. F.	NAS10-9168	1931
39	UNIV OF FLORIDA	Bland, R. A.	KSC	Arvanitis, L. G.	NAS10-9466	1933
39	UNIV OF FLORIDA	Horn, F. W.	KSC	Blazquez, C. H.	NAS10-9666	1935
39	UNIV OF FLORIDA	Vitale, J. A.	HQ-ET	Ruth, B. E.	NSG 7236	1950
39	UNIV HOUSTON-HOUSTON	Browne, I. D	JSC	Decell, H. P., Jr.	NAS 9-15543	3614
39	UNIV OF KANSAS	Demel, K. J.	JSC	Ulaby, F. T.	NAS 9-14052	2230
39	UNIV OF KANSAS	Vitale, J. A.	HQ-ET	Barr, B. G.	NGL 17-004-024	2234
39	UNIV MARYLAND-COL PK	Trombka, J. I	GSFC	Sommer, S. E.	NAS 5-23457	2339
39	UNIV MARYLAND-COL PK	Short, N. M.	GSFC	Ragan, R. M.	NAS 5-25851	2346
39	UNIV MD-EASTRN SHORE	Trafford, G. H	WFC	Gupta, G. C.	NSG 6034	2424

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39	UNIV MICH-ANN ARBOR	Ruff, R. C.	MSFC	Shyn, T. W.	NAS 8-32661	2653
39	U MINN-MNPLS-ST PAUL	Vitale, J. A	HQ-ET	Shepherd, W. G.	NGL 24-005-263	2708
39	U MINN-MNPLS-ST PAUL	King, J. H.	HQ-ST	Winckler, J. R.	NSG 7005	2722
39	UNIV MO-COLUMBIA	Schmugge, T. J.	GSFC	Rouse, J. W., Jr.	NSG 5338	2763
39	UNIV MO-COLUMBIA	Harnage, M. J.	JSC	Rouse, J. W., Jr.	NAS 9-15896	2759
39	UNIV OF MONTANA	Oseroff, H.	GSFC	Craighead, J. J.	NAS 5-23891	2796
39	UNIV NEBRASKA-LINCLN	Vitale, J. A.	HQ-ET	Carlson, M. P.	NGL 28-004-020	2797
39	UNIV OF PENNSYLVANIA	Barnes, C. M.	JSC	Shen, B. S.	NAS 9-15789	3428
39	UNIV SO CAROLINA-COL	Vitale, J. A.	HQ-ET	Cooper, J. M.	NSG 7504	3476
39	UNIV SO MISSISSIPPI	Wolverton, B. C.	NSTL	Stocks, P. K.	NAS13-81	2751
39	UNIV TENNESSEE-KNOXV	Golden, T. S.	GSFC	Snyder, W. M.	NAS 5-25101	3492
39	UNIV TENNESSEE-KNOXV	Anderson, B. J.	MSFC	Carter, J. M.	NAS 8-32611	3499
39	UNIV TENNESSEE-KNOXV	Daniel, J. L.	MSFC	Shahrokhi, F.	NAS 8-33218	3503
39	UNIV OF UTAH	Vitale, J. A.	HQ-ET	Ridd, M. K.	NSG 7226	3732
39	UNIV WISC-MADISON	Middleton, E.	GSFC	Scarpice, F. L.	NAS 5-25505	3983
39	UNIV WISC-MADISON	Vitale, J. A.	HQ-ET	Clapp, J. L.	NGL 50-002-127	3991
39	VIRGINIA POLY INST	Tenney, D. R.	LARC	Unnam, J.	NCC 1 10	3878
39	VIRGINIA POLY INST	Scott, J. H., Jr.	WFC	Powell, N. L.	NAS 6-2388	3873
39	WASHINGTON UNIVERSTY	Williams, T. S., Jr.	LARC	Arvidson, R. E.	NAS 1-13889	2777
39	WASHINGTON UNIVERSTY	Daniels, J L, Jr.	MSFC	Eastwood, L.	NAS 8-32354	2780
39	XAVIER UNIV-LA	Espy, P. N.	MSFC	Ioup, J. W.	NSG 8050	2294
41	ARIZONA STATE UNIV	Hippensteele, S. A.	LERC	Metzger, D. E.	NSG 3075	1080
41	AUBURN UNIV-AUBURN	Shackelford, B. W., Jr.	MSFC	Sforzini, R. H.	NCA 8-130	1023
41	BOSTON UNIVERSITY	Yates, E. C., Jr.	LARC	Morino, L.	NGR 22-004-030	2432
41	BROWN UNIVERSITY	Townsend, J. C.	LARC	Sirovich, L.	NSG 1617	3457
41	CALIF INST OF TECH	Houbolt, J. C.	LARC	Culick, F. E.	NAS 1-15068	1168
41	CALIF INST OF TECH	Starns, J. H., Jr.	LARC	Knauss, W. G.	NSG 1483	1204
41	CAL POLY ST U-S LUIS	Magee, J. P.	ARC	Grimes, J. E.	NAS 2-10364	1234
41	CAL POLY ST U-S LUIS	Koenig, D. G.	ARC	Hoffmann, J. A.	NSG 2391	1235
41	CAL POLY ST U-S LUIS	Ayers, T. G.	DFRC	Sandlin, D R	NSG 4014	1236
41	CAL POLY ST U-S LUIS	Gee, S. W.	DFRC	Sandlin, D. R.	NSG 4020	1237
41	CAL POLY ST U-S LUIS	Gee, S. W.	DFRC	Sandlin, D. R	NSG 4022	1238
41	CASE WESTERN RESERVE	Sockol, P. M.	LERC	Reshotko, E.	NCC 3 4	3148
41	CASE WESTERN RESERVE	Bishop, A. R.	LERC	Reshotko, E.	NGR 36-027-064	3151
41	CASE WESTERN RESERVE	Sockol, P. M.	LERC	Reshotko, E.	NSG 3062	3157
41	CASE WESTERN RESERVE	Anderson, B. H.	LERC	Lynch, W. C.	NSG 3115	3160
41	CASE WESTERN RESERVE	Riddlebaugh, S. M.	LERC	Greber, I.	NSG 3206	3168
41	CASE WESTERN RESERVE	Anderson, B. H.	LERC	Parke, F. I.	NSG 3207	3169
41	CASE WESTERN RESERVE	Hingst, W. R.	LERC	Greber, I.	NSG 3211	3170
41	CASE WESTERN RESERVE	Hingst, W. R.	LERC	Greber, I.	NSG 3271	3178
41	CLEMSON UNIV-CLEMSON	Doggett, R. V., Jr.	LARC	Rudisill, C. S.	NSG 1411	3468
41	CLEVELAND STATE UNIV	Dunning, R. S.	LARC	Chukwu, E N.	NSG 1445	3192
41	COLORADO STATE UNIV	Sockol, P. M.	LERC	Sadeh, W. Z.	NSG 3127	1728
41	COLUMBIA UNIVERSITY	Harris, R. L., Sr.	LARC	Galanter, E.	NCC 1 5	2926
41	COLUMBIA UNIVERSITY	Mixson, J. S.	LARC	Vaicaitis, R.	NSG 1450	2932
41	COLUMBIA UNIVERSITY	Harris, R. L., Sr	LARC	Galanter, E	NSG 1541	2933
41	CORNELL UNIVERSITY	Yu, Y. H.	ARC	George, A. R	NSG 2331	2970
41	CORNELL UNIVERSITY	Schmitz, F. H.	ARC	George, A R.	NSG 2360	2972
41	CORNELL UNIVERSITY	Chapman, G. T.	ARC	Lumley, J. L.	NSG 2382	2973
41	CORNELL UNIVERSITY	Marek, C. J.	LERC	Gouldin, F. C.	NSG 3019	2977
41	DEL MAR COLLEGE	Murrow, H. N.	LARC	Trevino, G.	NSG 1615	3535
41	DREXEL UNIVERSITY	Price, D. B.	LARC	Calise, A. J.	NSG 1496	3350
41	EMBRY-RIDDLE AERO U	Houck, J. A.	LARC	Gandelman, J. H.	NAS 1-15724	1906
41	GEORGE WASHINGTON U	Duberg, J. E.	LARC	Liebowitz, H.	NAS 1-14605	1844
41	GEORGE WASHINGTON U	Margeolis, K.	LARC	Liebowitz, H.	NCC 1 14	1848
41	GEORGE WASHINGTON U	Bobbitt, P. J.	LARC	Liebowitz, H.	NCC 1 24	1850
41	GEORGE WASHINGTON U	Erickson, W. D.	LARC	Liebowitz, H.	NCC 1 27	1851
41	GEORGE WASHINGTON U	Bobbitt, P. J.	LARC	Liebowitz, H.	NGR 09-010-074	1853

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41	GEORGE WASHINGTON U	Anderson, R. A.	LARC	Liebowitz, H	NGR 09-010-078	1854
41	GEORGE WASHINGTON U	Margeolis, K.	LARC	Liebowitz, H.	NGR 09-010-085	1855
41	GEORGE WASHINGTON U	Suit, W T.	LARC	Liebowitz, H.	NSG 1161	1860
41	GEORGE WASHINGTON U	Kemp, W. B., Jr.	LARC	Liebowitz, H.	NSG 1585	1869
41	GEORGIA INST OF TECH	Young, W. H., Jr.	LARC	Gray, R. B.	NAS 1-15158	1979
41	GEORGIA INST OF TECH	Lee, B. L.	LARC	Pierce, G. A	NSG 1592	1994
41	GEORGIA INST OF TECH	Baumeister, K. J.	LERC	Zinn, B. T.	NSG 3036	2000
41	GEORGIA INST OF TECH	Sockol, P. M	LERC	Johnston, W. A.	NSG 3260	2004
41	GEORGIA INST OF TECH	McFarland, E. R.	LERC	Wu, J.	NSG 3307	2006
41	HAMPTON INSTITUTE	Jewel, J. W., Jr.	LARC	Williams, G. K	NAS 1-14507	3777
41	HAMPTON INSTITUTE	Knox, C. E.	LARC	Hargrove, A.	NAS 1-15445	3779
41	HAMPTON INSTITUTE	Beckwith, I. E.	LARC	Anyiwo, J C	NAS 1-15877	3780
41	HAMPTON INSTITUTE	Beckwith, I. E	LARC	Anyiwo, J. C.	NSG 1505	3786
41	HARVARD UNIVERSITY	Doolin, B. F	ARC	Brockett, R. W.	NSG 2265	2461
41	HARVEY MUDD COLLEGE	Luebs, A. B.	ARC	Williams, H.	NCA 2-283801	1256
41	HOWARD UNIVERSITY	Barrowman, J S.	GSFC	McElroy, M B	NAS 5-24242	1876
41	ILL INST OF TECH	Adelman, H. M.	LARC	Haftka, R T	NSG 1266	2060
41	ILL INST OF TECH	Hefner, J. N.	LARC	Nagib, H. M.	NSG 1591	2061
41	ILL INST OF TECH	Groeneweg, J. F.	LERC	Nagib, H. M	NSG 3220	2062
41	IMPERIAL C SCI & TEC	Povinelli, F. P.	HQ-RP	Whitelow, J.	NASW 3258	4028
41	IND U-PURDUE-INDAPLS	Sockol, P. M	LERC	Bodonyi, R J	NSG 3183	2143
41	IND U-PURDUE-INDAPLS	Chima, R. U.	LERC	Ecer, A	NSG 3294	2144
41	IOWA STATE UNIV	Hicks, R. M.	ARC	Vogel, J [illegible]	NCC 2 19	2188
41	IOWA STATE UNIV	Rakich, J. V.	ARC	Tannehill, J. C.	NGR 16-002-038	2190
41	IOWA STATE UNIV	Malcolm, G. N.	ARC	James, W. D.	NSG 2091	2196
41	IOWA STATE UNIV	Olson, L. E.	ARC	James, W D.	NSG 2257	2197
41	IOWA STATE UNIV	Salas, M. D	LARC	Anderson, D. A.	NCC 1 17	2187
41	IOWA STATE UNIV	Salas, M. D.	LARC	Anderson, D. A.	NSG 1535	2192
41	IOWA STATE UNIV	Morris, D. J.	LARC	Iversen, J. D.	NSG 1582	2194
41	IOWA STATE UNIV	Corsiglia, V. R.	HQ-	Nogel, J.	NCC 2 22	2189
41	ISRAEL INST OF TECH	Abel, I.	LARC	Nissim, E.	NSG 7373	4033
41	JOHNS HOPKINS UNIV	Rubesin, M. W	ARC	Corrsin, S	NSG 2303	2317
41	LEHIGH UNIVERSITY	Batterton, P. G.	LERC	Rockwell, D O.	NSG 3162	3369
41	MASS INST OF TECH	Johnson, W. R.	ARC	Widnall, S. E.	NSG 2142	2558
41	MASS INST OF TECH	Johnson, W. R.	ARC	Ham, N D.	NSG 2266	2564
41	MASS INST OF TECH	Heath, D. F.	GSFC	Cunniold, D. M	NAS 5-22915	2496
41	MASS INST OF TECH	Gloersen, P.	GSFC	Staelin, D. H	NAS 5-22929	2497
41	MASS INST OF TECH	Hubbard, H. H.	LARC	Ingard, K V.	NAS 1-15154	2487
41	MASS INST OF TECH	Maddalon, D V.	LARC	Taneja, N K	NAS 1-15268	2488
41	MASS INST OF TECH	Harris, R. L., Sr	LARC	Tole, J R	NCC 1 23	2517
41	MASS INST OF TECH	Downing, D. R.	LARC	Simpson R W.	NGL 22-009-640	2527
41	MASS INST OF TECH	Boyden, R. P.	LARC	Covert, E E	NSG 1356	2547
41	MASS INST OF TECH	Bushnell, D. M	LARC	Melcher, J. R	NSG 1453	2549
41	MASS INST OF TECH	Boyden, R. P.	LARC	Covert, E E	NSG 1502	2550
41	MASS INST OF TECH	Crouse, J. E.	LERC	Kerrebrock, J L	NAS 3-20473	2492
41	MASS INST OF TECH	McNally, W. D.	LERC	Kerrebrock, J. L.	NGL 22-009-383	2524
41	MASS INST OF TECH	Holms, A. G.	LERC	Wittmer, E. A	NGR 22-009-339	2530
41	MASS INST OF TECH	Brabbs, T. A.	LERC	Hoult, D. P	NSG 3076	2572
41	MASS INST OF TECH	Adamczyk, J. J.	LERC	Kerrebrock, J. L.	NSG 3079	2573
41	MASS INST OF TECH	Baumeister, K. J.	LERC	Ungard, K U	NSG 3129	2574
41	MASS INST OF TECH	Adamczyk, J. J.	LERC	Greitzer, E. M.	NSG 3208	2577
41	MASS INST OF TECH	McNally, W. D	LERC	Kerrebrock, J. L.	NSG 3234	2579
41	MASS INST OF TECH	Janetzke, D. C.	LERC	Miller, R. H.	NSG 3303	2582
41	MISSISSIPPI STATE U	South, J. C., Jr.	LARC	Thompson, J. F.	NGR 25-001-055	2742
41	MISSISSIPPI STATE U	Hall, A W	LARC	Rogerson, A. C.	NSG 1083	2743
41	MISSISSIPPI STATE U	Stewart, E. C	LARC	Bennett, A G., Jr	NSG 1249	2744
41	MISSISSIPPI STATE U	Hassell, J. L., Jr	LARC	Bennett, A G., Jr	NSG 1402	2745
41	MISSISSIPPI STATE U	Judd, J. H.	LARC	Bennett, A G., Jr	NSG 1454	2746

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41	MISSISSIPPI STATE U	Holmes, B. J.	LARC	Cross, E. J.	NSG 1511	2747
41	MISSISSIPPI STATE U	Thomas, J. L.	LARC	Bennett, A. G., Jr.	NSG 1623	2749
41	NEW YORK UNIVERSITY	Hicks, R. M.	ARC	Garabedian, P. R.	NGR 33-016-201	3002
41	NEW YORK UNIVERSITY	Huber, P. W.	LARC	Agnone, A. M.	NGR 33-016-131	3000
41	NEW YORK UNIVERSITY	Edwards, C. L.	LARC	Zakkay, V.	NSG 1444	3003
41	NEW YORK UNIVERSITY	Liu, C. H.	LARC	Ting, L.	NSG 1469	3004
41	NO CAROLINA STATE U	Kurtenbach, F. J.	DFRC	Smetana, F. O.	NSG 4025	3137
41	NO CAROLINA STATE U	Lamar, J. E.	LARC	Dejarnette, F. R.	NCC 1 13	3121
41	NO CAROLINA STATE U	South, J. C., Jr.	LARC	Hassan, H. A	NCC 1 22	3122
41	NO CAROLINA STATE U	Crane, H. L.	LARC	Smetana, F. O.	NSG 1077	3127
41	NO CAROLINA STATE U	Brooks, T. F.	LARC	Hodgson, T. H.	NSG 1377	3131
41	NO CAROLINA STATE U	Crane, H. L.	LARC	Smetana, F. O.	NSG 1584	3135
41	NORTHWESTERN UNIV	Anderson, J. L.	ARC	Spencer, F. A.	NSG 2149	2068
41	NORTHWESTERN UNIV	Anderson, J. L.	ARC	Spencer, F. A.	NSG 2328	2069
41	OHIO STATE UNIV	Holst, T. L.	ARC	Nakamura, S.	NCA 2-565901	3215
41	OHIO STATE UNIV	McDevitt, J. B.	ARC	Petrie, S. L.	NSG 2298	3229
41	OHIO STATE UNIV	Barnwell, R. W.	LARC	Gregorek, G. M	NAS 1-14406	3207
41	OHIO STATE UNIV	Greene, G. C	LARC	Gregorek, G. M.	NAS 1-15680	3208
41	OHIO STATE UNIV	Bergeron, H. P	LARC	Weislogel, G. S.	NAS 1-15969	3209
41	OHIO STATE UNIV	Holmes, B. J.	LARC	Gilson, R D.	NSG 1620	3223
41	OHIO STATE UNIV	Barnwell, R. W.	LARC	Burggraf, O. R.	NSG 1622	3224
41	OHIO STATE UNIV	Mikkelson, D. C.	LERC	Gregorek, G M.	NSG 3247	3232
41	OKLAHOMA STATE UNIV	Steinle, F. W., Jr.	ARC	Moretti, P. M.	NSG 2396	3301
41	OKLAHOMA STATE UNIV	Gilyard, G. B.	DFRC	Swain, R. L.	NSG 4018	3302
41	OKLAHOMA STATE UNIV	Seiner, J. M.	LARC	McLaughlin, D. K.	NSG 1467	3300
41	OLD DOMINION UNIV	Erickson, W. D.	LARC	Unavailable	NAS 1-15648	3790
41	OLD DOMINION UNIV	Peterson, J. B., Jr.	LARC	Goglia, G. L	NCC 1 9	3792
41	OLD DOMINION UNIV	Erickson, W. D.	LARC	Roberts, A. S., Jr.	NGR 47-003-052	3793
41	OLD DOMINION UNIV	Kershner, D. D.	LARC	Barna, P. S.	NSG 1143	3798
41	OLD DOMINION UNIV	Davis, J. G., Jr.	LARC	Thornton, E. A.	NSG 1167	3799
41	OLD DOMINION UNIV	Peterson, J. B., Jr.	LARC	Goglia, G. L.	NSG 1315	3803
41	OLD DOMINION UNIV	Peterson, J. B., Jr.	LARC	Kuhlman, J. M	NSG 1357	3808
41	OLD DOMINION UNIV	Graves, R. A., Jr.	LARC	Tiwari, S. N.	NSG 1464	3815
41	OLD DOMINION UNIV	Creedon, J. F	LARC	Tcheng, P. L.	NSG 1480	3819
41	OLD DOMINION UNIV	Bushnell, D. M.	LARC	Goglia, G. L.	NSG 1491	3820
41	OLD DOMINION UNIV	Kilgore, R. A.	LARC	Goglia, G. L	NSG 1503	3822
41	OLD DOMINION UNIV	Dwoyer, D. L.	LARC	Cooke, C. H.	NSG 1517	3824
41	OLD DOMINION UNIV	Moul, M. T.	LARC	Liberty, S. R.	NSG 1519	3825
41	OLD DOMINION UNIV	Yates, E. C., Jr.	LARC	Kandil, O. A.	NSG 1560	3828
41	OLD DOMINION UNIV	Lamar, J. E.	LARC	Goglia, G L.	NSG 1561	3829
41	OLD DOMINION UNIV	Gentry, G. L.	LARC	Barna, P. S.	NSG 1563	3830
41	OLD DOMINION UNIV	Bushnell, D. M.	LARC	Grosch, C. E.	NSG 1618	3833
41	OLD DOMINION UNIV	Hefner, J. N.	LARC	Ash, R. L.	NSG 1634	3834
41	OLD DOMINION UNIV	Harvey, W. D.	LARC	Goglia, G. L.	NSG 1645	3835
41	OLD DOMINION UNIV	Moul, M. T.	LARC	Liberty, S. R.	NSG 1650	3837
41	OREGON STATE UNIV	Iliff, K. W.	DFRC	Ruzicka, J.	NSG 4013	3325
41	PENN STATE U-UNIV PK	Fisher, B. D.	LARC	McCormick, B. W.	NSG 1308	3395
41	PENN STATE U-UNIV PK	Gatski, T. B.	LARC	Morris, P. J.	NSG 1580	3397
41	PENN STATE U-UNIV PK	Britsch, W. R.	LERC	Lakshminarayana, B	NGL 39-009-007	3390
41	PENN STATE U-UNIV PK	Heidmann, M. F.	LERC	Eisenhuth, J.	NSG 3012	3399
41	PENN STATE U-UNIV PK	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3032	3401
41	PENN STATE U-UNIV PK	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3212	3403
41	PENN STATE U-UNIV PK	Sanger, N. L.	LERC	Kubo, I.	NSG 3264	3404
41	PENN STATE U-UNIV PK	Englert, G. W.	LERC	Morris, P. J.	NSG 3265	3405
41	PENN STATE U-UNIV PK	Sockol, P. M.	LERC	Lakshminarayana, B.	NSG 3266	3406
41	PENN STATE U-UNIV PK	Mitchell, G. A.	LERC	McCormick, B. W.	NSG 3304	3408
41	POLY INST OF NY	Schmitz, F. H.	ARC	Isom, M.	NSG 2368	3022
41	POLY INST OF NY	Salas, M. D.	LARC	Moretti, G.	NSG 1248	3018

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41	POLY INST OF NY	Swanson, R. C	LARC	Rubin, S. G.	NSG 1559	3019
41	PRINCETON UNIVERSITY	Davis, S. S.	ARC	Dowell, E. H.	NSG 2194	2853
41	PRINCETON UNIVERSITY	Horstman, C. C.	ARC	Bogdonoff, S. M.	NSG 2299	2854
41	PRINCETON UNIVERSITY	Miller, G. K.	LARC	Sockel, E.	NAS 1-13502	2834
41	PRINCETON UNIVERSITY	Downing, D. R.	LARC	Stengel, R. F.	NAS 1-15758	2835
41	PRINCETON UNIVERSITY	Niessen, F. R.	LARC	Stengel, R. F.	NAS 1-15764	2836
41	PRINCETON UNIVERSITY	Downing, D. R.	LARC	Graham, D.	NGL 31-001-252	2846
41	PRINCETON UNIVERSITY	Mixson, J. S.	LARC	Dowell, E. H.	NSG 1253	2849
41	PRINCETON UNIVERSITY	Schy, A. A.	LARC	Stengel, R. F.	NSG 1587	2850
41	PRINCETON UNIVERSITY	Jones, J. J.	LARC	Bienkowski, G. K.	NSG 1630	2851
41	PRINCETON UNIVERSITY	Braun, W. H.	LERC	Dowell, E. H.	NSG 3292	2858
41	PURDUE UNIVERSITY	Gregory, T. J.	ARC	Anderson, D. C.	NSG 2192	2159
41	PURDUE UNIVERSITY	Berry, D. T.	DFRC	Laver, J. A.	NSG 4003	2171
41	PURDUE UNIVERSITY	Swanson, R. C.	LARC	McCarthy, D. R.	NSG 1635	2158
41	PURDUE UNIVERSITY	Davidson, H. W.	LERC	L'Ecuyer, M. R.	NSG 3071	2162
41	PURDUE UNIVERSITY	Katsanis, T.	LERC	Meinke, W. J.	NSG 3105	2163
41	PURDUE UNIVERSITY	Lehtinen, B.	LERC	Leonard, R. G.	NSG 3119	2164
41	PURDUE UNIVERSITY	Serafini, J. S.	LERC	Sullivan, J. P	NSG 3135	2165
41	PURDUE UNIVERSITY	Chamis, C. C.	LERC	Sun, C. T.	NSG 3185	2166
41	PURDUE UNIVERSITY	Cooper, L. P.	LERC	Lefebvre, A. H.	NSG 3213	2167
41	PURDUE UNIVERSITY	Boldman, D. R.	LERC	Fleeter, S.	NSG 3285	2170
41	RENSSELAER POLY-NY	Barnwell, R. W.	LARC	Nagamatsu, H. T.	NSG 1624	3038
41	RENSSELAER POLY-NY	Simoneau, R. J.	LERC	Mayle, R. E.	NSG 3262	3042
41	RUTGERS U-N BRUNSWK	Claus, R. W.	LERC	Johnson, J. A.	NSG 3280	2874
41	SOUTHERN METHODIST U	Bushnell, D. M.	LARC	Simpson, R. L.	NSG 1548	3566
41	STANFORD UNIVERSITY	Lomax, H.	ARC	Shevell, R. S.	NCA 2-745001	1324
41	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NCC 2 13	1341
41	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NCC 2 18	1343
41	STANFORD UNIVERSITY	Carr, L. W.	ARC	Reynolds, W. C.	NCC 2 21	1344
41	STANFORD UNIVERSITY	Franklin, J. A.	ARC	Debra, D. B.	NSG 2100	1374
41	STANFORD UNIVERSITY	Galloway, T. L.	ARC	Shevell, R. S.	NSG 2190	1376
41	STANFORD UNIVERSITY	Belsley, S. E.	ARC	Dajani, J. R.	NSG 2203	1377
41	STANFORD UNIVERSITY	Hickey, D. H.	ARC	Karamcheti, K.	NSG 2215	1378
41	STANFORD UNIVERSITY	Davis, S. S.	ARC	Karamcheti, K.	NSG 2233	1379
41	STANFORD UNIVERSITY	McCroskey, W. J.	ARC	Reynolds, W. C.	NSG 2258	1384
41	STANFORD UNIVERSITY	Nagel, D. C.	ARC	Karamcheti, K.	NSG 2297	1389
41	STANFORD UNIVERSITY	Chapman, G.	ARC	Karamcheti, K.	NSG 2308	1390
41	STANFORD UNIVERSITY	Ciffone, D. L.	ARC	Ashley, H.	NSG 2359	1392
41	STANFORD UNIVERSITY	Tauber, M.	ARC	Karamcheti, K.	NSG 2370	1393
41	STANFORD UNIVERSITY	Chapman, G. T.	ARC	Cantwell, B.	NSG 2392	1395
41	STANFORD UNIVERSITY	Franklin, J. A.	ARC	Debra, D. B.	NSG 2400	1397
41	STANFORD UNIVERSITY	Edwards, J. W.	DFRC	Debra, D. B	NSG 4002	1399
41	STANFORD UNIVERSITY	Doggett, R. V., Jr.	LARC	Ashley, H	NGL 05-020-243	1350
41	STEVENS INST OF TECH	Bushnell, D. M.	LARC	Salwen, H.	NSG 1619	2879
41	TEXAS A&M UNIVERSITY	Gambucci, B. J.	ARC	Brusse, J. C.	NAS 2-10272	3568
41	TEXAS A&M UNIVERSITY	Wong, J. T.	ARC	Phillips, D. T.	NSG 2226	3597
41	TEXAS A&M UNIVERSITY	Nelsen, E. D.	GSFC	El-Sayed, S. Z.	NAS 5-22966	3570
41	TEXAS A&M UNIVERSITY	South, J. C., Jr.	LARC	Carlson, L. A	NSG 1174	3593
41	TEXAS A&M UNIVERSITY	Chambers, J. R.	LARC	Chevalier, H. L.	NSG 1407	3595
41	TUSKEGEE INSTITUTE	Glassman, A. J.	LERC	Jenkins, R. M.	NSG 3295	1034
41	UNIV OF AKRON	Chamis, C. C.	LERC	Adams, M. L.	NSG 3283	3244
41	UNIV OF ARIZONA	Ballhaus, W. F.	ARC	Seebass, A. R.	NSG 2112	1125
41	UNIV ARKANSAS-FAYETV	Ragent, B.	ARC	Broecker, W. S.	NGL 04-001-007	1165
41	UNIV CALIF-BERKELEY	Lee, C.	ARC	Holt, M.	NGR 05-003-451	1448
41	UNIV CALIF-BERKELEY	Williams, L. J.	ARC	Kanafani, A.	NSG 2127	1457
41	UNIV CALIF-BERKELEY	Marks, C. J.	LERC	Oppenheim, A. K.	NSG 3227	1463
41	UNIV CALIF-DAVIS	Marvin, J. G.	ARC	Launder, B.	NSG 2256	1491
41	UNIV CALIF-L ANGELES	Ahtye, W. F.	ARC	Meecham, W. C.	NSG 2290	1530

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41	UNIV CALIF-L ANGELES	Edwards, J. W.	DFRC	Seidel, B. S.	NSG 4015	1537
41	UNIV CALIF-L ANGELES	Hammond, C. E.	LARC	Friedman, P. P.	NSG 1578	1529
41	UNIV CALIF-L ANGELES	Friedman, R.	LERC	Liu, C. Y.	NSG 3116	1533
41	UNIV CALIF-SAN DIEGO	Marek, C. J.	LERC	Libby, P. A.	NSG 3219	1607
41	UNIV OF CINCINNATI	Erzberger, H.	ARC	Slater, G. L.	NCA 2-130801	3246
41	UNIV OF CINCINNATI	Rakich, J. V.	ARC	Davis, R. T.	NCA 2-130901	3247
41	UNIV OF CINCINNATI	McFarland, E. R.	LERC	Tabakoff, W.	NAS 3-21609	3245
41	UNIV OF CINCINNATI	Stepka, F. S.	LERC	Tabakoff, W.	NSG 3066	3252
41	UNIV OF CINCINNATI	Kao, H. C.	LERC	Ghia, K. N.	NSG 3267	3258
41	UNIV COLORADO-BOLDR	Senn, E. H.	LARC	Riddle, W. E.	NSG 1638	1761
41	UNIV COLORADO-BOLDR	Groeneweg, J. F.	LERC	Uberoi, M. S.	NSG 3181	1763
41	UNIV COLORADO-DENVER	Housner, J. M.	LARC	Thurston, G. A.	NAS 1-15775	1794
41	UNIV OF DAYTON	Acurio, J.	LERC	Militello, J.	NAS 3-21698	3262
41	UNIV OF DAYTON	Camp, D. W.	MSFC	Leurs, J. K.	NAS 8-31294	3264
41	UNIV OF DAYTON	Camp, D. W.	MSFC	Luers, J. K.	NAS 8-32111	3265
41	UNIV OF DAYTON	Melson, W. E., Jr.	WFC	Luers, J. K.	NSG 6026	3269
41	UNIV OF DELAWARE	Bushnell, D. M.	LARC	Danberg, J. E.	NSG 1513	1834
41	UNIV OF DELAWARE	Adamczyk, J. J.	LERC	Seidel, B. S.	NSG 3189	1836
41	UNIV OF DELAWARE	Farrell, C. A., Jr.	LERC	Seidel, B. S.	NSG 3270	1837
41	UNIV OF FLORIDA	Malcolm, G. N.	ARC	Clarkson, M. H.	NSG 2120	1944
41	UNIV OF FLORIDA	Aoyagi, K.	ARC	Fearn, R. L.	NSG 2288	1945
41	UNIV HOUSTON-HOUSTON	Eggleston, J. M.	JSC	Michalopoulos, C. O.	NAS 9-15193	3612
41	UNIV HOUSTON-HOUSTON	Maestrello, L.	LARC	Hussain, A. K.	NSG 1475	3623
41	UNIV ILLINOIS-CHICGO	Evans, J. S.	LARC	Chung, P. M.	NSG 1150	2110
41	UNIV ILLINOIS-URBANA	Salmirs, S.	LARC	Jensen, R. S.	NAS 1-14731	2112
41	UNIV ILLINOIS-URBANA	Jordan, F. L.	LARC	Ormsbee, A. I.	NSG 1434	2120
41	UNIV ILLINOIS-URBANA	Bober, L. J.	LERC	Chow, W. L.	NGL 14-005-140	2116
41	UNIV OF IOWA	Marvin, J. G.	ARC	Ramaprian, B. R.	NSG 2300	2214
41	UNIV OF IOWA	Stockman, N. O.	LERC	Chou, D. C.	NSG 3117	2216
41	UNIV OF IOWA	Johnson, G. M.	LERC	Chen, C J.	NSG 3305	2217
41	UNIV OF KANSAS	Jenkins, J M.	DFRC	Lenzen, K. H.	NSG 4008	2244
41	UNIV OF KANSAS	Edwards, J. W.	DFRC	Kotsabasis, A.	NSG 4017	2245
41	UNIV OF KANSAS	Kordes, E. E.	DFRC	Roskam, J.	NSG 4019	2246
41	UNIV OF KANSAS	Holmes, B. J.	LARC	Roskam, J.	NAS 1-15770	2227
41	UNIV OF KANSAS	Stephens, D. G.	LARC	Roskam, J.	NCC 1 6	2232
41	UNIV OF KANSAS	Campbell, J. F.	LARC	Lan, C. E.	NCC 1 18	2233
41	UNIV OF KANSAS	Lamar, J. E.	LARC	Roskam, J.	NSG 1046	2235
41	UNIV OF KANSAS	Campbell, J. F.	LARC	Lan, C. E.	NSG 1537	2238
41	UNIV OF KANSAS	Hassell, J. L., Jr.	LARC	Roskam, J.	NSG 1574	2240
41	UNIV OF KANSAS	Lamar, J. E.	LARC	Lan, C. E.	NSG 1629	2241
41	UNIV OF KANSAS	Holmes, B. J.	LARC	Lenzen, K. H.	NSG 1633	2242
41	UNIVERSITY OF LOWELL	Fralich, R. W.	LARC	McElman, J. A.	NSG 1295	2611
41	UNIV MARYLAND-COL PK	DiCarlo, D. J.	LARC	Barlow, J. B.	NSG 1570	2382
41	UNIV MICH-ANN ARBOR	Feistel, T. W.	ARC	Kroeger, R. A.	NSG 2018	2672
41	UNIV MICH-ANN ARBOR	Anderson, S. B.	ARC	Kroeger, R. A.	NSG 2113	2673
41	UNIV MICH-ANN ARBOR	South, J. C., Jr.	LARC	Adamson, T. C., Jr.	NSG 1326	2666
41	UNIV MICH-ANN ARBOR	Dunning, R. S.	LARC	Vinh, N. X.	NSG 1448	2668
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. K.	NSG 1494	2670
41	UNIV MICH-ANN ARBOR	McCarty, J. L.	LARC	Clark, S. K.	NSG 1607	2671
41	UNIV MICH-ANN ARBOR	Cooper, L. P.	LERC	Nicholls, J. A.	NSG 3148	2675
41	UNIV MICH-ANN ARBOR	Ercegovic, D. E.	LERC	Kauffman, C. W.	NSG 3165	2677
41	UNIV MO-ROLLA	Coe, C. F.	ARC	Cronin, D. L.	NCA 2-450801	2766
41	UNIV MO-ROLLA	Shockey, G. A.	ARC	Selberg, B. P.	NSG 2375	2769
41	UNIV MO-ROLLA	Hefner, J. N.	LARC	Patterson, G. K.	NSG 1452	2768
41	UNIV MO-ROLLA	Rice, E. J.	LERC	Eversman, W.	NSG 3231	2772
41	UNIV NEVADA-L VEGAS	Davis, S. S.	ARC	Fromme, J. A.	NSG 2140	2808
41	UNIV OF NEVADA-RENO	Presley, L. L.	ARC	Rose, W. C.	NSG 2291	2811
41	UNIV OF NEVADA-RENO	Johnson, D. A.	ARC	Rose, W. C.	NSG 2395	2812

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41	UNIV OF NEW MEXICO	Ludi, A. J.	HQ-U	Sanchez, R. S.	NASW 3243	2895
41	UNIV OF NOTRE DAME	Somers, D. M.	LARC	Mueller, T. J.	NSG 1419	2176
41	UNIV OF NOTRE DAME	Crouse, J. E.	LERC	Roberts, W. B.	NSG 3133	2179
41	UNIV OF SANTA CLARA	Lomax, H.	ARC	Vinokur, M.	NCC 2 16	1684
41	UNIV OF SOUTHAMPTON	Kilgore, R. A.	LARC	Goodyer, M. J.	NSG 7172	4030
41	UNIV OF SOUTHAMPTON	Boyden, R. P.	LARC	Goodyer, M. J.	NSG 7523	4031
41	UNIV OF SOUTHERN CAL	Stein, M.	LARC	Seide, P.	NSG 1401	1698
41	UNIV STHN COLORADO	Hruby, R. J.	ARC	Jenkins, R.	NSG 2048	1811
41	UNIV TENNESSEE-KNOXV	Steinle, F. W., Jr.	ARC	Tirres, C.	NCA 2-772901	3509
41	UNIV TENNESSEE-KNOXV	Steinle, F. W., Jr.	ARC	Wu, J. M.	NSG 2379	3513
41	UNIV TENNESSEE-KNOXV	Bland, S. R.	LARC	Kimble, K. R.	NSG 1224	3512
41	UNIV TENNESSEE-KNOXV	Rostafinski, W. A.	LERC	Kurosaka, M.	NSG 3267	3516
41	UNIV TENNESSEE-KNOXV	Mercier, D. R.	MSFC	Smith, V. K., III	NAS 8-33225	3504
41	U TENNESSEE-NASHVILE	Robinson, J. C.	LARC	Blackburn, C. L.	NSG 1455	3519
41	UNIV TEXAS-AUSTIN	Ballhaus, W. F.	ARC	Carey, G. F.	NSG 2338	3665
41	UNIV TEXAS-AUSTIN	Goodrich, W. D.	JSC	Bertin, J. J.	NAS 9-13680	3646
41	UNIV TEXAS-AUSTIN	Nitschke, H. A.	JSC	Crow, G. L.	NAS 9-15401	3650
41	UNIV OF TOLEDO	Chamis, C. C	LERC	Koza, K. R.	NSG 3139	3275
41	UNIV OF VIRGINIA	Kilgore, R. A.	LARC	Zapata, R. N.	NSG 1010	3852
41	UNIV OF WASHINGTON	Chapman, G. T.	ARC	Childs, M. E.	NGL 48-002-047	3932
41	UNIV OF WASHINGTON	Lee, G.	ARC	Childs, M. E.	NGR 48-002-141	3933
41	UNIV OF WASHINGTON	Creer, B. Y.	ARC	Joppa, R. G.	NSG 2176	3935
41	UNIV OF WASHINGTON	Corsiglia, V. R.	ARC	Joppa, R. G.	NSG 2260	3937
41	UNIV OF WASHINGTON	Braun, W. H.	LERC	Seebass, A. R.	NSG 3261	3943
41	UNIV WISC-MILWAUKEE	Young, W. H., Jr.	LARC	Bratanow, T.	NGR 50-007-001	4010
41	VIRGINIA POLY INST	Marvin, J. G.	ARC	Pierce, F. J.	NSG 2301	3910
41	VIRGINIA POLY INST	Erickson, W. D.	LARC	Hobeika, A. G.	NCC 1 20	3880
41	VIRGINIA POLY INST	Srokowski, A. J.	LARC	Nayfeh, A. H.	NSG 1255	3890
41	VIRGINIA POLY INST	Yates, E. C., Jr.	LARC	Mook, D. T.	NSG 1262	3891
41	VIRGINIA POLY INST	Creedon, J. F.	LARC	VanLandingham, H. F.	NSG 1354	3892
41	VIRGINIA POLY INST	Moss, J. N.	LARC	Lewis, C. H.	NSG 1520	3896
41	VIRGINIA POLY INST	Hefner, J. N.	LARC	Schetz, J. A.	NSG 1589	3903
41	VIRGINIA POLY INST	Hefner, J. N.	LARC	Saric, W. S.	NSG 1608	3906
41	VIRGINIA POLY INST	Jones, A. L.	LERC	Jakubowski, A. K.	NSG 3073	3911
41	VIRGINIA POLY INST	Ludwig, L. P.	LERC	Mitchell, L. D.	NSG 3239	3913
41	VIRGINIA POLY INST	Lehtinen, B.	LERC	Leonard, R. G.	NSG 3275	3915
41	VIRGINIA STATE UNIV	Lansing, D. L.	LARC	Agrawal, K. M.	NGL 47-014-009	3920
41	WAYNE STATE UNIV	Maestrello, L.	LARC	Chow, P. L.	NSG 1330	2694
41	WICHITA STATE UNIV	Watts, J. D.	LARC	Cook, E. L	NCC 1 21	2252
41	WICHITA STATE UNIV	Noonan, K. W.	LARC	Rodgers, E. J.	NGR 17-003-021	2253
41	WICHITA STATE UNIV	McGhee, R. J.	LARC	Wentz, W. H., Jr.	NSG 1165	2254
41	WICHITA STATE UNIV	Huber, P. W.	LARC	Zumwalt, G. W.	NSG 1575	2255
41	WICHITA STATE UNIV	Richards, T. R.	LERC	Wentz, W. H., Jr.	NSG 3277	2257
41	WRIGHT STATE UNIV	Queijo, M. J.	LARC	Wells, W. R.	NSG 1417	3294
41	YALE UNIVERSITY	Hall, R. M.	LARC	Wegener, P. P.	NSG 1612	1824
42	CAL STATE U-SACRAMEN	Priem, R. J.	LERC	Reardon, F. H.	NGR 05-058-003	1255
42	COLORADO STATE UNIV	Priem, R. J.	LERC	Mitchell, C. E.	NGR 06-002-095	1717
42	COLORADO STATE UNIV	Rawlin, V. K.	LERC	Kaufman, H. R.	NSG 3011	1725
42	GEORGIA INST OF TECH	Stevens, G. H.	LERC	Zimmer, R P.	NAS 3-20110	1981
42	GEORGIA INST OF TECH	Priem, R. J.	LERC	Korkan, K. D.	NSG 3052	2001
42	HARVARD UNIVERSITY	Hall, C. F.	ARC	McElroy, M. B.	NAS 2-10249	2443
42	HOWARD UNIVERSITY	Horner, G. C.	LARC	Jones, I. W.	NSG 1320	1886
42	MASS INST OF TECH	Domitz, S.	LERC	Kolm, H. H.	NSG 3175	2575
42	MASS INST OF TECH	Schwenk, F. C.	HQ-RT	Mar, J. W.	NSG 7396	2600
42	OLD DOMINION UNIV	Mikulas, M. M., Jr.	LARC	Prabhakaran, R.	NSG 1507	3823
42	PENN STATE U-UNIV PK	Priem, R. J.	LERC	Faeth, G. M.	NGR 39-009-077	3393
42	PENN STATE U-UNIV PK	Mahon, J. B.	HQ-ML	Unavailable	NASW 3256	3386
42	PRINCETON UNIVERSITY	Domitz, S.	LERC	O'Neill, G. K.	NSG 3176	2856

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42	PRINCETON UNIVERSITY	Lazar, J.	HQ-RP	Jahn, R. G.	NGL 31-001-005	2844
42	SOUTHERN METHODIST U	Marvin, J. G.	ARC	Simpson, R. L.	NSG 2354	3567
42	STANFORD UNIVERSITY	Park, C. G.	ARC	Bershader, D.	NCC 2 10	1340
42	STANFORD UNIVERSITY	Howe, J. T.	ARC	Rana, D. S.	NSG 2085	1372
42	STANFORD UNIVERSITY	Kant, S.	GSFC	Debra, D. B.	NAS 5-21960	1308
42	STATE UNIV NY-ALBANY	Randolph, L. P.	HQ-RT	Ratcliff, K. F.	NSG 7501	3060
42	UNIV OF DAYTON	Gentile, L. C.	LERC	Engler, N. A.	NAS 3-20392	3259
42	UNIV OF DAYTON	Gentile, L. C.	LERC	Engler, N. A.	NAS 3-21370	3261
42	UNIV OF DELAWARE	Garcia, R.	LARC	Pipes, R. B.	NSG 1409	1831
42	UNIV OF DELAWARE	McWithey, R R.	LARC	Vinson, J. R.	NSG 1488	1833
42	UNIV OF LOUISVILLE	Winder, S. W.	MSFC	Childs, D. W.	NAS 8-31233	2264
42	UNIV TEXAS-AUSTIN	Fuchs, A. J.	GSFC	Tapley, B. D.	NAS 5-25756	3642
42	VIRGINIA POLY INST	Montgomery, R. C.	LARC	Meirovitch, L.	NCC 1 4	3877
43	BUCKNELL UNIVERSITY	Gluyas, R. E.	LERC	Snyder, W. J.	NSG 3136	3340
43	CASE WESTERN RESERVE	Dunning, J. W., Jr.	LERC	Angus, J. C.	NSG 3074	3158
43	CASE WESTERN RESERVE	Fordyce, J. S.	LERC	Liu, C. C.	NSG 3203	3167
43	CLEVELAND STATE UNIV	Ashbrook, R. L.	LERC	Yeh, H. C.	NSG 3155	3193
43	FLORIDA INST OF TECH	Howard, F. S.	KSC	Thomas, J. J.	NAS10-9461	1914
43	RICE UNIVERSITY	Howard, J. K.	JSC	Davis, S. H.	NAS 9-15630	3549
43	STANFORD UNIVERSITY	Poppa, H. R.	ARC	Boudart, M.	NCA 2-745908	1334
43	STATE U NY-STONY BRK	Cochran, T. H.	LERC	Berlad, A. L.	NSG 3051	3077
43	UNIV CALIF-SAN DIEGO	Haggard, J. B.	LERC	Williams, F. A	NSG 3047	1603
43	UNIV OF FLORIDA	Sheibley, D. W.	LERC	Walker, R. D., Jr.	NGR 10-005-182	1940
43	UNIV ILLINOIS-URBANA	Cochran, T. H.	LERC	Strehlow, R. A.	NSG 3043	2125
43	UNIV OF PITTSBURGH	Kostiuk, T.	GSFC	Falk, J.	NAS 5-22892	3432
43	UNIV OF SHEFFIELD	Lyons, V. J.	LERC	Chigier, N. A.	NSG 7517	4029
44	NO CAR A&T STATE U	Rhodes, M. D.	LARC	Sharma, A. V.	NSG 1631	3114
44	RENSSELAER POLY-NY	Rogers, J. L.	LARC	Feeser, L. J.	NSG 1636	3040
44	UNIV ILLINOIS-CHICGO	Costes, N. C.	MSFC	Silver, M. L.	NAS 8-32993	2108
45	ALABAMA A&M UNIV	Teasdale, W. E.	JSC	Ingels, F. M.	NAS 9-14770	1001
45	ALABAMA A&M UNIV	Bilbro, J. W.	MSFC	Huth, G. C.	NSG 8037	1004
45	ALABAMA A&M UNIV	Gould, J. M.	MSFC	Shiva, S. G.	NSG 8057	1008
45	ATHENS STATE COLLEGE	Woodis, K. W.	MSFC	Workman, G. L.	NAS 8-32834	1016
45	AUBURN UNIV-AUBURN	Matheney, J. L.	MSFC	Tung, C.	NAS 8-31572	1018
45	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Kerns, D. V.	NAS 8-33092	1022
45	AUBURN UNIV-AUBURN	Wagnon, F. W.	MSFC	Irwin, J. D.	NCA 8-133	1025
45	CASE WESTERN RESERVE	Stevens, G. H.	LERC	Pao, Y. H.	NSG 3085	3159
45	CITY COLLEGE OF N Y	Kahle, D. R.	GSFC	Schilling, D. L.	NSG 5013	2913
45	CITY COLLEGE OF N Y	Land, C. K.	JSC	Schilling, D. L.	NAS 9-13940	2907
45	CLARKSON COL OF TECH	Rotnem, J. O.	LERC	Arozullah, M.	NSG 3191	2917
45	CLEVELAND STATE UNIV	Nieberding, W. C.	LERC	Maisel, J. F.	NSG 3222	3194
45	COLORADO STATE UNIV	Taylor, R. E.	GSFC	Parkenson, B. W.	NSG 5352	1737
45	CORNELL UNIVERSITY	McCreight, C. R.	ARC	Lee, C. A	NSG 2389	2974
45	CORNELL UNIVERSITY	Hutchby, J. A.	LARC	Frey, J.	NSG 1642	2968
45	CORNELL UNIVERSITY	Conway, E. J.	LARC	Ballantyne, J. M.	NSG 1651	2969
45	DUKE UNIVERSITY	Rodriquez, G. E.	GSFC	Wilson, T. G.	NAS 5-25351	3104
45	DUKE UNIVERSITY	Rodriguez, G E.	GSFC	Wilson, T. G.	NGL 34-001-001	3105
45	DUKE UNIVERSITY	Gruber, R. P.	LERC	Wilson, T. G.	NSG 3157	3107
45	GEORGE WASHINGTON U	Rende, J. V.	GSFC	Helgert, H. J.	NAS 5-24431	1845
45	GEORGE WASHINGTON U	LeVine, D. M.	GSFC	Lang, R H.	NSG 5288	1873
45	GEORGE WASHINGTON U	Croswell, W. F	LARC	Liebowitz, H	NGR 09-010-096	1856
45	GEORGE WASHINGTON U	Croswell, W. F.	LARC	Liebowitz, H.	NSG 1110	1858
45	GEORGIA INST OF TECH	King, J. L.	GSFC	Schuchardt, J. M.	NAS 5-23710	1982
45	GEORGIA INST OF TECH	King, J. L.	GSFC	Forsythe, R. E.	NSG 5012	2007
45	GEORGIA INST OF TECH	O'Neal, R. L.	LARC	Blue, M. D.	NAS 1-14654	1977
45	GEORGIA INST OF TECH	O'Neal, R. L.	LARC	Gaylord, T. K.	NAS 1-15370	1980
45	GEORGIA INST OF TECH	Hein, G. F.	LERC	Zimmer, R. P	DEN 3 73	1975
45	GEORGIA INST OF TECH	Inman, R. A.	MSFC	Kozakoff, D. J.	NAS 8-33605	1989

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45	HAMPTON INSTITUTE	Jobson, D. J.	LARC	Trehan, A. K.	NSG 1294	3784
45	HAMPTON INSTITUTE	Katzberg, S. J.	LARC	Trehan, A. K.	NSG 1552	3787
45	HOWARD UNIVERSITY	Taylor, R. E.	GSFC	Sennott, J. W.	NSG 5336	1894
45	HOWARD UNIVERSITY	Savely, R. T.	JSC	Choudhury, A. K.	NSG 9010	1898
45	HOWARD UNIVERSITY	Whiting, E. E.	HQ-RT	Choudhury, A. K.	NSG 7624	1897
45	JOHNS HOPKINS UNIV	Bavuso, S. J.	LARC	Masson, G. M.	NSG 1442	2316
45	MASS INST OF TECH	Shiue, J. C.	GSFC	Kong, J. A.	NAS 5-24139	2499
45	MASS INST OF TECH	Ippolitto, L.	GSFC	Staelin, D. H.	NAS 5-25091	2502
45	MASS INST OF TECH	Schaefer, D. H.	GSFC	McClellan, J. H.	NSG 5157	2585
45	MASS INST OF TECH	Armstrong, E. S.	LARC	Stein, G.	NSG 1312	2545
45	MASS INST OF TECH	Armstrong, E. S.	LARC	Stein, G.	NSG 1553	2553
45	MISSISSIPPI STATE U	Wallace, G. R.	MSFC	Ingels, F. M.	NAS 8-31373	2734
45	MISSISSIPPI STATE U	Hollis, B. R., Jr.	MSFC	Wade, T. E.	NAS 8-33448	2737
45	MISSISSIPPI STATE U	Edge, T. M.	MSFC	Causey, W. H., Jr.	NAS 8-33450	2738
45	MORGAN STATE UNIV	Chapman, J. W.	GSFC	Jerkins, K.	NAS 5-25533	2330
45	NO CAR A&T STATE U	Henry, V.	GSFC	Williams, L. J.	NAS 5-24101	3110
45	NO CAR A&T STATE U	Hutchby, J. A.	LARC	Stefanakos, E.	NSG 1390	3112
45	NO CAROLINA STATE U	Croswell, W. F.	LARC	Kauffman, J. F.	NGR 34-002-188	3124
45	NO CAROLINA STATE U	Benz, H. F.	LARC	Snyder, W. E.	NSG 1353	3129
45	NO CAROLINA STATE U	Hatfield, J. J.	LARC	Rajala, S. A.	NSG 1355	3130
45	NO CAROLINA STATE U	Croswell, W. F.	LARC	Kauffman, J. F.	NSG 1588	3136
45	NO CAROLINA STATE U	Godlewski, M. P.	LERC	Hauser, J. R.	NGR 34-002-195	3125
45	OHIO STATE UNIV	Billingham, J.	ARC	Kraus, J. D.	NSG 2162	3225
45	OHIO STATE UNIV	Hirschmann, E.	GSFC	Hodge, D. B.	NAS 5-22575	3211
45	OHIO STATE UNIV	Gilreath, M. C.	LARC	Burnside, W. D.	NSG 1498	3221
45	OHIO STATE UNIV	Gilreath, M. C.	LARC	Peters, L.	NSG 1613	3222
45	OHIO STATE UNIV	Baumbilk, R. J.	LERC	Collins, S. A., Jr.	NSG 3302	3234
45	OHIO UNIVERSITY	Downing, D. R.	LARC	McFarland, R. H.	NGR 36-009-017	3242
45	OLD DOMINION UNIV	Tripp, J. S.	LARC	Tcheng, P. L.	NSG 1079	3796
45	OLD DOMINION UNIV	Hellbaum, R. F.	LARC	Rogerson, A. C.	NSG 1177	3800
45	OLD DOMINION UNIV	Campbell, T. G.	LARC	Becher, J.	NSG 1331	3806
45	OLD DOMINION UNIV	Gainer, P. A.	LARC	Varanasi, M. R	NSG 1379	3810
45	OLD DOMINION UNIV	Gilreath, M. C.	LARC	Mielke, R. R.	NSG 1655	3838
45	PENN STATE U-UNIV PK	Bailey, J. V.	JSC	Mason, C. A.	NAS 9-15798	3385
45	PURDUE UNIVERSITY	Gilbert, L. J.	LERC	Krause, P. C.	NSG 3237	2168
45	SAN JOSE STATE UNIV	Webbon, B. W.	ARC	Kurzweil, J.	NCA 2-675904	1276
45	SAVANNAH STATE COL	Jayroe, R. R., Jr.	MSFC	Wenner, D. B.	NSG 8048	2018
45	SO UNIV-BATON ROUGE	Echelkamp, R. E.	JSC	Grewal, G. S.	NSG 9030	2285
45	SO UNIV-BATON ROUGE	White, J. B.	MSFC	Montgomery, V. T.	NSG 8053	2283
45	STANFORD UNIVERSITY	Leonard, A.	ARC	Buneman, O.	NCA 2-745906	1332
45	STANFORD UNIVERSITY	Pontious, C. E.	HQ-RE	McCarthy, J.	NASW 2916	1322
45	STANFORD UNIVERSITY	Fitzmaurice, M. W.	HQ-RE	Harris, S. E.	NGL 05-020-103	1348
45	SYRACUSE UNIVERSITY	Benz, H. F.	LARC	Kowel, S. T.	NSG 1602	3092
45	SYRACUSE UNIVERSITY	Segura, R.	LARC	Kowel, S. T.	NSG 1611	3093
45	TEXAS A&M UNIVERSITY	Farris, G. W.	JSC	Jean, B. R.	NAS 9-15311	3583
45	TEXAS A&M UNIVERSITY	Lytle, C. D.	LARC	Painter, J. H.	NSG 1374	3594
45	TEXAS A&M UNIVERSITY	Hearn, C. P.	LARC	Painter, J. H.	NSG 1639	3596
45	TEXAS TECH UNIV	Day, J. L.	JSC	Portnoy, W. M.	NAS 9-11162	3607
45	TUSKEGEE INSTITUTE	Young, L. E.	MSFC	Doreswamy, C. V.	NSG 8038	1035
45	UNIV ALA-UNIVERSITY	Williams, D. E.	MSFC	Raburn, W. D.	NAS 8-33430	1059
45	UNIV OF CINCINNATI	Sundberg, G. R.	LERC	Henderson, H. T.	NSG 3022	3250
45	UNIV OF CINCINNATI	Riley, T. J.	LERC	Nevin, J. H.	NSG 3024	3251
45	UNIV OF FLORIDA	Jafferis, W.	KSC	Heasley, J. N.	NAS10-9378	1932
45	UNIV OF FLORIDA	Walker, G. H.	LARC	Li, S. S.	NSG 1425	1941
45	UNIV OF FLORIDA	Godlewski, M. P.	LERC	Lindholm, F. A.	NSG 3018	1946
45	UNIV HOUSTON-HOUSTON	Horner, G. C.	LARC	Denman, E. D.	NSG 1603	3624
45	UNIV ILLINOIS-URBANA	Schaefer, D. H.	GSFC	Slotnick, D. L.	NAS 5-24275	2113
45	UNIV ILLINOIS-URBANA	Keating, T., Jr.	GSFC	Mittra, R.	NAS 5-25062	2114

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45	UNIV ILLINOIS-URBANA	Abshire, J. B.	GSFC	Ghia, K. N.	NSG 5049	2128
45	UNIV OF KANSAS	Szalai, K. J.	DFRC	Kelley, G. L.	NSG 4026	2249
45	UNIV OF KANSAS	Rango, A.	GSFC	Ulaby, F. T.	NAS 5-23777	2228
45	UNIV OF KANSAS	Croswell, W. F.	LARC	Moore, R. K.	NSG 1554	2239
45	UNIV MARYLAND-COL PK	Peake, H. J.	GSFC	Taylor, L. S.	NAS 5-25437	2342
45	UNIV MARYLAND-COL PK	Benz, H. F.	LARC	Lin, H. C.	NSG 1468	2380
45	UNIV MARYLAND-COL PK	Schy, A. A.	LARC	Wang, S. H.	NSG 1558	2381
45	UNIV MICH-ANN ARBOR	Migneault, G. E.	LARC	Meyer, J. F.	NSG 1306	2665
45	UNIV MO-COLUMBIA	Eggleston, T. W.	JSC	Tranter, W. H.	NAS 9-15477	2758
45	UNIV MO-ROLLA	Dawson, C. T.	JSC	Tranter, W. H.	NAS 9-14848	2765
45	UNIV OF NOTRE DAME	Seldner, K.	LERC	Sain, M. K.	NSG 3048	2178
45	UNIV OF NOTRE DAME	Burkhart, J. A.	LERC	Gabriel, G. J.	NSG 3182	2180
45	UNIV OKLAHOMA-NORMAN	Gross, C.	LARC	Kahng, S. K.	NSG 1481	3314
45	UNIV OF PENNSYLVANIA	Shiue, J. C.	GSFC	Kritikos, H. N.	NAS 5-25136	3424
45	UNIV OF PITTSBURGH	McBrien, E. F.	LERC	Hamilton, H. B.	NSG 3163	3443
45	UNIV SO CAROLINA-COL	Lowrey, D. O.	MSFC	Fellers, R. G.	NAS 8-28660	3472
45	UNIV OF SOUTHERN CAL	Secunde, R. R.	LERC	Campbell, P. E.	NSG 3243	1701
45	UNIV TENNESSEE-KNOXV	Craig, G. D.	MSFC	Gonzalez, R. C.	NAS 8-29271	3494
45	UNIV TENNESSEE-KNOXV	Howell, J. T., Jr.	MSFC	Hung, J. C.	NAS 8-33604	3507
45	UNIV TEXAS-AUSTIN	Hirschmann, E.	GSFC	Vogel, W.	NAS 5-22576	3639
45	UNIV TEXAS-AUSTIN	Moeckel, W. E.	LERC	Powers, E. J.	NSG 3089	3667
45	UNIV OF TOLEDO	Merrill, W. C.	LERC	Leininger, G. G.	NSG 3084	3272
45	UNIV OF TOLEDO	Lehtinen, B.	LERC	Leininger, G. G.	NSG 3171	3277
45	UNIV OF TOLEDO	Gruber, R. P.	LERC	Stuart, T. A.	NSG 3281	3279
45	UNIV OF VIRGINIA	Kahle, D. R.	GSFC	Wilson, S. G.	NAS 5-25634	3846
45	UNIV OF VIRGINIA	Ashworth, B. R.	LARC	Parrish, E. A.	NSG 1599	3859
45	VIRGINIA POLY INST	Hirschmann, E.	GSFC	Bostian, C. W.	NAS 5-22577	3871
45	VIRGINIA POLY INST	Montgomery, R. C.	LARC	VanLar ingham, H. F.	NSG 1527	3899
45	VIRGINIA POLY INST	Watson, W. R.	LARC	Nayfeh, A. H.	NSG 1573	3902
45	VIRGINIA POLY INST	Maslowski, E. A.	LERC	Demerdash, N. A.	DEN 3 65	3869
45	VIRGINIA POLY INST	Kolecki, J. C.	LERC	Lee, F. C.	NSG 3274	3914
45	WALLA WALLA COLLEGE	Schmidt, R. L.	GSFC	Heisler, R.	NAS 5-25063	3960
45	WORCESTER POLY INST	Godlewski, M. P.	LERC	Lanyon, H. P.	NSG 3137	2622
45	YALE UNIVERSITY	Pritchard, J. A.	GSFC	Barker, R. C.	NGL 07-004-005	1822
45	YESHIVA UNIVERSITY	Godlewski, M. P.	LERC	Pollak, F.	NSG 3123	3102
46	ALABAMA A&M UNIV	Humphries, W. R.	MSFC	Saha, H.	NSG 8041	1005
46	AUBURN UNIV-AUBURN	Shackleford, B. W., Jr.	MSFC	Sforzini, R. H.	NCA 8-132	1024
46	CALIF INST OF TECH	Gross, L. A.	MSFC	Acosta, A. J.	NAS 8-29313	1179
46	CALIF INST OF TECH	Gross, L. A.	MSFC	Costa, A. J.	NAS 8-33108	1180
46	CAL STATE U-L ANGLES	Pohly, J. G.	HQ-LU	Manvi, R.	NASW 3257	1245
46	CAL STATE U-L ANGLES	Pohly, J. G.	HQ-LU	Maniv, R.	NSG 7229	1247
46	CAL STATE U-L ANGLES	Pohly, J. G.	HQ-LU	Gold, P. I.	NSG 7263	1248
46	CAL STATE U-NRTHRDGE	Coe, H. H.	LERC	Nypan, L. J.	NSG 3065	1250
46	CARNEGIE-MELLON UNIV	Srawley, J. E.	LERC	Swedlow, J. L.	NSG 3172	3343
46	CARNEGIE-MELLON UNIV	Cunningham, R. E.	LERC	Hughes, W. F.	NSG 3202	3344
46	CASE WESTERN RESERVE	Ollendorf, S.	GSFC	Kamotani, Y.	NAS 5-24144	3145
46	CASE WESTERN RESERVE	Labus, T. L.	LERC	Ostrach, S.	NAS 3-21046	3140
46	CASE WESTERN RESERVE	Anderson, D. N.	LERC	T'len, J. S.	NSG 3230	3172
46	CASE WESTERN RESERVE	Brown, W. F., Jr.	LERC	Mendelson, A.	NSG 3251	3175
46	CLEMSON UNIV-CLEMSON	Reveley, W. F.	JSC	Gaddis, J. L.	NAS 9-13669	3466
46	CLEMSON UNIV-CLEMSON	Poe, C. C., Jr.	LARC	Goree, J. G.	NSG 1297	3467
46	CLEVELAND STATE UNIV	Townsend, D. P.	LERC	Kasuba, R.	NAS 3-18547	3189
46	CLEVELAND STATE UNIV	Simoneau, R. J.	LERC	Gorla, R. S.	NCC 3 3	3190
46	CLEVELAND STATE UNIV	Lorenzo, C. F.	LERC	Larson, V. H.	NSG 3257	3196
46	COLLEGE OF WM & MARY	Tanner, J. A.	LARC	Andersen, C. M.	NAS 1-15965	3759
46	COLORADO STATE UNIV	Kerslake, W. R.	LERC	Wilbur, P. J.	NGR 06-002-112	1719
46	COLORADO STATE UNIV	Fichtl, G. H.	MSFC	Edwards, H. W.	NAS 8-31673	1715
46	GEORGIA INST OF TECH	Jones, W. R., Jr.	LERC	Winer, W. O.	NSG 3106	2002

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46	HOWARD UNIVERSITY	Hayes, J. M.	GSFC	Bords, G.	NAS 5-24422	1878
46	IOWA STATE UNIV	Presley, L. L.	ARC	Cook, W. J.	NCA 2-340901	2185
46	IOWA STATE UNIV	Tanner, J. A.	LARC	Baumgarten, J. R.	NSG 1605	2195
46	ISRAEL INST OF TECH	Ludwig, L. P.	LERC	Etsion, I.	NSG 7317	4032
46	MASS INST OF TECH	Cassidy, J. F.	LERC	Heywood, J. B.	NSG 3245	2580
46	MISSISSIPPI STATE U	Broussard, P. H.	MSFC	Jones, E. W.	NCA 8-131	2740
46	NO CAR A&T STATE U	Stuckey, J. M.	MSFC	Sharma, A. V.	NSG 8045	3116
46	NORTHWESTERN UNIV	Ludwig, L. P.	LERC	Burton, R. A.	NAS 3-21261	2063
46	NORTHWESTERN UNIV	Coy, J. J.	LERC	Cheng, H. S.	NSG 3143	2071
46	NORTHWESTERN UNIV	Wedeven, L. D.	LERC	Cheng, H. S.	NSG 3149	2072
46	OLD DOMINION UNIV	Hanks, B. R.	LARC	Ibrahim, S. R.	NSG 1459	3814
46	OLD DOMINION UNIV	Card, M. F.	LARC	Ibrahim, S. R.	NSG 1649	3836
46	PENN STATE U-UNIV PK	Marek, C. J.	LERC	Faeth, G. M.	NSG 3306	3409
46	PRINCETON UNIVERSITY	Cassidy, J. F.	LERC	Sirignano, W. A.	NSG 3178	2857
46	PURDUE UNIVERSITY	Haggard, J. B.	LERC	Shifstad, J. G.	NSG 3258	2169
46	RICE UNIVERSITY	Trevino, L. A.	JSC	Wierm, F. A.	NAS 9-15274	3548
46	SAN JOSE STATE UNIV	DuVal, R. W.	ARC	Wang, J. C.	NCA 2-675902	1274
46	SAN JOSE STATE UNIV	Mansfield, J. A	ARC	Holmstrom, F.	NSG 2307	1297
46	SO UNIV-BATON ROUGE	Williamson, J. G.	MSFC	Tabony, J.	NSG 8025	2282
46	SO UNIV-BATON ROUGE	Owen, R. B.	MSFC	Scott, R. L., Jr.	NSG 8056	2284
46	STANFORD UNIVERSITY	Goldstein, H. E.	ARC	Bates, C. W.	NGR 05-020-710	1366
46	STANFORD UNIVERSITY	Fewell, L. L.	ARC	Baytes, C. W.	NSG 2346	1391
46	STANFORD UNIVERSITY	Gaugler, R. E.	LERC	Johnston, J. P.	NSG 3124	1398
46	TENNESSEE TECH U	Priem, R. J.	LERC	Ventrice, M. B.	NGR 43-003-015	3491
46	TRENTON STATE COL	Marek, C. J.	LERC	Feng, C. C.	NSG 3180	2880
46	TUSKEGEE INSTITUTE	French, B. O.	JSC	Sellers, J. P., Jr.	NAS 9-13844	1029
46	TUSKEGEE INSTITUTE	Brontley, L. W.	MSFC	Sellers, J. P., Jr.	NSG 8054	1036
46	UNIV ALA-HUNTSVILLE	Decher, R.	MSFC	Hendricks, J. B.	NAS 8-29316	1041
46	UNIV CALIF-BERKELEY	Marek, C. J.	LERC	Daily, J. W.	NSG 3028	1462
46	UNIV CALIF-DAVIS	Pollack, J. B.	ARC	White, B. R.	NCA 2-180903	1488
46	UNIV CALIF-L ANGELES	Spera, D. A.	LERC	Friedman, P. P.	NSG 3082	1532
46	UNIV CALIF-L ANGELES	Burkhart, J. A.	LERC	Frederking, T. H.	NSG 3153	1534
46	UNIV OF CINCINNATI	Monteith, J. H.	LARC	Brown, D. L.	NSG 1486	3249
46	UNIV OF CINCINNATI	Coy, J. J.	LERC	Huston, R. L.	NSG 3188	3255
46	UNIV OF CINCINNATI	Chubb, D. L.	LERC	Tabakoff, W.	NSG 3218	3256
46	UNIV OF CONNECTICUT	Goldman, L. J.	LERC	Langston, L. S.	NSG 3238	1816
46	UNIV OF DELAWARE	Deaton, J. W.	LARC	Pipes, R. B.	NSG 1304	1830
46	UNIV OF DENVER	Luczkowski, S. M.	JSC	Venditti, F. P.	NAS 9-15469	1800
46	UNIV ILLINOIS-URBANA	Scribbe, H. W.	LERC	Conry, T. F.	NSG 3098	2126
46	UNIV OF KENTUCKY	Cochran, T. H.	LERC	Altenkirch, R. A.	NSG 3114	2263
46	UNIV OF LOUISVILLE	Fleming, D. P.	LERC	Childs, D. W.	NSG 3200	2267
46	UNIV OF MIAMI	Bland, R. A.	KSC	Lee, S. S.	NAS10-9410	1957
46	UNIV MICH-ANN ARBOR	Beam, L. W.	LERC	Bolt, J. A.	NSG 3161	2676
46	UNIV MO-COLUMBIA	Webbon, B. W.	ARC	Miles, J. B.	NCA 2-450802	2760
46	UNIV MO-ROLLA	Wedeven, L. D.	LERC	Medrow, R. A.	NSG 3113	2770
46	UNIV NEBRASKA-LINCLN	Tanner, J. A.	LARC	Baumgarten, J. R.	NSG 1506	2799
46	UNIV OF NEW ORLEANS	Humphries, W. R.	MSFC	Bankston, J. D., Jr.	NAS 8-33479	2289
46	UNIV OF SOUTHERN CAL	Diehl, L. A.	LERC	Gerstein, M.	NSG 3248	1702
46	UNIV TENNESSEE-KNOXV	Graham, R. W.	LERC	Reid, R. L.	NSG 3173	3514
46	UNIV TENNESSEE-KNOXV	Sloan, J.	MSFC	Frost, W.	NAS 8-29584	3495
46	UNIV TENNESSEE-KNOXV	Guttman, C. H.	MSFC	Hung, J. C.	NAS 8-33065	3502
46	UNIV OF TOLEDO	Cunningham, R. E.	LERC	Keith, T. G., Jr.	NSG 3156	3276
46	UNIV OF VIRGINIA	Kascak, A. F.	LERC	Barrett, L. E.	NSG 3177	3862
46	UNIV OF VIRGINIA	Winter, S. W.	MSFC	Gunter, E. J.	NAS 8-31951	3847
46	UNIV OF WASHINGTON	Valentine, H. H.	LERC	Martini, W. R.	NSG 3152	3941
46	UNIV OF WASHINGTON	Valentine, H. H.	LERC	Martini, W. R.	NSG 3194	3942
46	VIRGINIA POLY INST	Hoffman, E. L.	LARC	Stinchcomb, W. W.	NSG 1254	3889
46	VIRGINIA POLY INST	Miserentino, R.	LARC	Hallauer, W. L., Jr.	NSG 1526	3898

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47	ALABAMA A&M UNIV	Williams, J. R.	MSFC	Lal, R. B.	NAS 8-32945	1000
47	ARIZONA STATE UNIV	Reeves, F. A.	MSFC	Wagner, J. B.	NAS 8-32937	1074
47	BROWN UNIVERSITY	Herbell, T. P.	LERC	Richman, M. H.	NSG 3118	3458
47	CARNEGIE-MELLON UNIV	Witzke, W. R.	LERC	Bhat, G. K.	NAS 3-20370	3341
47	CASE WESTERN RESERVE	Glasgow, T. K.	LERC	Ebert, L. J	NGL 36-003-094	3149
47	CASE WESTERN RESERVE	Fortini, A.	LERC	Dybbs, A.	NSG 3040	3156
47	CASE WESTERN RESERVE	Scheuermann, C. M.	LERC	Maier, R. D.	NSG 3246	3174
47	CASE WESTERN RESERVE	Gedwill, M. A.	LERC	Maier, R. D.	NSG 3252	3176
47	CASE WESTERN RESERVE	Tower, L. K.	LERC	Kamotani, Y.	NSG 3268	3177
47	CASE WESTERN RESERVE	Sovey, J. S.	LERC	Geil, K. H.	NSG 3289	3184
47	CASE WESTERN RESERVE	Smialek, J. L.	LERC	Cooper, A. R.	NSG 3291	3185
47	CASE WESTERN RESERVE	Hirschberg, M. H.	LERC	Powell, N. L.	NSG 7035	3187
47	CLEVELAND STATE UNIV	Herbell, T. P.	LERC	Yeh, H. C.	NSG 3259	3197
47	COLUMBIA UNIVERSITY	Glasgow, T. K.	LERC	Tien, J. K.	NSG 3050	2936
47	CORNELL UNIVERSITY	Nelson, H. G.	ARC	Johnson, H. H.	NSG 2399	2975
47	CORNELL UNIVERSITY	Aron, P. R.	LERC	Ruoff, A. L.	NGR 33-010-189	2966
47	CORNELL UNIVERSITY	Lundholm, J. G., Jr.	HQ-RS	Ruoff, A. L.	NSG 7488	2988
47	DARTMOUTH COLLEGE	Bill, R. C.	LERC	Kennedy, F. E., Jr.	NSG 3253	2814
47	DREXEL UNIVERSITY	Poe, C. C., Jr.	LARC	Awerbuch, J.	NSG 1606	3352
47	DREXEL UNIVERSITY	Grimes, H. H.	LERC	Koczak, M. J.	NSG 3128	3355
47	GEORGE WASHINGTON U	Swann, R. T.	LARC	Liebowitz, H.	NSG 1155	1859
47	GEORGE WASHINGTON U	Roderick, G. L.	LARC	Liebowitz, H	NSG 1289	1863
47	GEORGE WASHINGTON U	Crews, J. H., Jr.	LARC	Liebowitz, H	NSG 1449	1864
47	GEORGE WASHINGTON U	O'Brien, T. K.	LARC	Yang, J. N.	NSG 1604	1870
47	GEORGIA INST OF TECH	Johnston, M. H.	MSFC	Brown, J. L.	NAS 8-33438	1988
47	KENT STATE UNIV-KENT	Wintucky, E. G	LERC	Johnson, D. L	NSG 3159	3201
47	LEHIGH UNIVERSITY	Sovey, J. S.	LERC	Micale, F. J	NSG 3193	3371
47	MASS INST OF TECH	Kostiuk, T.	GSFC	Spears, D. L.	NAS 5-25717	2504
47	MASS INST OF TECH	Harris, J. W.	JSC	Uhlmann, D. R.	NGR 22-009-646	2535
47	MASS INST OF TECH	Byvik, C. E.	LARC	Gatos, H. C	NSG 1190	2544
47	MASS INST OF TECH	Price, H. L.	LARC	McGarry, F. J.	NSG 1504	2551
47	MASS INST OF TECH	Weinberg, I.	LERC	Gatos, H. C	NSG 3017	2569
47	MASS INST OF TECH	Scheuermann, C. M.	LERC	Flemings, M. C	NSG 3046	2571
47	MASS INST OF TECH	Vary, A	LERC	Williams, J. H., Jr	NSG 3210	2578
47	MASS INST OF TECH	Davidson, M. C.	MSFC	Gatos, H. C.	NAS 8-30537	2507
47	MASS INST OF TECH	Reeves, F. A.	MSFC	Uhlmann, D. R	NAS 8-31350	2509
47	MASS INST OF TECH	Reeves, F. A.	MSFC	Uhlmann, D. R	NAS 8-31552	2510
47	MASS INST OF TECH	VonTiesenhausen, G. F.	MSFC	Miller, R. H.	NAS 8-32925	2511
47	MASS INST OF TECH	Vitale, J. A.	HQ-ET	Gatos, H. C.	NSG 7331	2597
47	MICHIGAN TECH UNIV	Barrett, C. A.	LERC	Heckel, R. W	NSG 3215	2628
47	NO CAR A&T STATE U	Rhodes, M. D.	LARC	Sharma, A. V.	NSG 1296	3111
47	NO CAR A&T STATE U	Buckley, J. D.	LARC	Botros, B. M.	NSG 1516	3113
47	NO CAROLINA STATE U	Long, E. R., Jr.	LARC	Memory, J. D.	NSG 1463	3132
47	NORTHWESTERN UNIV	Ludwig, L. P.	LERC	Burton, R. A	NSG 3039	2070
47	OHIO STATE UNIV	Gray, H. R.	LERC	Beck, F. H.	NGL 36-008-051	3216
47	OHIO STATE UNIV	Bill, R. C.	LERC	Black, J. T	NSG 3164	3230
47	OHIO STATE UNIV	Vary, A.	LERC	Fu, L. S.	NSG 3269	3233
47	OLD DOMINION UNIV	Lisagor, W. B.	LARC	Cupschalk, S. G.	NSG 1521	3826
47	PENN STATE U-UNIV PK	Fripp, A. L.	LARC	White, W. B	NSG 1387	3396
47	PENN STATE U-UNIV PK	Sanders, W. A.	LERC	Bradt, R. C	NSG 3016	3400
47	RENSSELAER POLY-NY	Swann, R. T.	LARC	Ansell, G. S.	NSG 1510	3037
47	RENSSELAER POLY-NY	Davidson, M. C.	MSFC	Wiedmann, H.	NAS 8-26146	3027
47	RENSSELAER POLY-NY	Reeves, F. A.	MSFC	Glicksman, M. E.	NAS 8-32425	3028
47	RENSSELAER POLY-NY	Williams, J. R.	MSFC	Wiedemeier, H	NAS 8-32936	3031
47	RENSSELAER POLY-NY	Gilstad, D. A.	HQ-RW	Wiberly, S. E	NGL 33-018-003	3034
47	RICE UNIVERSITY	Oran, W. A.	MSFC	Margrave, J	NAS 8-33199	3546
47	SAN JOSE STATE UNIV	Riccitiello, S. R.	ARC	Anderson, R. N.	NCC 2 3	1282
47	SAN JOSE STATE UNIV	Fish, R. H.	ARC	Anderson, R. N.	NSG 2332	1299

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47	STANFORD UNIVERSITY	Whiting, E. E.	ARC	Spicer, W. E.	NCA 2-745803	1327
47	STANFORD UNIVERSITY	Poppa, H. R.	ARC	Heineman, K. H.	NCA 2-745901	1328
47	STANFORD UNIVERSITY	Rubesin, M. W.	ARC	Reynolds, W. C.	NGR 05-020-622	1361
47	STANFORD UNIVERSITY	Stallcop, J. R.	ARC	Pound, G. M.	NSG 2251	1382
47	SYRACUSE UNIVERSITY	Hayes, P. J.	LARC	Schroder, K.	NSG 1654	3094
47	TEXAS A&M UNIVERSITY	Strouhal, G.	JSC	Norton, D.	NAS 9-15962	3588
47	TUSKEGEE INSTITUTE	Titran, R. H.	LERC	Ramirez, R. P.	NSG 3154	1033
47	UNIV ALA-HUNTSVILLE	Gause, R. L.	MSFC	Castle, J. G.	NAS 8-33377	1052
47	UNIV ALA-HUNTSVILLE	Aldrich, B. R.	MSFC	Hendricks, J. B.	NAS 8-33542	1055
47	UNIV ALA-HUNTSVILLE	Lacy, L. L.	MSFC	Davis, J. H.	NAS 8-33548	1056
47	UNIV CALIF-BERKELEY	Campbell, C. E.	GSFC	Price, P. B.	NAS 5-25453	1418
47	UNIV CALIF-L ANGELES	Goldstein, H. E.	ARC	MacKenzie, J. D.	NCA 2-390803	1511
47	UNIV CALIF-L ANGELES	Goldstein, H. E.	ARC	Ono, K.	NCA 2-390901	1512
47	UNIV CALIF-L ANGELES	Riccitiello, S. R.	ARC	MacKenzie, J. D.	NCC 2 7	1514
47	UNIV CALIF-L ANGELES	Williams, J. R.	MSFC	Bunshah, R. F.	NAS 8-33115	1508
47	UNIV CALIF-SAN DIEGO	Flood, D. J.	LERC	Oesterreicher, H.	NSG 3034	1602
47	UNIV CALIF-S BARBARA	Nelson, H. G.	ARC	Shanabarger, M. R.	NSG 2222	1649
47	UNIV OF CENTRAL FLA	Bianca, C.	MSFC	Carroll, W. E.	NAS 8-32835	1922
47	UNIV OF CINCINNATI	Miner, R. V., Jr.	LERC	Antolovich, S. D.	NSG 3147	3254
47	UNIV OF CINCINNATI	Hirschberg, M. H.	LERC	Antolovich, S. D.	NSG 3263	3257
47	UNIV OF DAYTON	Stevenson, S. M.	LERC	Martino, J. P.	NAS 3-21355	3260
47	UNIV OF DELAWARE	Vernon, R. W.	LERC	Birchenall, C. E.	NSG 3184	1835
47	UNIV OF FLORIDA	Dutta, S.	LERC	Hench, L. L.	NSG 3254	1947
47	UNIV HOUSTON-HOUSTON	Uiegas, J. R.	ARC	Hussain, A. K.	NSG 2337	3625
47	UNIV OF IOWA	Rummler, D. R.	LARC	Wu, H. C	NSG 1499	2213
47	UNIV OF KANSAS	Howell, W. E.	LARC	Reese, C. D.	NSG 1281	2236
47	UNIV OF MIAMI	Lis gor, W. B.	LARC	Poteat, L. E.	NSG 1283	1960
47	UNIV MICH-ANN ARBOR	Jones, J. L.	LARC	Felbeck, D. K.	NAS 1-15333	2630
47	UNIV MICH-ANN ARBOR	Richter, W. B.	LARC	Felbeck, D. K.	NGR 23-005-528	2663
47	UNIV MICH-ANN ARBOR	Lauver, R. W.	LERC	Yeh, G. S.	NSG 3192	7678
47	UNIV MO-ROLLA	Geller, G.	MSFC	Summers, D. A.	NSG 8055	2775
47	UNIV OF NEW ORLEANS	Wood, G. M.	LARC	Ioup, G. E.	NSG 1460	2290
47	UNIV OF PITTSBURGH	Kohl, F. J.	LERC	Meier, G. H	NSG 3214	3445
47	UNIV OF SOUTHERN CAL	Conway, E. J.	LARC	Kroger, F. A.	NSG 1536	1699
47	UNIV TEXAS-EL PASO	Brandhorst, H. W., Jr.	LERC	Brient, S. J.	NSG 3146	3712
47	UNIV OF TORONTO	Baker, D. J.	LARC	Tennyson, R. C.	NSG 7409	4024
47	UNIV OF UTAH	Fripp, A. L.	LARC	Rosenberger, F. E.	NSG 1534	3730
47	UNIV OF VIRGINIA	Fripp, A. L.	LARC	Jesser, W. A.	NSG 1652	3860
47	UNIV OF VIRGINIA	Behrendt, D. R.	LERC	Wawner, F. E., Jr.	NSG 3242	3863
47	UNIV OF WASHINGTON	Gangler, J. J.	HQ-RW	Mueller, J. I.	NGL 48-002-004	3930
47	UNIV OF WYOMING	DiCarlo, J. A.	LERC	Adams, D. F.	NSG 3217	4020
47	UNIV OF WYOMING	Reeves, F. A.	MSFC	Saunders, C.	NAS 8-32486	4017
47	VANDERBILT UNIVERSTY	Nichols, R. L.	MSFC	Kinser, D. L.	NAS 8-32695	3520
47	VIRGINIA POLY INST	Nelson, H. G.	ARC	Brinson, H. F.	NSG 2038	3909
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Louthan, M. R., Jr.	NSG 1382	3893
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Houska, C. R.	NSG 1470	3895
47	VIRGINIA POLY INST	Tenney, D. R.	LARC	Unnam, J.	NSG 1531	3900
47	VIRGINIA POLY INST	Everett, R. A., Jr.	LARC	Morris, D. H.	NSG 1571	3901
47	VIRGINIA POLY INST	Baker, D. J.	LARC	Hyer, M. W	NSG 1621	3907
47	VIRGINIA POLY INST	Sovey, J. S.	LERC	Dwight, D. W.	NSG 3204	3912
47	YALE UNIVERSITY	Fryburg, G. C.	LERC	Rosner, D. E.	NSG 3107	1826
49	AUBURN UNIV-AUBURN	Decker, A. J.	LERC	Swinson, W. F	NSG 3233	1026
49	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Cook, K. B.	NAS 8-32633	1020
49	AUBURN UNIV-AUBURN	Routh, D. E.	MSFC	Kerns, D. V.	NAS 8-32634	1021
49	AUBURN UNIV-AUBURN	Daniel, C. C.	MSFC	Flood, C. A., Jr.	NSG 8047	1027
49	CALIF INST OF TECH	Carter, C. H.	HQ-LU	Albee, A. L.	NGT 05-003-790	1203
49	CARNEGIE-MELLON UNIV	Pohly, J. G.	HQ-LU	Cathie, W.	NGT 39-087-790	3342
49	CASE WESTERN RESERVE	Doolin, B. F.	ARC	Martin, C. F.	NSG 2384	3154

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49	CASE WESTERN RESERVE	Smetana, J.	LERC	Collin, R. E.	NAS 3-21365	3141
49	CASE WESTERN RESERVE	Wintucky, E. G.	LERC	Bahniuk, E.	NAS 3-21946	3142
49	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D. F.	NSG 3126	3161
49	CASE WESTERN RESERVE	Carter, C. H.	HQ-LU	Prahe, J. M.	NGT 36-027-011	3152
49	CASE WESTERN RESERVE	Pohly, J. G.	HQ-LU	Chenelle, D. W.	NGT 36-027-790	3153
49	CITY COLLEGE OF N Y	Braun, W. H.	LERC	Weinstein, H.	NSG 3174	2912
49	CLEVELAND STATE UNIV	Beach, R. F.	LERC	Burghart, J. H.	NSG 3223	3195
49	CLEVELAND STATE UNIV	Pohly, J. G.	HQ-LU	Bennett, W. R.	NGT 36-025-780	3191
49	COLLEGE OF WM & MARY	Migneault, G. E.	LARC	Schaefer, M. K.	NSG 1625	3768
49	COLUMBIA UNIVERSITY	Stephens, D. G.	LARC	Galanter, E.	NSG 1550	2934
49	COLUMBIA UNIVERSITY	Stephens, D. G.	LARC	Borsky, P. N.	NSG 1616	2935
49	DUKE UNIVERSITY	Hayduk, R. J.	LARC	Melosh, R. J.	NSG 1647	3106
49	GEORGE WASHINGTON U	Morakis, J. C.	GSFC	Helgert, H. J.	NSG 5109	1872
49	GEORGE WASHINGTON U	Duberg, J. E.	LARC	Liebowitz, H.	NGL 09-010-053	1852
49	GEORGIA INST OF TECH	Vykukal, H. C.	ARC	Olson, L. H.	NSG 2356	1998
49	GEORGIA INST OF TECH	Reed, B.	MSFC	Pierce, A. D.	NAS 8-33093	1987
49	HAMPTON INSTITUTE	Cox, J. J.	LARC	Slaughter, L. H.	NCA 1-25	3781
49	HOWARD UNIVERSITY	Hui, P. S.	GSFC	Choudhury, A. K.	NAS 5-24251	1877
49	HOWARD UNIVERSITY	Chapman, J. W.	GSFC	Cox, E. L.	NCA 5-29	1880
49	HOWARD UNIVERSITY	Chapman, J. W.	GSFC	Cox, E. L.	NCA 5-91	1881
49	HOWARD UNIVERSITY	Hammer, H. A.	LARC	Bainum, P. M.	NSG 1414	1887
49	IOWA STATE UNIV	Pollack, J. B.	ARC	Iversen, J. D.	NCA 2-340802	2184
49	IOWA STATE UNIV	Fralich, R. W.	LARC	McDaniel, T. J.	NSG 1372	2191
49	LEHIGH UNIVERSITY	Chamis, C. C.	LERC	Sih, G. C.	NSG 3179	3370
49	MASS INST OF TECH	Doolin, B. F.	ARC	Athans, M.	NGL 22-009-124	2522
49	MASS INST OF TECH	Stewart, J. D.	ARC	Young, L. R.	NSG 2230	2562
49	MASS INST OF TECH	Chamis, C. C.	LERC	McGarry, F. J.	NSG 3044	2570
49	MASS INST OF TECH	Braun, W. H.	LERC	Kerrebrock, J. L.	NSG 3187	2576
49	MISSISSIPPI STATE U	Sims, J. L.	MSFC	Kassner, J. L., Jr.	NAS 8-32912	2736
49	MORGAN STATE UNIV	Friedman, D. S.	GSFC	Taylor, J. H.	NAS 5-23558	2329
49	MORGAN STATE UNIV	Mundy, J. R.	GSFC	Proctor, N. K.	NAS 5-25700	2331
49	NAVAJO COMMUNITY COL	Whitley, S. L.	NSTL	Isher, S. F.	NSG 737	1089
49	NEW MEX ST U-LAS CR	Pincus, B. R.	GSFC	Lawrence, H.	NAS 5-24241	2886
49	NEW YORK UNIVERSITY	Labus, T. L.	LERC	Keller, J. B.	NSG 3059	3008
49	NORTHWESTERN UNIV	Pohly, J. G.	HQ-LU	Ingersoll, D.	NGT 14-007-780	2067
49	OHIO STATE UNIV	Bowles, K. J.	LERC	Smith, E. E.	NSG 3235	3231
49	OHIO STATE UNIV	Pohly, J. G.	HQ-LU	Stranges, J.	NGT 36-008-7[illegible]	3220
49	OKLAHOMA STATE UNIV	West, W. W.	WFC	Buck, R. F.	NAS 6-2970	3298
49	OKLAHOMA STATE UNIV	Carr, R. E.	WFC	Roth, L. O.	NSG 6018	3303
49	OLD DOMINION UNIV	Card, M. F.	LARC	Tweed, J.	NSG 1279	3802
49	OLD DOMINION UNIV	Wieting, A. R.	LARC	Thornton, E. A.	NSG 1321	3804
49	OLD DOMINION UNIV	Groom, N. J.	LARC	Roberts, A. S., Jr.	NSG 1473	3817
49	OLD DOMINION UNIV	Sutton, K.	LARC	Tiwari, S. N.	NSG 1500	3821
49	OLD DOMINION UNIV	Carter, C. H	HQ-LU	McRee, G. J.	NGT 47-003-028	3794
49	OLD DOMINION UNIV	Carter, C. H.	HQ-LU	Goglia, G. L.	NGT 47-003-029	3795
49	PRINCETON UNIVERSITY	McPherson, W. B.	MSFC	Caveny, L. H.	NAS 8-33102	2842
49	PURDUE UNIVERSITY	Pohly, J. G.	HQ-LU	Holec, D. E.	NGT 15-005-790	2157
49	RENSSELAER POLY-NY	Gevarter, W. B.	HQ-RE	Yerazunis, S. W.	NSG 7369	3046
49	RICE UNIVERSITY	Brantley, W.	MSFC	Few, A. A.	NAS 8-33023	3545
49	SOUTHEASTN OKLA ST U	Bivins, R. G.	HQ-ET	Oliver, R.	NASW 3180	3306
49	STANFORD UNIVERSITY	Erzberger, H.	ARC	Bryson, A. E., Jr.	NGT 05-020-007	1345
49	STANFORD UNIVERSITY	Bi[illegible]gham, J.	ARC	Peterson, A. M.	NSG 2121	1375
49	STANFORD UNIVERSITY	Lorell, K. R.	ARC	Powell, J. D.	NSG 2246	1380
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Adams, J. L.	NGT 05-020-409	1367
49	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Bershader, D.	NGT 05-020-412	1368
49	TENNESSEE STATE UNIV	Pohly, J. G.	HQ-LU	Malkani, M. J.	NGT 43-014-750	3488
49	TENNESSEE STATE UNIV	Pohly, J. G.	HQ-LU	Malkani, M. J.	NGT 43-014-790	3489
49	TUSKEGEE INSTITUTE	Pohly, J. G.	HQ-LU	Dybczak, Z. W.	NGT 01-005-750	1031

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49	TUSKEGEE INSTITUTE	Pohly, J. G.	HQ-LU	Dybczak, Z. W.	NGT 01-005-780	1032
49	UNIV ALA-HUNTSVILLE	Carter, C. H.	HQ-LU	Karr, G. R.	NGT 01-008-021	1057
49	UNIV ALA-UNIVERSITY	Carter, C. H.	HQ-LU	Barfield, B. F.	NGT 01-002-099	1061
49	UNIV CALIF-BERKELEY	Chang, T. C.	GSFC	Angelakos, D. J.	NSG 693	1464
49	UNIV CALIF-L ANGELES	Sobieski, J.	LARC	Schmit, L. A., Jr.	NSG 1490	1528
49	UNIV CALIF-SAN DIEGO	Schaefer, D. H.	GSFC	Lee, S. H.	NGR 05-009-264	1598
49	UNIV OF CENTRAL FLA	Springer, D. A.	KSC	Riad, S. M.	NAS10-9455	1925
49	UNIV OF CINCINNATI	Mikulas, M. M., Jr.	LARC	Nayfeh, A. H.	NSG 1185	3248
49	UNIV COLORADO-BOLDR	Loendorf, D. D.	LARC	Jordan, H. F.	NSG 1489	1760
49	UNIV OF FLORIDA	Heath, D. F.	GSFC	Green, A. E.	NAS 5-22908	1927
49	UNIV HOUSTON-HOUSTON	Kennedy, M. G.	JSC	Lee, W. B.	NAS 9-15680	3615
49	UNIV HOUSTON-HOUSTON	Carter, C. H.	HQ-LU	Huang, C. J.	NGT 44-005-114	3621
49	UNIV HOUSTON-HOUSTON	Carter, C. H.	HQ-LU	Huang, C. J.	NGT 44-005-115	3622
49	UNIV ILLINOIS-CHICGO	Pollack, J. B.	ARC	Cogley, A. C.	NCA 2-330901	2109
49	UNIV OF KANSAS	Saltzman, E. J.	DFRC	Muirhead, V. U.	NSG 4021	2247
49	UNIV OF KANSAS	Saltzman, E. J.	DFRC	Muirhead, V. U.	NSG 4023	2248
49	UNIV MARYLAND-COL PK	Caudill, L. O.	GSFC	McIlrath, T. J.	NAS 5-25132	2340
49	UNIV MARYLAND-COL PK	Mundy, J. R.	GSFC	Wockenfuss, W. A.	NCA 5-28	2359
49	UNIV MARYLAND-COL PK	Degnan, J. J.	GSFC	Hochuli, U. E.	NSG 5042	2385
49	UNIV MARYLAND-COL PK	McGarry, F. E.	GSFC	Basili, V. R.	NSG 5123	2387
49	UNIV MARYLAND-COL PK	Carter, C. H.	HQ-LU	Emad, F. P.	NGT 21-002-254	2379
49	UNIV MICH-ANN ARBOR	Fish, R. H.	ARC	Springer, G. S	NSG 2333	2674
49	UNIV OF NEW MEXICO	Pohly, J. G.	HQ-LU	Etter, D. M.	NGT 32-004-770	2901
49	UNIV OF NOTRE DAME	Doolin, B. F.	ARC	Sain, M. K.	NSG 2388	2177
49	UNIV OKLAHOMA-NORMAN	Pohly, J. G.	HQ-LU	Thomas, G.	NGT 37-003-760	3313
49	UNIV OF PERU	Christie, C. J.	GSFC	Unavailable	NASW 7	4034
49	UNIV OF SANTA CLARA	Carter, C. H.	HQ-LU	Healy, T. J.	NGT 05-017-998	1685
49	UNIV SO MISSISSIPPI	Hegwood, R. B.	NSTL	Brundage, W. G.	NAS13-95	2752
49	UNIV TENNESSEE-KNOXV	Staiger, P. J.	LERC	Dicks, J. B.	NSG 3224	3515
49	UNIV TEXAS-ARLINGTON	Smith, J. M.	LERC	Wilson, D. R.	NSG 3255	3638
49	UNIV TEXAS-AUSTIN	Richard, R. R.	JSC	Hartwig, W. H.	NAS 9-14491	3647
49	UNIV TEXAS-AUSTIN	Pels, G. F.	JSC	Tucker, A. J.	NAS 9-15217	3649
49	UNIV OF TOLEDO	Finnegan, P. M.	LERC	Keith, T. G., Jr.	NCC 3 5	3271
49	UNIV OF TOLEDO	Labus, T. L.	LERC	Dewitt, K. J.	NSG 3121	3274
49	UNIV OF UTAH	Card, M. F.	LARC	Resch, R. D.	NSG 1313	3729
49	UNIV OF VIRGINIA	Lamb, G. M.	GSFC	Mattauch, R. J.	NAS 5-24218	3845
49	UNIV OF VIRGINIA	Conner, D. W.	LARC	Kuhlthau, A. R.	NAS 1-14908	3842
49	UNIV OF VIRGINIA	Tapscott, R. J.	LARC	Jacobson, I. D.	NSG 1399	3854
49	VIRGINIA POLY INST	Davis, J. G, Jr.	LARC	Herakovich, C. T.	NCC 1 15	3879
49	VIRGINIA POLY INST	Davis, J. G., Jr.	LARC	Herakovich, C. T.	NGR 47-004-129	3883
49	VIRGINIA POLY INST	Hoffman, E. L.	LARC	Herakovich, C. T.	NSG 1250	3888
49	VIRGINIA POLY INST	Sobieski, J.	LARC	Anderson, L R.	NSG 1627	3908
49	WASHINGTON UNIVERSTY	Giles, G. L.	LARC	Szabo, B. A.	NSG 1640	2784
51	ALABAMA A&M UNIV	Nerren, B. H.	MSFC	Sharma, G. C.	NSG 8067	1013
51	ALCORN STATE UNIV	Wolverton, B. C.	NSTL	Latif, A.	NSG 8036	2730
51	CALIF INST OF TECH	Young, R. S.	HQ-SB	Horowitz, N. H.	NGR 05-002-121	1196
51	CALIF INST OF TECH	Winter, D. L.	HQ-SB	Strumwasser, F.	NSG 7387	1225
51	CAL STATE U-L ANGLES	Hochstein, L. I.	ARC	Andreoli, A. J.	NSG 2199	1246
51	COLORADO STATE UNIV	Holton, E. M.	ARC	Jordan, J. P.	NSG 2232	1723
51	CORNELL UNIVERSITY	Young, R. S.	HQ-SB	MacDonald, R. E.	NSG 7235	2982
51	CORNELL UNIVERSITY	Young, R. S.	HQ-SB	Gibson, J.	NSG 7529	2990
51	EMORY UNIVERSITY	Holton, E. M.	ARC	Popovic, V. P.	NGL 11-001-009	1971
51	FLORIDA A&M UNIV	Klein, H. P.	ARC	Tolbert, M. E.	NSG 2311	1912
51	GEORGIA INST OF TECH	Young, R. S.	HQ-SB	Hubbard, J. S.	NSG 7069	2010
51	HARDIN-SIMMONS UNIV	Young, R. S.	HQ-SB	Foster, T. L.	NGR 44-095-001	3536
51	HARVARD UNIVERSITY	Nolte, R. W.	JSC	Newton, R. W.	NAS 9-15326	2449
51	MASS INST OF TECH	MacElroy, R. D.	ARC	Rich, A.	NCA 2-425 11	2516
51	MASS INST OF TECH	Daunton, N. G.	ARC	Bizzi, E.	NGR 22-009-798	2540

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51	MASS INST OF TECH	Daunton, N. G.	ARC	Nauta, W. J.	NGR 22-009-826	2541
51	MASS INST OF TECH	Young, R. S.	HQ-SB	Biemann, K.	NGR 22-009-005	2528
51	NORTH GEORGIA COL	Downs, S. W., Jr.	MSFC	Biesbrock, J. A.	NAS 8-30619	2016
51	OHIO STATE UNIV	Mehler, W. R.	ARC	Lim, D. J.	NSG 2220	3228
51	OHIO UNIVERSITY	Halstead, T. W.	HQ-SB	Jaffe, M. J.	NSG 7352	3243
51	PENN STATE U-UNIV PK	Morrison, D. R.	JSC	Hymer, W. C.	NAS 9-15566	3383
51	PENN STATE U-UNIV PK	Young, R. S.	HQ-SB	Casida, [illegible] E., Jr.	NGR 39-009-180	3394
51	PRINCETON UNIVERSITY	Halstead, T. W.	HQ-SB	Jacobs [illegible] P.	NSG 7280	2865
51	PURDUE UNIVERSITY	Halstead, T. W.	HQ-SB	Mitchell, C. A.	NSG 7278	2174
51	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Wedler, F. C.	NSG 7065	3043
51	RENSSELAER POLY-NY	Young, R. S.	HQ-SB	Pope, D. H.	NSG 7345	3045
51	RICE UNIVERSITY	Halstead, T. W.	HQ-SB	Ward, C. H.	NASW 3164	3551
51	ROCKEFELLER UNIV	Daunton, N. G.	ARC	Wilson, V. J.	NSG 2380	3047
51	SAN FRAN STATE UNIV	Young, R. S.	HQ-SB	Orenberg, J. B.	NSG 7512	1268
51	SAN JOSE STATE UNIV	Winget, C. M.	ARC	Holley, D. C.	NCA 2-675903	1275
51	SAN JOSE STATE UNIV	Miquel, J.	ARC	Ballard, R. C.	NCA 2-675906	1277
51	SAN JOSE STATE UNIV	Deal, P. H.	ARC	Haight, R. D	NCA 2-675907	1278
51	SAN JOSE STATE UNIV	Klein, H. P.	ARC	Weaver, E. C.	NCA 2-675910	1280
51	SO ILL UNIV-CARBONDL	Young, R. S.	HQ-SB	Yopp, J. H.	NSG 7394	2073
51	STANFORD UNIVERSITY	MacElroy, R. D.	ARC	Loew, G. H.	NCA 2-745905	1331
51	STANFORD UNIVERSITY	Goldwater, D	ARC	Debusk, R. F	NCA 2-745911	1337
51	STANFORD UNIVERSITY	Young, R. S.	HQ-SB	Lederberg, J.	NGR 05-020-004	1355
51	STATE U NY-STONY BRK	Souza, K. A.	ARC	Krikorian, A. D.	NAS 2-10150	3065
51	STATE U NY-STONY BRK	Halstead, T. W.	HQ-SB	Krikorian, A. D.	NSG 7270	3084
51	TEXAS A&M UNIVERSITY	Fricks, D.	JSC	Morgan, P. W.	NAS 9-15873	3587
51	TULANE UNIVERSITY	MacElroy, R. D.	ARC	Johnson, E. J.	NCA 2-800801	2286
51	UNIV CALIF-BERKELEY	Lanyi, J. K.	ARC	Packer, L.	NCA 2-50801	1432
51	UNIV CALIF-BERKELEY	Geib, D. S.	HQ-SB	Pace, N.	NSG 7262	1473
51	UNIV CALIF-BERKELEY	Halstead, T. W.	HQ-SB	Pace, N	NSG 7336	1475
51	UNIV CALIF-DAVIS	Winget, C. M.	ARC	Chapman, L. F.	NCA 2-180905	1489
51	UNIV CALIF-DAVIS	Merek, E. L.	ARC	Huffaker, R. C.	NSG 2406	1493
51	UNIV CALIF-DAVIS	Halstead, T. W.	HQ-SB	Smith, A. H	NSG 7493	1495
51	UNIV CALIF-SAN FRAN	Souza, K. A	ARC	Arnaud, C. D.	NAS 2-10162	1624
51	UNIV CALIF-SAN FRAN	Souza, K. A.	ARC	Arnaud, C. D.	NAS 2-10164	1625
51	UNIV CALIF-SAN FRAN	Mehler, W. R	ARC	Snyder, R. L.	NCA 2-665802	1629
51	UNIV CALIF-SAN FRAN	Ellis, S.	ARC	Riley, D. A	NCA 2-665901	1634
51	UNIV CALIF-SAN FRAN	Holton, E. M.	ARC	Arnaud, C. D	NCA 2-665902	1635
51	UNIV CALIF-SAN FRAN	Ellis, S	ARC	Riley, D. A.	NCA 2-665903	1636
51	UNIV CALIF-SAN FRAN	Young, R. S.	HQ-SB	Stoeckenius, W.	NSG 7151	1639
51	UNIV OF CHICAGO	Daunton, N. G.	ARC	Goldberg, J. M.	NGR 14-001-225	2094
51	UNIV OF CHICAGO	Larson, C. A.	HQ-SB	Moran, H. F	NSG 7303	2103
51	UNIV OF CONNECTICUT	Young, R. S.	HQ-SB	Leadbetter, E. R.	NSG 7450	1819
51	UNIV OF HAWAII-MANOA	Young, R. S.	HQ-SB	Siegel, S. M.	NGL 12-001-042	2035
51	UNIV HOUSTON-HOUSTON	Schneider, H. J.	JSC	Zlatkis, A.	NAS 9-15682	3617
51	UNIV HOUSTON-HOUSTON	Halstead, T. W.	HQ-SB	Hendr[illegible], D. H.	NSG 7300	3628
51	UNIV HOUSTON-HOUSTON	Young, R. S.	HQ-SB	Fox, G. [illegible]	NSG 7440	3630
51	UNIV HOUSTON-HOUSTON	Halstead, T. W.	HQ-SB	Coules, J. R.	NSG 9042	3634
51	UNIV OF LOUISVILLE	Holton, E. M.	ARC	Musacchia, X. J	NSG 2325	2266
51	UNIV OF LOUISVILLE	Halstead, T. W.	HQ-SB	Fuller, P. M.	NSG 7441	2268
51	UNIV MD-EASTRN SHORE	Trafford, G. M.	WFC	Albino, M	NSG 6033	2423
51	UNIV OF MIAMI	Miquel, J	ARC	Ono, K	NCA 2-438801	1956
51	UNIV MICH-ANN ARBOR	Young, R. S.	HQ-SB	Rich, A.	NSG 7452	2689
51	UNIV MICH-ANN ARBOR	Halstead, T. W.	HQ-SB	Ross, M. D.	NSG 9047	2693
51	UNIV OKLAHOMA-NORMAN	Sandler, H.	ARC	Stone, H. L.	NCA 2-580901	3312
51	UNIV ORGEON-HLTH CTR	Reeves, F. A.	MSFC	Brooks, D. L.	NAS 8-32353	3337
51	UNIV OF PENNSYLVANIA	Halstead, T. W.	HQ-SB	Brown, A. H.	NGR 39-010-149	3429
51	UNIV OF PITTSBURGH	Daunton, N. G.	ARC	Tomko, D. L.	NCA 2-592901	3435
51	UNIV SAN FRANCISCO	Young, D. R.	ARC	Furst, A.	NCA 2-670902	1669

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51	UNIV SAN FRANCISCO	Miquel, J.	ARC	Benton, E. V.	NSG 2063	1670
51	UNIV SAN FRANCISCO	Kraft, L. M.	ARC	Benton, E. V.	NSG 2304	1671
51	UNIV OF SANTA CLARA	Hochstein, L. I.	ARC	Tomlinson, G. A.	NCA 2-685808	1675
51	UNIV OF SANTA CLARA	Grindeland R.	ARC	Fast, T.	NCA 2-685812	1676
51	UNIV OF SANTA CLARA	Mandel, A. D.	ARC	Caren, L. D.	NCA 2-685813	1677
51	UNIV SO CAROLINA-COL	Young, R. S.	HQ-SB	Rohlfing, D. L.	NSG 7096	3475
51	UNIV OF SOUTHERN CAL	Young, R. S.	HQ-SB	Strehler, B. L.	NSG 7367	1705
51	UNIV TEXAS-AUSTIN	Halstead, T. W.	HQ-SB	Roux, S. J.	NSG 7480	3687
51	U TEX PUB HLTH-HUS	Smith, M. A.	JSC	Booth, F.	NAS 9-15388	3719
51	UNIV OF TOLEDO	Geib, D. S.	HQ-SB	Diehn, B	NSG 7424	3287
51	UNIV OF UTAH	Souza, K. A.	ARC	Jee, W. S.	NAS 2-10308	3724
51	UNIV OF VIRGINIA	Holton, E. M.	ARC	Pitts, G. C.	NSG 2225	3861
51	UNIV WISC-MADISON	Holton, E. M.	ARC	DeLuca, H. F.	NCA 2-865701	3988
51	UNIV WISC-MADISON	Zill, L. P.	ARC	Tibbitts, T. W.	NSG 2405	3996
51	UNIV WISC-MADISON	Young, R. S.	HQ-SB	Fitch, W. M.	NSG 7521	4009
51	UTAH STATE UNIV	Halstead, T. W.	HQ-SB	Salisbury, F. B.	NSG 7567	3749
51	WASHINGTON UNIVERSTY	Souza, K. A.	ARC	Simmons, D.	NAS 2-10177	2778
51	WORCESTER POLY INST	Young, R. S.	HQ-SB	Danielli, J F.	NSG 7154	2623
51	XAVIER UNIV-LA	Winget, C. M.	ARC	Ashman, P. U.	NGR 19 007-004	2292
51	YALE UNIVERSITY	Halstead, T. W.	HQ-SB	Galston, A W.	NSG 7290	1828
54	BOSTON UNIVERSITY	Young, R. S.	HQ-SB	Golubic, S.	NSG 7588	2437
54	CENTRAL ST UNIV-OHIO	Fordyce, J. S.	LERC	Craft, T. J., Sr.	NGR 36-033-003	3188
54	FLORIDA STATE UNIV	Young, R. S.	HQ-SB	Friedmann, E. I.	NSG 7337	1918
54	OREGON STATE UNIV	Nachtwey, D. S.	JSC	Worrest, R. C.	NAS 9-14860	3320
54	SAN JOSE STATE UNIV	Klein, H. P.	ARC	Neptune, J. A.	NCC 2 14	1286
54	TUSKEGEE INSTITUTE	Philpott, D. E.	ARC	Sapp, W. J.	NCC 2 12	1030
54	UNIV CALIF-L ANGELES	Daunton, N. G.	ARC	Markham, C. H.	NGR 05-007-418	1527
54	UNIV MARYLAND-COL PK	Scott, F. E.	MSFC	Colwell, R. R.	NAS 8-32148	2347
54	UTAH STATE UNIV	Nachtwey, D. S.	JSC	Caldwell, M. M.	NAS 9-14871	3740
55	ALABAMA A&M UNIV	Downs, S. W., Jr.	MSFC	Montgomery, O. L.	NGR 01-001-023	1002
55	TEXAS A&M UNIVERSITY	Toll, D.	GSFC	Miller, E. D.	NAS 5-25846	3573
55	UNIV MD-EASTRN SHORE	Young, R. S.	HQ-SB	Joshi, J M.	NSG 7470	2425
56	BAYLOR COL OF MED	Souza, K. A.	ARC	Matthews, J. L.	NAS 2-10354	3526
56	BAYLOR COL OF MED	Altchuler, S. I.	JSC	Johnson, P. C.	NAS 9-13737	3527
56	BAYLOR COL OF MED	Rippstein, W. J.	JSC	Duncan, W. C.	NAS 9-14407	3528
56	BAYLOR COL OF MED	Homick, J. L.	JSC	Igarashi, M.	NAS 9-14546	3529
56	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Johnson, P. C.	NAS 9-14662	3530
56	BAYLOR COL OF MED	Kimzey, S. L.	JSC	Criswell, B S.	NAS 9-15457	3531
56	BAYLOR COL OF MED	Leach, C. S.	JSC	Diferrante, N.	NAS 9-15478	3532
56	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D. F.	NSG 3151	3165
56	CASE WESTERN RESERVE	Weigand, A. J.	LERC	Gibbons, D. F.	NSG 3282	3182
56	CLEMSON UNIV-CLEMSON	Weigand, A. J.	LERC	Park, J. B.	NSG 3225	3469
56	DREXEL UNIVERSITY	Altchuler, S. I.	JSC	Kamel, I. L.	NAS 9-15915	3349
56	EMORY UNIVERSITY	Sandler, H.	ARC	King, F. A.	NGR 11-001-016	1972
56	FLORIDA A&M UNIV	Alterescu, S.	GSFC	Fresh, F A.	NAS 5-25165	1907
56	HARVARD UNIVERSITY	Leach, C S.	JSC	Moore-Ede, M. C.	NSG 9054	2484
56	HOWARD UNIVERSITY	Sanditer, H.	ARC	Cothran, L. N.	NGL 09-011-017	1882
56	HOWARD UNIVERSITY	Alterescu, S.	GSFC	Chang, P.	NAS 5-23799	1875
56	HOWARD UNIVERSITY	Friedman, D. S.	GSFC	Fischmann, E. J.	NSG 5127	1889
56	HOWARD UNIVERSITY	Yin, L. I.	GSFC	Ferguson, G. A.	NSG 5268	1892
56	HOWARD UNIVERSITY	Yin, L. I.	GSFC	Press, H. C., Jr.	NSG 5378	1895
56	JOHNS HOPKINS UNIV	Friedman, D. S.	GSFC	Long, D.	NAS 5-23732	2304
56	LINCOLN UNIV-PA	Alterescu. S.	GSFC	Frankowsky, J. W.	NAS 5-23800	3373
56	LA STATE U-SHREVEPT	Altchuler, S. I.	JSC	Albright, J. A.	NAS 9-15950	2273
56	MASS INST OF TECH	Winget, C. M.	ARC	Wurtman, R. J.	NGR 22-009-627	2534
56	MEHARRY MEDICAL COL	Alterescu, S.	GSFC	Braun, G.	NAS 5-23801	3486
56	MOREHOUSE COLLEGE	Alterescu, S.	GSFC	Margolis, S.	NAS 5-23571	2011
56	OHIO STATE UNIV	Nicogossian, A. E.	HQ-LU	Keller, M. D.	NGT 36-008-007	3219

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56	PA ST U-HERSHEY MED	Keil, L. C.	ARC	Severs, W. B.	NSG 2122	3374
56	PENN STATE U-UNIV PK	Morrison, D. R.	JSC	Todd, P. W.	NAS 9-15584	3384
56	QUEENSBOROUGH COMM C	Goldwater, D.	ARC	Yuster, R.	NCA 2-625902	3026
56	STANFORD UNIVERSITY	Holton, E. M.	ARC	Feldman, D.	NCA 2-745709	1325
56	STANFORD UNIVERSITY	Holton, E. M.	ARC	Feldman, D.	NCA 2-745802	1326
56	STANFORD UNIVERSITY	Sandler, H.	ARC	Popp, R.	NCC 2 1	1339
56	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NGL 05-020-305	1352
56	STANFORD UNIVERSITY	Keil, L. C.	ARC	Luetscher, J. A.	NGR 05-020-456	1358
56	STANFORD UNIVERSITY	Sandler, H.	ARC	Meindl, J. D.	NGR 05-020-615	1360
56	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NGR 05-020-634	1362
56	STANFORD UNIVERSITY	Carle, G. C.	ARC	Angell, J.	NGR 05-020-690	1365
56	STANFORD UNIVERSITY	Young, D. R.	ARC	Steele, C. R.	NSG 2092	1373
56	STANFORD UNIVERSITY	Sandler, H.	ARC	Harrison, D. C.	NSG 2294	1388
56	ST U NY-UPST MED CTR	Leon, H. A.	ARC	Landaw, S. A.	NCA 2-765801	3090
56	SWARTHMORE COLLEGE	Goldwater, D.	ARC	Aburdene, M. F.	NCA 2-769901	3421
56	TEMPLE UNIVERSITY	Nachtwey, D. S.	JSC	Urback, F.	NAS 9-14979	3422
56	TEXAS TECH UNIV	Holton, E. M.	ARC	Kenny, A. D.	NSG 2137	3608
56	TULANE UNIVERSITY	Weigand, A. J.	LERC	Weinstein, A. M.	NSG 3209	2288
56	UNIV OF ARIZONA	Mandel, A. D.	ARC	Meinke, W. J.	NSG 2381	1128
56	UNIV CALIF-DAVIS	Greenleaf, J. E.	ARC	Rizza, J. P.	NCA 2-180703	1485
56	UNIV CALIF-DAVIS	Rambaut, P. C.	JSC	Vogel, J. M.	NAS 9-15203	1484
56	UNIV CALIF-IRVINE	Mandel, A. D.	ARC	Tilles, J. G.	NGR 05-041-012	1497
56	UNIV CALIF-IRVINE	Sater, B. L	LERC	Foltz, E. L.	NAS 3-21963	1496
56	UNIV CALIF-SAN DIEGO	Greenleaf, J. E.	ARC	West, J. B.	NGL 05-009-109	1589
56	UNIV CALIF-SAN DIEGO	Sandler, H.	ARC	Baily, N. A.	NGR 05-009-'57	1597
56	UNIV CALIF-SAN DIEGO	Homick, J. L.	JSC	Bullock, T. H.	NSG 9048	1622
56	UNIV CALIF-SAN DIEGO	Alexander, W. C.	JSC	West, J. B.	NSG 9075	1623
56	UNIV CALIF-SAN FRAN	Callahan, P. X.	ARC	Asling, C. W.	NCA 2-665803	1630
56	UNIV CALIF-SAN FRAN	Keil, L. C.	ARC	Ramsay, D. J.	NCA 2-665807	1632
56	UNIV CALIF-SAN FRAN	Sandler, H.	ARC	Glantz, S. A.	NCA 2-665905	1638
56	UNIV CALIF-SAN FRAN	Altchuler, S. I.	JSC	Genant, H. K.	NAS 9-15887	1627
56	UNIV OF FLORIDA	Nachtwey, D. S.	JSC	Green, A. E.	NAS 9-15114	1929
56	UNIV OF FLORIDA	Sater, B. L.	LERC	Hench, L. L.	NSG 3273	1948
56	UNIV HOUSTON-HOUSTON	Alexander, W. C.	JSC	Lacy, J. L.	NAS 9-15767	3616
56	UNIV HOUSTON-CL LAKE	Alexander, W. C.	JSC	Coleman, A. E.	NAS 9-15642	3636
56	UNIV OF IOWA	Hull, W. E.	JSC	Abboud, F. M.	NSG 9060	2221
56	UNIV OF KENTUCKY	Sandler, H.	ARC	Knapp, C. F.	NSG 2318	2262
56	UNIV OF KENTUCKY	Alexander, C.	JSC	Bhagat, P. K.	NAS 9-15452	2259
56	UNIV OF LOUISVILLE	Mandel, A. D.	ARC	Sonnenfeld, G.	NCA 2-400901	2265
56	UNIV MARYLAND-COL PK	Mandel, A. D.	ARC	Goldsby, R. A.	NSG 2378	2383
56	UNIV OF MIAMI	Huntoon, C. L.	JSC	Epstein, M.	NAS 9-15473	1956
56	UNIV MICH-ANN ARBOR	Homick, J. L.	JSC	Anderson, D. J.	NAS 9-15244	2654
56	UNIV MICH-ANN ARBOR	Reschke, M. F.	JSC	Anderson, D. J.	NAS 9-15663	2656
56	U OKLA-HLTH SCI CTR	Sandler, H.	ARC	Stone, H. L.	NSG 2282	3307
56	UNIV SAN FRANCISCO	Rundel, R.	JSC	Benton, E. V.	NAS 9-15152	1667
56	UNIV TENNESSEE-KNOXV	Kimzey, S. L.	JSC	Dunn, C. D.	NAS 9-15164	3508
56	U TENNESSEE-MEMPHIS	Schneider, H. J.	JSC	Autian, J.	NAS 9-15670	3518
56	UNIV TEXAS-AUSTIN	Sheibley, D. W.	LERC	Lagow, R. J.	NSG 3190	3668
56	U TEX HEALTH CTR-DAL	Hull, W. E.	JSC	Blomquist, C. G.	NSG 9026	3717
56	UNIV WISC-MADISON	Young, D. R.	ARC	Mazess, R. B.	NAS 2-10359	3970
56	UNIV WISC-MADISON	Young, D. R.	ARC	Mazess, R. B.	NGR 50-002-051	3992
56	UNIV WISC-MADISON	Mandel, A. D.	ARC	Dick, E. C.	NSG 2104	3995
56	UNIV WISC-MADISON	Friedman, D. S.	GSFC	Siedbank, M. P.	N..S 5-24385	3977
56	UNIV WISC-MADISON	Cintron, N. M.	JSC	Schnoes, H. K.	NAS 9-15580	3987
56	VIRGINIA COMNWLTH U	Hull, W. E.	JSC	Eckberg, D. L	NSG 9063	3867
56	VIRGINIA POLY INST	Day, J. L.	JSC	Rivers, D. B.	NAS 9-15287	3876
56	WAYNE STATE UNIV	Young, D. R.	ARC	Orne, D.	NSG 2008	2695
56	YALE UNIVERSITY	Souza, K. A.	ARC	Baron, R.	NAS 2-10338	1820

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56	YALE UNIVERSITY	Mandel, A. D.	ARC	Evans, A. S.	NSG 2185	1825
59	ALABAMA A&M UNIV	Allen, R. E.	MSFC	Savage, J.	NSG 8042	1006
59	ALABAMA A&M UNIV	Snyder, R. S.	MSFC	Gibson, W. L.	NSG 8051	1007
59	ALABAMA A&M UNIV	Snyder, R. S.	MSFC	Savage, J.	NSG 8064	1010
59	BAYLOR COL OF MED	Morrison, D. R.	JSC	Twomey, J. J.	NAS 9-15669	3533
59	BAYLOR COL OF MED	Leach, C. S.	JSC	Suki, W. N.	NAS 9-15891	3534
59	BOSTON UNIVERSITY	Larson, C. A.	HQ-SB	Fulton, G. P.	NGR 22-004-018	2430
59	BRANDEIS UNIVERSITY	Homick, J. L.	JSC	Lackner, J. R.	NAS 9-15147	2440
59	CAL STATE U-HAYWARD	Greenleaf, J. E.	ARC	Brown, C. H.	NCA 2-290801	1244
59	COLORADO STATE UNIV	Hoffman, R. A.	JSC	Lett, J. T.	NSG 9045	1739
59	CORNELL UNIV-MED CTR	Keil, L. C.	ARC	Reis, D. J.	NSG 2259	2996
59	DREXEL UNIVERSITY	Larson, C. A.	HQ-SB	Dubin, S.	NSG 7494	3361
59	EMORY UNIVERSITY	Daunton, N. G.	ARC	Perachio, A. A.	NGR 11-001-045	1973
59	FLORIDA A&M UNIV	Winget, C. M.	ARC	Stronach, C. E.	NSG 2029	1910
59	FLORIDA A&M UNIV	Winget, C. M.	ARC	Soliman, K. F.	NSG 2183	1911
59	GEORGE WASHINGTON U	Halstead, T. W.	HQ-SB	Waters, E.	NASW 3165	1846
59	GEORGIA INST OF TECH	MacElroy, R. D.	ARC	Carden, J. L	NSG 2323	1997
59	JOHNS HOPKINS UNIV	Sebesta, P. D.	ARC	Ray, G. C.	NAS 2-9300	2302
59	KENTUCKY STATE UNIV	Morrison, J. D	KSC	Kloek, G.	NSG 801	2258
59	MARQUETTE UNIVERSITY	Smith, M. C., Jr.	JSC	Fitts, R. H.	NAS 9-15711	3967
59	MASS INST OF TECH	Daunton, N. G.	ARC	Vogel, F. L.	NSG 2032	2556
59	MASS INST OF TECH	Quattrone, P. D.	ARC	Karel, M.	NSG 2334	2565
59	MASS INST OF TECH	Quattrone, P. D.	ARC	Meissner, H. P.	NSG 2335	2566
59	MASS INST OF TECH	Quattrone, P. D.	ARC	Modell, M.	NSG 2403	2568
59	MASS INST OF TECH	Luczkowski, S. M.	JSC	Young, L. R.	NAS 9-15343	2515
59	MIAMI UNIVERSITY	Homick, J. L.	JSC	Parker, D. E.	NAS 9-14538	3202
59	NEW YORK UNIVERSITY	Reeves, F. A.	MSFC	Johnson, A. J.	NAS 8-33099	2998
59	PURDUE UNIVERSITY	Zeitman, B. B.	ARC	Hoff, J. E.	NSG 2401	2160
59	PURDUE UNIVERSITY	Zill, L. P.	ARC	Mitchell, C. A.	NSG 2404	2161
59	SAN FRAN STATE UNIV	Oyama, J.	ARC	Kakihana, R.	NSG 2281	1267
59	SAN JOSE STATE UNIV	Dalton, B. P.	ARC	Ballard, R. C.	NSG 2213	1292
59	SO DAKOTA SCHL MINES	Hull, W. E.	JSC	Gowen, R. J.	NAS 9-15522	3477
59	SO UNIV-BATON ROUGE	Sandler, H.	ARC	Ray, G.	NSG 2041	2281
59	STANFORD UNIVERSITY	Lawless, J. G.	ARC	Loew, G. H.	NCA 2-745902	1329
59	STANFORD UNIVERSITY	Silverman, M. P.	ARC	Young, L. Y.	NCA 2-745907	1333
59	STANFORD UNIVERSITY	Mehler, W. R.	ARC	Chow, K. L.	NGR 05-020-435	1356
59	STANFORD UNIVERSITY	Williams, T. S., Jr.	LARC	Lederberg, J.	NAS 1-9692	1305
59	STANFORD UNIVERSITY	Carter, C. H.	HQ-LU	Beard, R. R.	NGT 05-020-777	1369
59	STANFORD UNIVERSITY	Young, R. S.	HQ-SB	Bonner, W. A.	NGL 05-020-582	1353
59	STATE UNIV NY-ALBANY	Horrigan, D. J.	JSC	Farhi, L. E.	NAS 9-15802	3052
59	STATE UNIV NY-ALBANY	Williams, J. R.	MSFC	VanOss, C. J.	NAS 8-32947	3050
59	TEXAS A&M UNIVERSITY	Stonesifer, G. R.	GSFC	Rouse, J. W., Jr.	NAS 5-20796	3569
59	TEXAS A&M UNIVERSITY	Smith, M. C., Jr.	JSC	Burns, E. E.	NAS 9-12434	3577
59	TULANE UNIVERSITY	Mehler, W. R.	ARC	Brizzee, K. R.	NSG 2139	2287
59	UNIV ALA-BIRMINGHAM	Rhodes, P. H.	MSFC	Sachs, G.	NAS 8-32923	1037
59	UNIV ALA-BIRMINGHAM	Bannister, T.	MSFC	Chiovetti, R., Jr.	NAS 8-33014	1038
59	UNIV OF ARIZONA	Kimzey, S. L.	JSC	Bartels, P. H.	NAS 9-14692	1104
59	UNIV OF ARIZONA	Snyder, R. S.	MSFC	Bartels, P. H.	NAS 8-31948	1101
59	UNIV OF ARIZONA	Williams, J. R.	MSFC	Bier, M.	NAS 8-32950	1102
59	UNIV OF ARIZONA	Vitale, J. A.	HQ-ET	Bier, M.	NSG 7333	1145
59	UNIV CALIF-BERKELEY	MacElroy, R. D.	ARC	Spear, R.	NCA 2-50710	1431
59	UNIV CALIF-BERKELEY	Stull, M. A.	ARC	Welch, W. J.	NSG 2271	1460
59	UNIV CALIF-SAN FRAN	Souza, K. A.	ARC	Cann, C. E.	NAS 2-10350	1626
59	UNIV CALIF-SAN FRAN	Feller, D. D.	ARC	Searle, G. L.	NCA 2-665801	1628
59	UNIV CALIF-SAN FRAN	Keil, L. C.	ARC	Dallman, M. F.	NCA 2-665806	1631
59	UNIV HOUSTON-HOUSTON	Tremor, J. W.	ARC	Cowles, J. R.	NAS 2-10087	3610
59	UNIV HOUSTON-HOUSTON	Sauer, R. L.	JSC	Cox, J. E.	NAS 9-11676	3611
59	UNIV ILLINOIS-URBANA	Chassay, C. E.	JSC	Voss, E. W.	NAS 9-15328	2115

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59	UNIV MD-EASTRN SHORE	Trafford, G. H.	WFC	Lynk, W. L.	NSG 6017	2421
59	UNIV MICH-ANN ARBOR	Reschke, M. F.	JSC	Anderson, D. J.	NAS 9-15375	2655
59	U MINN-MNPLS-ST PAUL	Smith, M. C., Jr.	JSC	Mitchell, J. R.	NAS 9-12560	2705
59	UNIV MO-COLUMBIA	Quattrone, P D.	ARC	Winnick, J.	NSG 2193	2762
59	UNIV NEVADA-DRI	Johnson, R. D.	ARC	Hall, M. R.	NCC 2 6	2807
59	UNIV ORGEON-HLTH CTR	Scott, F. E.	MSFC	Knox, R. J.	NAS 8-32162	3336
59	UNIV ORGEON-HLTH CTR	Reeves, F. A.	MSFC	Seaman, G. V.	NAS 8-32609	3338
59	UNIV ORGEON-HLTH CTR	Nerrin, B. N.	MSFC	Brooks, D. E.	NAS 8-32817	3339
59	UNIV OF PENNSYLVANIA	Lintott, J. E.	JSC	Brown, A. H.	NAS 9-15531	3427
59	UNIV SAN FRANCISCO	Philpott, D. E.	ARC	Benton, E. V.	NAS 2-9845	1664
59	UNIV SAN FRANCISCO	Souza, K. A.	ARC	Benton, E. V.	NAS 2-10161	1665
59	UNIV OF SANTA CLARA	Greenleaf, J. E.	ARC	Pefley, R. K.	NAS 2-9967	1672
59	UNIV TEXAS-GALVESTON	Leach, C. S.	JSC	Ziegler, M. G.	NAS 9-15565	3715
59	UNIV OF VIRGINIA	Souza, K. A.	ARC	Pitts, G. C.	NAS 2-10195	3843
59	UNIV OF WASHINGTON	Holton, E. M.	ARC	Carter, D. R.	NSG 2385	3940
59	UNIV OF WEST FLORIDA	Barnes, C. M.	JSC	Schaefer, H. J.	NAS 9-15417	1967
59	WRIGHT STATE UNIV	Daunton, N. G.	ARC	Crampton, G. H.	NCA 2-875801	3292
59	WRIGHT STATE UNIV	Nicogossian, A. E.	HQ-SB	Mohler, S. R.	NGT 36-024-790	3293
61	FLORIDA A&M UNIV	Winget, C. M.	ARC	Walker, C. A.	NCA 2-230701	1908
61	SAN JOSE STATE UNIV	Daunton, N. G.	ARC	Fox, R. A.	NCA 2-675801	1269
61	SAN JOSE STATE UNIV	Daunton, N. G.	ARC	Banks, P. M.	NCA 2-675808	1270
61	SAN JOSE STATE UNIV	Suri, K. P.	ARC	Fox, R. A.	NSG 2339	1300
61	UNIV CALIF-BERKELEY	Cowings, P. S	ARC	Strohman, R. C.	NCA 2-50803	1433
61	UNIV CALIF-L ANGELES	Ellis, S.	ARC	Parlow, A	NCA 2-390801	1510
61	UNIV CALIF-SAN FRAN	Cowings, P. S.	ARC	Kamiya, J.	NCA 2-665810	1633
61	UNIV OF UTAH	Sharp, J. C.	ARC	Nielson, H. C.	NSG 2350	3731
62	JOHNS HOPKINS UNIV	Patton, R. M.	ARC	Brady, J. V.	NGR 21-001-111	2315
62	TENNESSEE STATE UNIV	Kochner, J.	JSC	Sampson, C.	NAS 9-15862	3487
62	UNIV OF SANTA CLARA	Connors, M. M.	ARC	Akins, F.	NCA 2-685805	1673
69	BOSTON UNIVERSITY	Powell, C. A.	LARC	Hellman, R. D.	NSG 1644	2433
69	CAL MARITIME ACADEMY	Patton, R. M.	ARC	Rizza, J. P.	NCA 2-100901	1233
69	MASS INST OF TECH	Daunton, N. G.	ARC	Held, R. M.	NGL 22-009-308	2523
69	NO CAROLINA STATE U	Mayes, W. H	LARC	Horvath, J J.	NGL 34-002-095	3123
69	OHIO STATE UNIV	Lauber, J. K.	ARC	Rockwell, T. H.	NAS 2-10047	3210
69	OHIO STATE UNIV	Dunn, R. S.	ARC	Jagacinski, R. J.	NSG 2179	3227
69	SAN JOSE STATE UNIV	Stewart, J. D.	ARC	Clark, B.	NSG 2269	1294
69	STANFORD UNIVERSITY	Mosher, M.	ARC	Karamcheti, K.	NSG 2393	1396
69	TUFTS UNIVERSITY	Palmer, E. A.	ARC	Chechile, R A.	NCA 2-785801	2609
69	UNIV CALIF-SAN FRAN	Cowings, P. S.	ARC	Kamiya, J.	NCA 2-665904	1637
69	UNIV N CAR-GRNSBORO	Curry, R. E.	ARC	Regan, J. E.	NSG 2390	3138
69	UNIV OREGON-EUGENE	Wright, R. H.	ARC	Murray, R. J.	NCA 2-587801	3330
69	UNIV TEXAS-AUSTIN	Patton, R M.	ARC	Frey, J	NSG 2065	3664
69	UNIV TEXAS-GALVESTON	Reschke, M. F.	JSC	Correia, M J.	NAS 9-14641	3714
69	UNIV OF VIRGINIA	DeLoach, R.	LARC	Jacobson, I. D.	NSG 1509	3857
72	ARIZONA STATE UNIV	Bifano, W. J.	LERC	Bahr, D. M.	DEN 3 50	1070
72	GEORGIA INST OF TECH	Scudder, L. R.	LERC	Jacobson, J. E	NSG 3297	2005
72	UNIV OF VIRGINIA	Rollins, R. H.	HQ-RX	Kuhlthau, A R.	NSG 7266	3864
75	STANFORD UNIVERSITY	Barnett, R. M.	ARC	Pederson, C. A.	NAS 2-8898	1306
79	UNIV CALIF-BERKELEY	Tanner, T. A.	ARC	LaPorte, T. R.	NGR 05-003-471	1451
79	UNIV CALIF-BERKELEY	Tuyahov, A. J.	HQ-ET	Colwell, R. N.	NSG 7522	1478
79	UNIV CALIF-DAVIS	Connors, M. M.	ARC	Harrison, A. A.	NCA 2-180803	1486
99	BOWIE STATE COLLEGE	Bailey, E.	GSFC	Kirksey, C. H.	NSG 5416	2300
99	BOWIE STATE COLLEGE	Pohly, J. G.	HQ-LU	Kirksey, C. H.	NGT 21-027-012	2298
99	CAL STATE U-CHICO	Rich, W. B.	HQ-LF	Unavailable	NASW 2835	1239
99	CHICAGO STATE UNIV	Young, S. G.	LERC	Treptow, R S.	NSG 3030	2059
99	COLLEGE OF WM & MARY	Anderson, A. F.	LARC	Aceto, H., Jr.	NAS 1-14972	3757
99	COLLEGE OF WM & MARY	Greene, R. F., Jr.	LARC	Barnes, C. H., Jr.	NAS 1-15899	3758
99	COLLEGE OF WM & MARY	Anderson, A. F.	LARC	Rublein, G. T.	NGL 47-006-058	3762

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99	COLUMBIA UNIVERSITY	Jennings, N.	GSFC	Yavarkovsky, J.	NAS 5-25422	2921
99	CORNELL UNIVERSITY	Williams, T. S., Jr.	LARC	Sagan, C. E.	NAS 1-9683	2950
99	ESTRN SHORE C ITY COL	Milliner, J. B.	WFC	Layman, P.	NAS 6-2964	3772
99	GEORGE WASH NGTON U	Jackson, H. D.	LERC	Wood, F. B.	NSG 3130	187;
99	GEORGETOWN UNIV	Puttkamer, J.	HQ-MT	Cheston, P. S.	NASW 3152	1874
99	GEORGIA INST OF TECH	Hall, J. B., Jr.	LARC	Wilkins, R. D.	NAS 1-14947	1978
99	HOWARD UNIVERSITY	Carter, C. H.	HQ-LU	Fan, D. N.	NGT 09-011-060	1885
99	MASS INST OF TECH	Wempe, T. E.	ARC	Sheridan, T. B.	NSG 2118	2557
99	MASS INST OF TECH	Wempe, T. E.	ARC	Athans, M.	NSG 2180	2560
99	MASS INST OF TECH	Tate, F.	HQ-SP	Bridge, H. S.	NGL 22-009-638	2526
99	MOREHOUSE COLLEGE	Pohly, J. G.	HQ-LU	Hall, J. H.	NGT 11-008-004	2012
99	NM HIGHLANDS UNIV	Pohly, J. G.	HQ-LU	Zenick, H.	NGT 32-010-001	2881
99	NEW YORK UNIVERSITY	Roberson, F. I.	HQ-ET	Fusfeld, H. I.	NSG 7636	3014
99	OKLAHOMA STATE UNIV	Miller, S. A.	ARC	Wiggins, K. E.	NAS 2-9877	3297
99	OLD DOMINION UNIV	Anderson, A. F.	LARC	Maygarden, E. M.	NAS 1-14193	3789
99	PENN STATE UNIV PK	Golden, T. S.	GSFC	Feller, I. R.	NAS 5-24329	3377
99	PRINCETON UNIVERSITY	Gilbreath, W. P.	ARC	O'Neill, G. K.	NSG 2062	2852
99	PURDUE UNIVERSITY	Gordon, F., Jr	GSFC	Swain, P. H.	NSG 5414	2172
99	SAN FRAN STATE UNIV	Tomberlin, K. A.	ARC	Eisenberg, L.	NCA 2-660901	1264
99	SAN FRAN STATE UNIV	Stull, M. A.	ARC	Seeger, C. S.	NSG 2210	1266
99	SO DAKOTA STATE UNIV	Gordon, F., Jr.	GSFC	Moore, D. G.	NAS 5-24206	3478
99	SOUTHEASTN OKLA ST U	Bivins, R. G.	HQ-ET	Gold, C. H.	NASW 3007	3305
99	SPELMAN COLLEGE	Pohly, J. G.	HQ-LU	Falconer, E.	NGT 11-013-001	2019
99	ST UNIV SYSTM OF FLA	Dolby, W.	HQ-ET	Unavailable	NASW 3060	1921
99	TEXAS A&M UNIVERSITY	Amsbury, D. L.	JSC	Whitehorn, N	NAS 9-15468	3586
99	TUFTS UNIVERSITY	Wempe, T. E	ARC	Kreifeldt, J. G.	NSG 2156	2610
99	UNIV CALIF-BERKELEY	Tate, F.	HQ-SP	Tole, J. R.	NGL 05-003-497	1444
99	HASTINGS COL OF LAW	Glazer, J. H.	ARC	Wolcott, T.	NCA 2-280801	1257
99	UNIV OF CHICAGO	Tate, F.	HQ-SP	Simpson, J. A.	NGL 14-001-258	2089
99	UNIV OF CHILE	Force, C. A.	GSFC	Diaz, E.	NAS 5-1925	4027
99	UNIV OF CONNECTICUT	Bivins, R. G.	HQ-ET	Unavailable	NASW 3191	1815
99	UNIV OF DENVER	Ault, L. A.	HQ-ET	Johnson, F. D.	NASW 3113	1801
99	UNIV OF GEORGIA	Harrison, J. O	HQ-ET	Unavailable	NASW 2948	2020
99	UNIV HOUSTON-HOUSTON	Smith, M. C., Jr.	JSC	Bell, L.	NAS 9-15944	3618
99	UNIV ILLINOIS-URBANA	Palmer, E. A.	ARC	Rouse, W. B.	NSG 2119	2124
99	UNIV OF KENTUCKY	Dolby, W.	HQ-ET	Unavailable	NASW 3039	2260
99	UNIV MARYLAND-COL PK	Desjardins, R.	GSFC	Rieger, C. S.	NAS 5-25764	2345
99	UNIV MD-EASTRN SHORE	Floyd, J. C.	WFC	Smith, J. C.	NAS 6-2855	2417
99	UNIV MD-EASTRN SHORE	Oberholtzer, J. D.	WFC	Wutoh, J. G.	NSG 6006	2419
99	UNIV OF NEW MEXICO	Bivins, R. G.	HQ-ET	Unavailable	NASW 2936	2894
99	UNIV OF PITTSBURGH	Bivins, R. G.	HQ-KT	Unavailable	NASW 3042	3434
99	UNIV OF SANTA CLARA	Margozzi, A. P.	ARC	Greeley, R.	NSG 2286	1687
99	UNIV OF SOUTHERN CAL	Gilbert, R	HQ-ET	Unavailable	NASW 3009	1692
99	UNIV OF SOUTHERN CAL	Bivins, R. G.	HQ-ET	Mixer, R.	NASW 3235	1693
99	UNIV TEXAS-DALLAS	Tate, F.	HQ-SP	Johnson, F. S.	NGL 44-004-130	3702
99	VIRGINIA POLY INST	Anderson, A. F.	LARC	Unavailable	NAS 1-15080	3870
99	VIRGINIA POLY INST	DeLoach, R.	LARC	Frair, L.	NSG 1598	3905

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APPENDIX C
CROSS INDEX BY FIRST TECHNICAL OFFICER LOCATION

Technical Officers are usually located at the NASA installation funding a particular agreement. There may be a second technical officer, shown in the citation, at the same or a different installation. Abbreviations used for locations are: ARC, Ames Research Center; DFRC, Dryden Flight Research Center; GSFC, Goddard Space Flight Center; KSC, Kennedy Space Center, JSC, Johnson Space Center; LARC, Langley Research Center; LERC, Lewis Research Center; MSFC, Marshall Space Flight Center; NSTL, National Space Technology Laboratories; WFC, Wallops Flight Center and HQ, Headquarters. The HQ designator carries suffixed letters identifying individual Headquarters offices; an explanation of these identifiers and full addresses for all installations may be found in the prefatory pages. The key for the "Field Code" column is in Appendix B.

TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Buell, D. A.	ADELPHI UNIVERSITY	NSG 2088	Steinmetz, W. J.	12	2903
ARC	Black, D. C.	ARIZONA STATE UNIV	NCA 2-35802	Greeley, R.	32	1075
ARC	Pollack, J. B.	ARIZONA STATE UNIV	NCA 2-35901	Krinsley, D.	32	1076
ARC	Pollack, J. B.	ARIZONA STATE UNIV	NCA 2-35902	Krinsley, D.	32	1077
ARC	Black, D. C.	ARIZONA STATE UNIV	NSG 2284	Greeley, R.	19	1079
ARC	Souza, K. A.	BAYLOR COL OF MED	NAS 2-10354	Matthews, J. L.	56	3526
ARC	Hall, C. F.	BRIGHAM YOUNG UNIV	NAS 2-7358	Jones, D. E.	13	3722
ARC	Patton, R. M.	CAL MARITIME ACADEMY	NCA 2-100901	Rizza, J. P.	69	1233
ARC	Hall, C. F.	CALIF INST OF TECH	NAS 2-6556	Ingersoll, A. P.	11	1169
ARC	Haughney, L. C.	CALIF INST OF TECH	NGR 05-002-281	Werner, M. W.	11	1199
ARC	Pollack, J. B.	CALIF INST OF TECH	NSG 2283	Yung, Y. L.	31	1205
ARC	Magee, J. P.	CAL POLY ST U-S LUIS	NAS 2-10364	Grimes, J. E.	41	1234
ARC	Koenig, D. G.	CAL POLY ST U-S LUIS	NSG 2391	Hoffmann, J. A.	41	1235
ARC	Tobias, L.	CAL STATE U-FULLERTN	NCA 2-253801	Dear, R. G.	22	1240
ARC	Boese, R. W.	CAL STATE U-FULLERTN	NCA 2-253901	Nanes, R.	13	1241
ARC	Greenleaf, J. E.	CAL STATE U-HAYWARD	NCA 2-290801	Brown, C. H.	59	1244
ARC	Hochstein, L. I.	CAL STATE U-L ANGLES	NSG 2199	Andreoli, A. J.	51	1246
ARC	Quattrone, P. D.	CASE WESTERN RESERVE	NGR 36-027-050	Yeager, E.	12	3150
ARC	Doolin, B. F.	CASE WESTERN RESERVE	NSG 2384	Martin, C. F.	49	3154
ARC	Black, D. C.	CITY COLLEGE OF N Y	NSG 2348	Yuan, C.	11	2911
ARC	Whitten, R. C.	CLARK COLLEGE	NSG 2143	Veluri, V. R.	12	1969
ARC	Murphy, J. D.	COLORADO STATE UNIV	NCA 2-165901	Prenter, P. M.	21	1716
ARC	Holton, E. M.	COLORADO STATE UNIV	NSG 2232	Jordan, J. P.	51	1723
ARC	McKenzie, R. L.	COLORADO STATE UNIV	NSG 2287	She, C. Y.	13	1724
ARC	Pollack, J. B.	CORNELL UNIVERSITY	NCA 2-175801	Burns, J. A.	11	2953
ARC	Haughney, L. C.	CORNELL UNIVERSITY	NGR 33-010-081	Houck, J. R.	11	2959
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-146	Harwit, M. O.	11	2962
ARC	Cameron, R. M.	CORNELL UNIVERSITY	NGR 33-010-182	Houck, J. R.	11	2964
ARC	Yu, Y. H.	CORNELL UNIVERSITY	NSG 2331	George, A. R.	41	2970
ARC	Haughney, L. C.	CORNELL UNIVERSITY	NSG 2347	Harwit, M. O.	11	2971
ARC	Schmitz, F. H.	CORNELL UNIVERSITY	NSG 2360	George, A. R.	41	2972
ARC	Chapman, G. T.	CORNELL UNIVERSITY	NSG 2382	Lumley, J. L.	41	2973
ARC	McCreight, C. R.	CORNELL UNIVERSITY	NSG 2389	Lee, C. A.	45	2974
ARC	Nelson, H. G.	CORNELL UNIVERSITY	NSG 2399	Johnson, H. H.	47	2975
ARC	Wydeven, T. J.	CORNELL UNIVERSITY	NSG 2408	Shuler, M. L.	39	2976
ARC	Keil, L. C.	CORNELL UNIV-MED CTR	NSG 2259	Reis, D. J.	59	2996
ARC	Cooper, D. M.	DARTMOUTH COLLEGE	NSG 2397	Christy, R. W.	13	2813
ARC	Brooks, W. F.	DREXEL UNIVERSITY	NSG 2357	Acquista, C. A.	13	3353
ARC	Holton, E. M.	EMORY UNIVERSITY	NGL 11-001-009	Popovic, V. P.	51	1971
ARC	Sandler, H.	EMORY UNIVERSITY	NGR 11-001-016	King, F. A.	56	1972

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Daunton, N. G.	EMORY UNIVERSITY	NGR 11-001-045	Perachio, A. A.	59	1973
ARC	Winget, C. M.	FLORIDA A&M UNIV	NCA 2-230701	Walker, C. A.	61	1908
ARC	Winget, C. M.	FLORIDA A&M UNIV	NSG 2029	Stronach, C. E.	59	1910
ARC	Winget, C. M.	FLORIDA A&M UNIV	NSG 2183	Soliman, K. F.	59	1911
ARC	Klein, H. P.	FLORIDA A&M UNIV	NSG 2311	Tolbert, M. E.	51	1912
ARC	Young, R. E.	GEORGIA INST OF TECH	NCC 2 9	Alyea, F. N.	31	1991
ARC	Ragent, B.	GEORGIA INST OF TECH	NSG 2306	Grams, G. W.	31	1996
ARC	MacElroy, R. D.	GEORGIA INST OF TECH	NSG 2323	Carden, J. L.	59	1997
ARC	Vykukal, H. C.	GEORGIA INST OF TECH	NSG 2356	Olson, L. H.	49	1998
ARC	Pollack, J. B.	GEORGIA INST OF TECH	NSG 2363	Grams, G. W.	31	1999
ARC	Hall, C. F.	HARVARD UNIVERSITY	NAS 2-9127	Goody, R. M.	11	2442
ARC	Hall, C. F.	HARVARD UNIVERSITY	NAS 2-10249	McElroy, M. B.	42	2443
ARC	Doolin, B. F.	HARVARD UNIVERSITY	NSG 2265	Brockett, R. W.	41	2461
ARC	Luebs, A. B.	HARVEY MUDD COLLEGE	NCA 2-283801	Williams, H.	41	1256
ARC	Sandler, H.	HOWARD UNIVERSITY	NGL 09-011-017	Cothran, L. N.	56	1882
ARC	Norman, S. M.	HUMBOLDT STATE UNIV	NSG 2341	Fox, L.	39	1258
ARC	Pollack, J. B.	IOWA STATE UNIV	NCA 2-340802	Iversen, J. D.	49	2184
ARC	Presley, L. L.	IOWA STATE UNIV	NCA 2-340901	Cook, W. J.	46	2185
ARC	Pollack, J. B.	IOWA STATE UNIV	NCA 2-340902	Grossman, A. S.	13	2186
ARC	Hicks, R. M.	IOWA STATE UNIV	NCC 2 19	Vogel, J. M.	41	2188
ARC	Rakich, J. V.	IOWA STATE UNIV	NGR 16-002-038	Tannehill, J. C.	41	2190
ARC	Malcolm, G. N.	IOWA STATE UNIV	NSG 2091	James, W. D.	41	2196
ARC	Olson, L. E.	IOWA STATE UNIV	NSG 2257	James, W. D.	41	2197
ARC	Sebesta, P. D.	JOHNS HOPKINS UNIV	NAS 2-9300	Ray, G. C.	59	2302
ARC	Patton, R. M.	JOHNS HOPKINS UNIV	NGR 21-001-111	Brady, J. V.	62	2315
ARC	Rubesin, M. W.	JOHNS HOPKINS UNIV	NSG 2303	Corrsin, S.	41	2317
ARC	Quattrone, P. D.	KENT STATE UNIV-KENT	NSG 2013	Madey, R.	12	3200
ARC	Boese, R. W.	LEHIGH UNIVERSITY	NCA 2-380901	Lovejoy, R. W.	12	3363
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9473	Pettingill, G. H.	11	2489
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9476	Counselman, C. C., III	11	2490
ARC	Hall, C. F.	MASS INST OF TECH	NAS 2-9483	Shapiro, I. I.	11	2491
ARC	MacElroy, R. D.	MASS INST OF TECH	NCA 2-425801	Rich, A.	51	2516
ARC	Doolin, B. F.	MASS INST OF TECH	NGL 22-009-124	Athans, M.	49	2522
ARC	Daunton, N. G.	MASS INST OF TECH	NGL 22-009-308	Held, R. M.	69	2523
ARC	Winget, C. M.	MASS INST OF TECH	NGR 22-009-627	Wurtman, R. J.	56	2534
ARC	Quattrone, P. D.	MASS INST OF TECH	NGR 22-009-723	Reid, R. C.	12	2537
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-798	Bizzi, E.	51	2540
ARC	Daunton, N. G.	MASS INST OF TECH	NGR 22-009-826	Nauta, W. J.	51	2541
ARC	Poppoff, L. G.	MASS INST OF TECH	NSG 2010	Prinn, R. G.	31	2555
ARC	Daunton, N. G.	MASS INST OF TECH	NSG 2032	Vogel, F. L.	59	2556
ARC	Wempe, T. E.	MASS INST OF TECH	NSG 2118	Sheridan, T. B.	99	2557
ARC	Johnson, W. R.	MASS INST OF TECH	NSG 2142	Widnall, S. E.	41	2558
ARC	Haughney, L. C.	MASS INST OF TECH	NSG 2172	Kleinman, S. G.	11	2559
ARC	Wempe, T. E.	MASS INST OF TECH	NSG 2180	Athans, M.	99	2560
ARC	Poppoff, L. G.	MASS INST OF TECH	NSG 2196	Alyea, F. N.	31	2561
ARC	Stewart, J. D.	MASS INST OF TECH	NSG 2230	Young, L. R.	49	2562
ARC	Haughney, L. C.	MASS INST OF TECH	NSG 2263	Wright, E. L.	11	2563
ARC	Johnson, W. R.	MASS INST OF TECH	NSG 2266	Ham, N. D.	41	2564
ARC	Quattrone, P. D.	MASS INST OF TECH	NSG 2334	Karel, M.	59	2565
ARC	Quattrone, P. D.	MASS INST OF TECH	NSG 2335	Meissner, H. P.	59	2566
ARC	Haughney, L. C.	MASS INST OF TECH	NSG 2342	Elliot, J. L.	11	2567
ARC	Quattrone, P. D.	MASS INST OF TECH	NSG 2403	Modell, M.	59	2568
ARC	Warming, R. F.	NEW YORK UNIVERSITY	NCA 2-525901	Harten, A.	21	2999
ARC	Hicks, R. M.	NEW YORK UNIVERSITY	NGR 33-016-201	Garabedian, P. R.	41	3002
ARC	Anderson, J. L.	NORTHWESTERN UNIV	NSG 2149	Spencer, F. A.	41	2068
ARC	Anderson, J. L.	NORTHWESTERN UNIV	NSG 2328	Spencer, F. A.	41	2069
ARC	Lauber, J. K.	OHIO STATE UNIV	NAS 2-10047	Rockwell, T. H.	69	3210
ARC	Holst, T. L.	OHIO STATE UNIV	NCA 2-565901	Nakamura, S.	41	3215

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ARC	Billingham, J.	OHIO STATE UNIV	NSG 2162	Kraus, J. D.	45	3225
ARC	Boese, R. W.	OHIO STATE UNIV	NSG 2175	Rao, K. N.	13	3226
ARC	Dunn, R. S.	OHIO STATE UNIV	NSG 2179	Jagacinski, R. J.	69	3227
ARC	Mehler, W. R.	OHIO STATE UNIV	NSG 2220	Lim, D. J.	51	3228
ARC	McDevitt, J. B.	OHIO STATE UNIV	NSG 2298	Petrie, S. L.	41	3229
ARC	Miller, S. A.	OKLAHOMA STATE UNIV	NAS 2-9877	Wiggins, K. E.	99	3297
ARC	Steinle, F. W., Jr.	OKLAHOMA STATE UNIV	NSG 2396	Moretti, P. M.	41	3301
ARC	Wilson, D. E.	OREGON STATE UNIV	NCA 2-586901	Murray, R. J.	21	3321
ARC	Keil, L. C.	PA ST U-HERSHEY MED	NSG 2122	Severs, W. B.	56	3374
ARC	Fewell, L. L.	PENN STATE U-UNIV PK	NSG 2364	Allcock, H. R.	12	3398
ARC	Fohlen, G. M.	POLY INST OF NY	NSG 2147	Pearce, E. M.	12	3020
ARC	Fohlen, G. M.	POLY INST OF NY	NSG 2361	Pearce, E. M.	12	3021
ARC	Schmitz, F. H.	POLY INST OF NY	NSG 2368	Isom, M.	41	3022
ARC	Gilbreath, W. P.	PRINCETON UNIVERSITY	NSG 2062	O'Neill, G. K.	99	2852
ARC	Davis, S. S.	PRINCETON UNIVERSITY	NSG 2194	Dowell, E. H.	41	2853
ARC	Horstman, C. C.	PRINCETON UNIVERSITY	NSG 2299	Bogdonoff, S M.	41	2854
ARC	McKenzie, R. L.	PRINCETON UNIVERSITY	NSG 2366	Miles, R. B.	13	2855
ARC	Gregory, T. J.	PURDUE UNIVERSITY	NSG 2192	Anderson, D C.	41	2159
ARC	Zeitman, B. B.	PURDUE UNIVERSITY	NSG 2401	Hoff, J. E	59	2160
ARC	Goldwater, D.	QUEENSBOROUGH COMM C	NCA 2-625902	Yuster, R.	56	3026
ARC	Daunton, N. G.	ROCKEFELLER UNIV	NSG 2380	Wilson, V J.	51	3047
ARC	Barnes, A.	SAN FRAN STATE UNIV	NCA 2-660806	Kilpatrick, T	13	1263
ARC	Tomberlin, K. A.	SAN FRAN STATE UNIV	NCA 2-660901	Eisenberg, ! .	99	1264
ARC	Lawless, J. G.	SAN FRAN STATE UNIV	NCA 2-660902	Orenberg, J. B	12	1265
ARC	Stull, M. A.	SAN FRAN STATE UNIV	NSG 2210	Seeger, C. S.	99	1266
ARC	Oyama, J.	SAN FRAN STATE UNIV	NSG 2281	Kakihana, R.	59	1267
ARC	Daunton, N G.	SAN JOSE STATE UNIV	NCA 2-675801	Fox, R. A	61	1269
ARC	Daunton, N. G.	SAN JOSE STATE UNIV	NCA 2-675808	Banks, P M.	61	1270
ARC	Whitten, R. C.	SAN JOSE STATE UNIV	NCA 2-675809	Riegel, C. A.	31	1271
ARC	Oyama, V. I.	SAN JOSE STATE UNIV	NCA 2-675810	Ling, A. C.	12	1272
ARC	Chyu, W. J.	SAN JOSE STATE UNIV	NCA 2-675901	Mitchem, J.	22	1273
ARC	DuVal, R. W.	SAN JOSE STATE UNIV	NCA 2-675902	Wang, J. C.	46	1274
ARC	Winget, C. M.	SAN JOSE STATE UNIV	NCA 2-675903	Holley, D. C	51	1275
ARC	Webbon, B. W.	SAN JOSE STATE UNIV	NCA 2-675904	Kurzweil, J.	45	1276
ARC	Miquel, J.	SAN JOSE STATE UNIV	NCA 2-675906	Ballard, R. C.	51	1277
ARC	Deal, P. H.	SAN JOSE STATE UNIV	NCA 2-675907	Haight, R D.	51	1278
ARC	Polaski, L. J.	SAN JOSE STATE UNIV	NCA 2-675908	Goodman, J K.	12	1279
ARC	Klein, H. P.	SAN JOSE STATE UNIV	NCA 2-675910	Weaver, E. C	51	1280
ARC	Pollack, J. B.	SAN JOSE STATE UNIV	NCC 2 2	Riegel, C. A	31	1281
ARC	Ricciriello, S. R.	SAN JOSE STATE UNIV	NCC 2 3	Anderson, R N.	47	1282
ARC	Cagliostro, D. E.	SAN JOSE STATE UNIV	NCC 2 4	Ballard, R. C.	12	1283
ARC	S. an, P. R.	SAN JOSE STATE UNIV	NCC 2 5	Bornstein, R. D.	31	1284
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NCC 2 8	Spitze, L. A.	12	1285
ARC	Klein, H. P.	SAN JOSE STATE UNIV	NCC 2 14	Neptune, J. A.	54	1286
ARC	Young, R. E.	SAN JOSE STATE UNIV	NCC 2 17	Riegel, C A.	31	1287
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NGR 05-046-011	Spitze, L. A	12	1288
ARC	Whitten, R. C.	SAN JOSE STATE UNIV	NSG 2130	Riegel, C. A.	31	1289
ARC	Rosser, R. W.	SAN JOSE STATE UNIV	NSG 2186	Hyer, M. W.	12	1290
ARC	Fohlen, G. M.	SAN JOSE STATE UNIV	NSG 2209	Ling, A. C	12	1291
ARC	Dalton, B. P.	SAN JOSE STATE UNIV	NSG 2213	Ballard, R. C	59	1292
ARC	Wrigley, R. C.	SAN JOSE STATE UNIV	NSG 2239	Broenkow, W. W	33	1293
ARC	Stewart, J. D.	SAN JOSE STATE UNIV	NSG 2269	Clark, B.	69	1294
ARC	Heimbuch, A. H.	SAN JOSE STATE UNIV	NSG 2274	Hsu, M. T	12	1295
ARC	Nishioka, K.	SAN JOSE STATE UNIV	NSG 2305	Ling, A. C	39	1296
ARC	Mansfield, J. A.	SAN JOSE STATE UNIV	NSG 2307	Holmstrom, F.	46	1297
ARC	Woeller, F. H.	SAN JOSE STATE UNIV	NSG 2315	Mayer, L. A	31	1298
ARC	Fish, R. H.	SAN JOSE STATE UNIV	NSG 2332	Anderson, R N.	47	1299
ARC	Suri, K. P.	SAN JOSE STATE UNIV	NSG 2339	Fox, R A.	61	1300

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ARC	Golub, M. A.	SAN JOSE STATE UNIV	NSG 2353	Ling, A. C.	12	1301
ARC	Wydeven, T. J.	SAN JOSE STATE UNIV	NSG 2355	Sree Horsha, K. S.	12	1302
ARC	Fish, R. H.	SAN JOSE STATE UNIV	NSG 2371	Mayer, L. A.	12	1303
ARC	Johnson, R. D.	SAN JOSE STATE UNIV	NSG 2398	Funk, G. A.	39	1304
ARC	Marvin, J. G.	SOUTHERN METHODIST U	NSG 2354	Simpson, R. L.	42	3567
ARC	Sandler, H.	SO UNIV-BATON ROUGE	NSG 2041	Ray, G.	59	2281
ARC	Barnett, R. M.	STANFORD UNIVERSITY	NAS 2-8898	Pederson, C. A.	75	1306
ARC	Lomax, H.	STANFORD UNIVERSITY	NCA 2-745001	Shevell, R. S.	41	1324
ARC	Holton, E. M.	STANFORD UNIVERSITY	NCA 2-745709	Feldman, D.	56	1325
ARC	Holton, E. M.	STANFORD UNIVERSITY	NCA 2-745802	Feldman, D.	56	1326
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NCA 2-745803	Spicer, W. E.	47	1327
ARC	Poppa, H. R.	STANFORD UNIVERSITY	NCA 2-745901	Heineman, K. H.	47	1328
ARC	Lawless, J. G.	STANFORD UNIVERSITY	NCA 2-745902	Loew, G. H.	59	1329
ARC	Romiez, M. P.	STANFORD UNIVERSITY	NCA 2-745903	VanCleemput, W. M.	21	1330
ARC	MacElroy, R. D.	STANFORD UNIVERSITY	NCA 2-745905	Loew, G. H.	51	1331
ARC	Leonard, A.	STANFORD UNIVERSITY	NCA 2-745906	Buneman, O.	45	1332
ARC	Silverman, M. P.	STANFORD UNIVERSITY	NCA 2-745907	Young, L. Y.	59	1333
ARC	Poppa, H. R.	STANFORD UNIVERSITY	NCA 2-745908	Boudart, M.	43	1334
ARC	Lomax, H.	STANFORD UNIVERSITY	NCA 2-745909	VanDyke, M. D.	21	1335
ARC	Hofman, L. B.	STANFORD UNIVERSITY	NCA 2-745910	Peterson, A. M.	39	1336
ARC	Goldwater, D.	STANFORD UNIVERSITY	NCA 2-745911	Debusk, R. F.	51	1337
ARC	Lomax, H.	STANFORD UNIVERSITY	NCA 2-745912	Golub, G H.	21	1338
ARC	Sandler, H.	STANFORD UNIVERSITY	NCC 2 1	Popp, R.	56	1339
ARC	Park, C. G.	STANFORD UNIVERSITY	NCC 2 10	Bershader, D.	42	1340
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NCC 2 13	Karamcheti, K.	41	1341
ARC	Rubesin, M. W.	STANFORD UNIVERSITY	NCC 2 15	Reynolds, W. C.	19	1342
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NCC 2 18	Karamcheti, K.	41	1343
ARC	Carr, L. W.	STANFORD UNIVERSITY	NCC 2 21	Reynolds, W. C.	41	1344
ARC	Erzberger, H.	STANFORD UNIVERSITY	NGL 05-020-007	Bryson, A. E., Jr.	49	1345
ARC	Sandler, H.	STANFORD UNIVERSITY	NGL 05-020-305	Harrison, D. C.	56	1352
ARC	Mehler, W. R.	STANFORD UNIVERSITY	NGR 05-020-435	Chow, K. L.	59	1356
ARC	Keil, L. C.	STANFORD UNIVERSITY	NGR 05-020-456	Luetscher, J. A.	56	1358
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-615	Meindl, J. D.	56	1360
ARC	Rubesin, M. W.	STANFORD UNIVERSITY	NGR 05-020-622	Reynolds, W. C.	47	1361
ARC	Sandler, H.	STANFORD UNIVERSITY	NGR 05-020-634	Harrison, D. C.	56	1362
ARC	Carle, G. C.	STANFORD UNIVERSITY	NGR 05-020-690	Angell, J.	56	1365
ARC	Goldstein, H. E.	STANFORD UNIVERSITY	NGR 05-020-710	Bates, C. W.	46	1366
ARC	Snyder, C. T.	STANFORD UNIVERSITY	NSG 2007	Karamcheti, K.	19	1371
ARC	Howe, J. T.	STANFORD UNIVERSITY	NSG 2085	Rana, D. S	42	1372
ARC	Young, D. R.	STANFORD UNIVERSITY	NSG 2092	Steele, C. R.	56	1373
ARC	Franklin, J. A.	STANFORD UNIVERSITY	NSG 2100	Debra, D. B.	41	1374
ARC	Billingham, J.	STANFORD UNIVERSITY	NSG 2121	Peterson, A. M.	49	1375
ARC	Galloway, T. L.	STANFORD UNIVERSITY	NSG 2190	Shevell, R. S.	41	1376
ARC	Belsley, S. E.	STANFORD UNIVERSITY	NSG 2203	Dajani, J. R.	41	1377
ARC	Hickey, D. H.	STANFORD UNIVERSITY	NSG 2215	Karamcheti, K.	41	1378
ARC	Davis, S. S.	STANFORD UNIVERSITY	NSG 2233	Karamcheti, K.	41	1379
ARC	Lorell, K. R.	STANFORD UNIVERSITY	NSG 2246	Powell, J. D.	49	1380
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NSG 2249	Heinemann, K. H.	13	1381
ARC	Stallcop, J. R.	STANFORD UNIVERSITY	NSG 2251	Pound, G. M.	47	1382
ARC	Schmitz, F. H.	STANFORD UNIVERSITY	NSG 2254	Karamcheti, K.	39	1383
ARC	McCroskey, W. J.	STANFORD UNIVERSITY	NSG 2258	Reynolds, W. C.	41	1384
ARC	Whiting, E. E.	STANFORD UNIVERSITY	NSG 2285	Heinemann, K. H.	13	1385
ARC	McKenzie, R. L.	STANFORD UNIVERSITY	NSG 2289	Byer, R. L.	13	1386
ARC	Billman, K. W.	STANFORD UNIVERSITY	NSG 2292	Pantell, R. H.	13	1387
ARC	Sandler, H.	STANFORD UNIVERSITY	NSG 2294	Harrison, D. C.	56	1388
ARC	Nagel, D. C.	STANFORD UNIVERSITY	NSG 2297	Karamcheti, K.	41	1389
ARC	Chapman, G.	STANFORD UNIVERSITY	NSG 2308	Karamcheti, K.	41	1390
APC	Fewell, L. L.	STANFORD UNIVERSITY	NSG 2346	Baytes, C. W.	46	1391

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ARC	Ciffone, D. L.	STANFORD UNIVERSITY	NSG 2359	Ashley, H.	41	1392
ARC	Tauber, M.	STANFORD UNIVERSITY	NSG 2370	Karamcheti, K.	41	1393
ARC	Chackerian, C., Jr.	STANFORD UNIVERSITY	NSG 2372	Byer, R. L.	13	1394
ARC	Chapman, G. T.	STANFORD UNIVERSITY	NSG 2392	Cantwell, B.	41	1395
ARC	Mosher, M.	STANFORD UNIVERSITY	NSG 2393	Karamcheti, K.	69	1396
ARC	Franklin, J. A.	STANFORD UNIVERSITY	NSG 2400	Debra, D. B.	41	1397
ARC	Page, W. A.	STATE UNIV NY-ALBANY	NSG 2386	Lazrus, A. L.	31	3053
ARC	Souza, K. A.	STATE U NY-STONY BRK	NAS 2-10150	Krikorian, A. D.	51	3065
ARC	Boese, R. W.	STATE U NY-STONY BRK	NCA 2-760801	Boudart, M.	19	3067
ARC	Chang, S.	STATE U NY-STONY BRK	NCA 2-760901	Owen, T.	12	3068
ARC	Leon, H. A.	ST U NY-UPST MED CTR	NCA 2-765801	Landaw, S. A.	56	3090
ARC	Goldwater, D.	SWARTHMORE COLLEGE	NCA 2-769901	Aburdene, M. F.	56	3421
ARC	Whitten, R. C.	TALLADEGA COLLEGE	NSG 2217	Morrison, R. A.	13	1028
ARC	Gambucci, B. J.	TEXAS A&M UNIVERSITY	NAS 2-10272	Brusse, J. C.	41	3568
ARC	Wong, J. T.	TEXAS A&M UNIVERSITY	NSG 2226	Phillips, D. T.	41	3597
ARC	Holton, E. M.	TEXAS TECH UNIV	NSG 2137	Kenny, A. D.	56	3608
ARC	Palmer, F. A.	TUFTS UNIVERSITY	NCA 2-785801	Chechile, R. A.	69	2609
ARC	Wempe, T. E.	TUFTS UNIVERSITY	NSG 2156	Kreifeldt, J. G.	99	2610
ARC	MacElroy, R. D.	TULANE UNIVERSITY	NCA 2-800801	Johnson, E. J.	51	2286
ARC	Mehler, W. R.	TULANE UNIVERSITY	NSG 2139	Brizzee, K. R.	59	2287
ARC	Philpott, D. E.	TUSKEGEE INSTITUTE	NCC 2 12	Sapp, W. J.	54	1030
ARC	Lumb, D. R.	UNIV ALASKA-FAIRBNKS	NCA 2-20901	Krebs, P. V.	39	1062
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-6265	Gehrels, A. M.	11	1092
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-9486	Tomasko, M. G.	11	1093
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-9487	Barnes, C. H., Jr.	31	1094
ARC	Hall, C. F.	UNIV OF ARIZONA	NAS 2-10089	Baker, L. R.	22	1095
ARC	McCreight, C. R.	UNIV OF ARIZONA	NAS 2-10227	Rieke, G. H.	11	1096
ARC	Haughney, L. C.	UNIV OF ARIZONA	NGR 03-002-332	Larson, H. P.	11	1120
ARC	Haughney, L. C.	UNIV OF ARIZONA	NGR 03-002-390	Harvey, P. M.	11	1124
ARC	Ballhaus, W. F.	UNIV OF ARIZONA	NSG 2112	Seebass, A. R.	41	1125
ARC	Black, D. C.	UNIV OF ARIZONA	NSG 2205	Serkowski, K. M.	11	1126
ARC	Murphy, J. P.	UNIV OF ARIZONA	NSG 2349	Fink, U. W.	31	1127
ARC	Mandel, A. D.	UNIV OF ARIZONA	NSG 2381	Meinke, W. J.	56	1128
ARC	Ragent, B.	UNIV ARKANSAS-FAYETV	NGL 04-001-007	Broecker, W. S.	41	1165
ARC	Altman, R. L.	UNIV CALIF-BERKELEY	NCA 2-50001	Goren, S. L.	12	1428
ARC	Linlor, W. I.	UNIV CALIF-BERKELEY	NCA 2-50704	Angelakos, D. J.	39	1429
ARC	Poppa, H. R.	UNIV CALIF-BERKELEY	NCA 2-50705	Angelakos, D. J.	13	1430
ARC	MacElroy, R. D.	UNIV CALIF-BERKELEY	NCA 2-50710	Spear, R.	59	1431
ARC	Lanyi, J. K.	UNIV CALIF-BERKELEY	NCA 2-50801	Packer, L.	51	1432
ARC	Cowings, P. S.	UNIV CALIF-BERKELEY	NCA 2-50803	Strohman, R. C.	61	1433
ARC	Lomax, H.	UNIV CALIF-BERKELEY	NCA 2-50901	Miller, K.	21	1434
ARC	Norman, S. M.	UNIV CALIF-BERKELEY	NCA 2-50903	Colwell, R. N.	39	1435
ARC	Erickson, E. F.	UNIV CALIF-BERKELEY	NCA 2-50904	Silk, J. I.	11	1436
ARC	Altman, R. L.	UNIV CALIF-BERKELEY	NCA 2-50905	Williams, M. C.	12	1437
ARC	Lee, G.	UNIV CALIF-BERKELEY	NGR 05-003-451	Holt, M.	41	1448
ARC	Tanner, T. A.	UNIV CALIF-BERKELEY	NGR 05-003-471	LaPorte, T. R.	79	1451
ARC	Haughney, L. C.	UNIV CALIF-BERKELEY	NGR 05-003-511	Townes, C. H.	11	1452
ARC	Williams, L. J.	UNIV CALIF-BERKELEY	NSG 2127	Kanafani, A.	41	1457
ARC	Billman, K. W.	UNIV CALIF-BERKELEY	NSG 2151	Gustafson, K. T.	13	1458
ARC	Bauer, E.	UNIV CALIF-BERKELEY	NSG 2207	Colwell, R. N.	39	1459
ARC	Stull, M. A.	UNIV CALIF-BERKELEY	NSG 2271	Welch, W. J.	59	1460
ARC	Haughney, L. C.	UNIV CALIF-BERKELEY	NSG 2344	Smoot, G. F.	11	1461
ARC	Hansen, C. F.	UNIV CALIF-DAVIS	NAS 2-10258	Fong, C. Y.	13	1482
ARC	Greenleaf, J. E.	UNIV CALIF-DAVIS	NCA 2-180703	Rizza, J. P.	56	1485
ARC	Connors, M. M.	UNIV CALIF-DAVIS	NCA 2-180803	Harrison, A. A.	79	1486
ARC	Millard, J. P.	UNIV CALIF-DAVIS	NCA 2-180901	Hatfield, J. L.	31	1487
ARC	Pollack, J. B.	UNIV CALIF-DAVIS	NCA 2-180903	White, B. R.	46	1488
ARC	Winget, C. M.	UNIV CALIF-DAVIS	NCA 2-180905	Chapman, L. F.	51	1489

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ARC	Cagliostro, D. E.	UNIV CALIF-DAVIS	NCC 2 20	Needles, H. L.	12	1490
ARC	Marvin, J. G.	UNIV CALIF-DAVIS	NSG 2256	Launder, B.	41	1491
ARC	Arnold, J. O.	UNIV CALIF-DAVIS	NSG 2383	Fong, C. Y.	13	1492
ARC	Merek, E. L.	UNIV CALIF-DAVIS	NSG 2406	Huffaker, R. C.	51	1493
ARC	Glazer, J. H.	HASTINGS COL OF LAW	NCA 2-280801	Wolcott, T.	99	1257
ARC	Mandel, A. D.	UNIV CALIF-IRVINE	NGR 05-041-012	Tilles, J. G.	56	1497
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9128	Kaula, W. H	11	1501
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9131	Schubert, G.	11	1502
ARC	Hall, C. F.	UNIV CALIF-L ANGELES	NAS 2-9491	Russell, C. T.	31	1503
ARC	Ellis, S.	UNIV CALIF-L ANGELES	NCA 2-390801	Parlow, A.	61	1510
ARC	Goldstein, H. E.	UNIV CALIF-L ANGELES	NCA 2-390803	MacKenzie, J. D.	47	1511
ARC	Goldstein, H. E.	UNIV CALIF-L ANGELES	NCA 2-390901	Ono, K.	47	1512
ARC	Altman, R. L.	UNIV CALIF-L ANGELES	NCA 2-390903	Knuth, E. L.	12	1513
ARC	Riccitiello, S. R.	UNIV CALIF-L ANGELES	NCC 2 7	MacKenzie, J. D.	47	1514
ARC	Daunton, N. G.	UNIV CALIF-L ANGELES	NGR 05-007-418	Markham, C. H.	54	1527
ARC	Ahtye, W. F.	UNIV CALIF-L ANGELES	NSG 2290	Meecham, W. C.	41	1530
ARC	Riccitiello, S. R.	UNIV CALIF-L ANGELES	NSG 2321	MacKenzie, J. D.	19	1531
ARC	Hall, C. F.	UNIV CALIF-SAN DIEGO	NAS 2-6552	Fillius, R. W.	11	1568
ARC	Greenleaf, J. E.	UNIV CALIF-SAN DIEGO	NGL 05-009-109	West, J. B.	56	1589
ARC	Haughney, L. C.	UNIV CALIF-SAN DIEGO	NGR 05-005-055	Willner, S. P.	11	1593
ARC	Sandler, H.	UNIV CALIF-SAN DIEGO	NGR 05-009-257	Baily, N. A.	56	1597
ARC	Rubesin, M. W.	UNIV CALIF-SAN DIEGO	NSG 2376	Rosenblatt, M.	19	1601
ARC	Souza, K. A.	UNIV CALIF-SAN FRAN	NAS 2-10162	Arnaud, C. D.	51	1624
ARC	Souza, K. A.	UNIV CALIF-SAN FRAN	NAS 2-10164	Arnaud, C. D.	51	1625
ARC	Souza, K. A.	UNIV CALIF-SAN FRAN	NAS 2-10350	Cann, C. E.	59	1626
ARC	Feller, D. D.	UNIV CALIF-SAN FRAN	NCA 2-665801	Searle, G. L.	59	1628
ARC	Mehler, W. R.	UNIV CALIF-SAN FRAN	NCA 2-665802	Snyder, R. L.	51	1629
ARC	Callahan, P. X.	UNIV CALIF-SAN FRAN	NCA 2-665803	Asling, C. W.	56	1630
ARC	Keil, L. C.	UNIV CALIF-SAN FRAN	NCA 2-665806	Dallman, M. F.	59	1631
ARC	Keil, L. C.	UNIV CALIF-SAN FRAN	NCA 2-665807	Ramsay, D. J.	56	1632
ARC	Cowings, P. S.	UNIV CALIF-SAN FRAN	NCA 2-665810	Kamiya, J.	61	1633
ARC	Ellis, S.	UNIV CALIF-SAN FRAN	NCA 2-665901	Riley, D. A.	51	1634
ARC	Holton, E M.	UNIV CALIF-SAN FRAN	NCA 2-665902	Arnaud, C. D.	51	1635
ARC	Ellis, S.	UNIV CALIF-SAN FRAN	NCA 2-665903	Riley, D. A.	51	1636
ARC	Cowings, P. S.	UNIV CALIF-SAN FRAN	NCA 2-665904	Kamiya, J.	69	1637
ARC	Sandler, H.	UNIV CALIF-SAN FRAN	NCA 2-665905	Glantz, S. A.	56	1638
ARC	Cassen, P.	UNIV CALIF-S BARBARA	NCA 2-680805	Glantz, S. A.	13	1641
ARC	Norman, S M.	UNIV CALIF-S BARBARA	NCA 2-680901	Estes, J. E.	39	1642
ARC	Norman, S. M.	UNIV CALIF-S BARBARA	NCA 2-680902	Estes, J. E.	39	1643
ARC	Jones, H.	UNIV CALIF-S BARBARA	NCA 2-680903	Estes, J. E.	39	1644
ARC	Brooks, W. F.	UNIV CALIF-S BARBARA	NCC 2 11	Vanyo, J. P.	13	1645
ARC	Nelson, H. G.	UNIV CALIF-S BARBARA	NSG 2222	Shanabarger, M R.	47	1649
ARC	Jones, H.	UNIV CALIF-S BARBARA	NSG 2358	Estes, J. E.	39	1650
ARC	Peterson, D.	UNIV CALIF-S BARBARA	NSG 2377	Estes, J. E.	39	1651
ARC	Hall, C. F.	UNIV OF CHICAGO	NAS 2-6551	Simpson, J. A.	11	2074
ARC	Erickson, E. F.	UNIV OF CHICAGO	NCA 2-108901	Harper, D. A., Jr.	11	2080
ARC	Smith, B. F.	UNIV OF CHICAGO	NCA 2-108902	Miller, R. H.	11	2081
ARC	Daunton, N. G.	UNIV OF CHICAGO	NGR 14-001-225	Goldberg, J. M.	51	2094
ARC	Haughney, L. C.	UNIV OF CHICAGO	NGR 14-001-227	Harper, D. A., Jr.	11	2095
ARC	Erzberger, H.	UNIV OF CINCINNATI	NCA 2-130801	Slater, G. L.	41	3246
ARC	Rakich, J. V.	UNIV OF CINCINNATI	NCA 2-130901	Davis, R. T.	41	3247
ARC	Hall, C. F.	UNIV COLORADO-BOLDR	NAS 2-9477	Stewart, I. A.	19	1741
ARC	Whitten, R. C.	UNIV COLORADO-BOLDR	NSG 2248	Castleman, A. W.	12	1762
ARC	Kourtides, D. A.	UNIV OF DAYTON	NSG 2373	Salyer, I. O.	12	3267
ARC	Kourtides, D. A.	UNIV OF DAYTON	NSG 2374	Salyer, I. O.	12	3268
ARC	Munoz, R. M.	UNIV OF DENVER	NAS 2-10158	Murcray, D G.	31	1797
ARC	Valero, F. P.	UNIV OF DENVER	NCA 2-205901	Bonomo, F.	12	1802
ARC	Wilhelmi, A. J.	UNIV OF FLORIDA	NAS 2-9976	Lanzerotti, L. J.	31	1926

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ARC	Malcolm, G. N.	UNIV OF FLORIDA	NSG 2120	Clarkson, M. H.	41	1944
ARC	Aoyagi, K.	UNIV OF FLORIDA	NSG 2288	Fearn, R. L.	41	1945
ARC	Tremor, J. W.	UNIV HOUSTON-HOUSTON	NAS 2-10087	Cowles, J. R.	59	3610
ARC	Uiegas, J. R.	UNIV HOUSTON-HOUSTON	NSG 2337	Hussain, A. K.	47	3625
ARC	Rosser, R. W.	UNIV OF IDAHO	NSG 2367	Korus, R. A.	12	2058
ARC	Pollack, J. B.	UNIV ILLINOIS-CHICGO	NCA 2-330901	Cogley, A. C.	49	2109
ARC	Palmer, E. A.	UNIV ILLINOIS-URBANA	NSG 2119	Rouse, W. B.	99	2124
ARC	Hall, C. F.	UNIV OF IOWA	NAS 2-6553	VanAllen, J. A.	11	2200
ARC	Marvin, J. G.	UNIV OF IOWA	NSG 2300	Ramaprian, B. R.	41	2214
ARC	Stallcop, J. R.	UNIV OF IOWA	NSG 2327	Stwalley, W. C.	13	2215
ARC	Sandler, H.	UNIV OF KENTUCKY	NSG 2318	Knapp, C. F.	56	2262
ARC	Mandel, A. D.	UNIV OF LOUISVILLE	NCA 2-400901	Sonnenfeld, G.	56	2265
ARC	Holton, E. M.	UNIV OF LOUISVILLE	NSG 2325	Musacchia, X. J.	51	2266
ARC	Mandel, A. D.	UNIV MARYLAND-COL PK	NCA 2-420901	Goldsby, R. A.	12	2353
ARC	Giver, L. P.	UNIV MARYLAND-COL PK	NCA 2-420902	Khanna, R. K.	12	2354
ARC	Mandel, A. D.	UNIV MARYLAND-COL PK	NSG 2378	Goldsby, R. A.	56	2383
ARC	Hall, C. F.	UNIV OF MASS AMHERST	NAS 2-9129	McGill, G. E.	11	2612
ARC	Miquel, J.	UNIV OF MIAMI	NCA 2-438801	Ono, K.	51	1958
ARC	Hall, C. F.	UNIV MICH-ANN ARBOR	NAS 2-9126	Donahue, T. M.	11	2631
ARC	Hall, C. F.	UNIV MICH-ANN ARBOR	NAS 2-9130	Nagy, A. F.	11	2632
ARC	Feistel, T. W.	UNIV MICH-ANN ARBOR	NSG 2018	Kroeger, R. A.	41	2672
ARC	Anderson, S. B.	UNIV MICH-ANN ARBOR	NSG 2113	Kroeger, R. A.	41	2673
ARC	Fish, R. H	UNIV MICH-ANN ARBOR	NSG 2333	Springer, G. S.	49	2674
ARC	Hall, C. F.	U MINN-MNPLS-ST PAUL	NAS 2-8812	Nier, A. O.	31	2697
ARC	Webbon, B. W.	UNIV MO-COLUMBIA	NCA 2-450802	Miles, J. B.	46	2760
ARC	Quattrone, P. D.	UNIV MO-COLUMBIA	NSG 2193	Winnick, J.	59	2762
ARC	Coe, C. F.	UNIV MO-ROLLA	NCA 2-450801	Cronin, D. L.	41	2766
ARC	Shockey, G. A.	UNIV MO-ROLLA	NSG 2375	Selberg, B. P.	41	2769
ARC	Johnson, R. D.	UNIV NEVADA-DRI	NCC 2 6	Hall, M. R.	59	2807
ARC	Davis, S. S.	UNIV NEVADA-L VEGAS	NSG 2140	Fromme, J. A.	41	2808
ARC	Presley, L. L.	UNIV OF NEVADA-RENO	NSG 2291	Rose, W. C.	41	2811
ARC	Johnson, D. A.	UNIV OF NEVADA-RENO	NSG 2395	Rose, W. C.	41	2812
ARC	MacElroy, R. D.	UNIV NEW HAMP-DURHAM	NCA 2-512901	Moore, B.	21	2824
ARC	Curry, R. E.	UNIV N CAR-GRNSBORO	NSG 2390	Regan, J. E.	69	3138
ARC	Doolin, B. F.	UNIV OF NOTRE DAME	NSG 2388	Sain, M. K.	49	2177
ARC	Sandler, H.	U OKLA-HLTH SCI CTR	NSG 2282	Stone, H. L	56	3307
ARC	Sandler, H.	UNIV OKLAHOMA-NORMAN	NCA 2-580901	Stone, H. L.	51	3312
ARC	Wright, R. H.	UNIV OREGON-EUGENE	NCA 2-587801	Murray, R. J	69	3330
ARC	Hansen, C. F.	UNIV OF PENNSYLVANIA	NAS 2-10070	Rabii, S.	13	3423
ARC	Daunton, N. G.	UNIV OF PITTSBURGH	NCA 2-592901	Tomko, D. L.	51	3435
ARC	Black, D. C.	UNIV OF PITTSBURGH	NSG 2117	Goglia, G. L.	11	3441
ARC	Cooper, D. M.	UNIV OF PITTSBURGH	NSG 2407	Jordan, K. D.	13	3442
ARC	Stallcop, J. R.	UNIV OF ROCHESTER	NSG 2198	George, T. F.	13	3097
ARC	Haughney, L. C.	UNIV OF ROCHESTER	NSG 2343	Pipher, J. L.	11	3098
ARC	Souza, K. A.	UNIV SAN FRANCISCO	NAS 2-9504	Benton, E. V.	13	1663
ARC	Philpott, D. E.	UNIV SAN FRANCISCO	NAS 2-9845	Benton, E. V.	59	1664
ARC	Souza, K. A.	UNIV SAN FRANCISCO	NAS 2-10161	Benton, E. V.	59	1665
ARC	Young, D. R.	UNIV SAN FRANCISCO	NCA 2-670902	Furst, A.	51	1669
ARC	Miquel, J.	UNIV SAN FRANCISCO	NSG 2063	Benton, E. V.	51	1670
ARC	Kraft, L. M.	UNIV SAN FRANCISCO	NSG 2304	Benton, E. V.	51	1671
ARC	Greenleaf, J. E.	UNIV OF SANTA CLARA	NAS 2-9967	Pefley, R. K.	59	1672
ARC	Connors, M. M.	UNIV OF SANTA CLARA	NCA 2-685805	Akins, F.	62	1673
ARC	Chang, S.	UNIV OF SANTA CLARA	NCA 2-685806	White, D. H.	12	1674
ARC	Hochstein, L. I.	UNIV OF SANTA CLARA	NCA 2-685808	Tomlinson, G. A.	51	1675
ARC	Grindeland, R.	UNIV OF SANTA CLARA	NCA 2-685812	Fast, T.	51	1676
ARC	Mandel, A. D.	UNIV OF SANTA CLARA	NCA 2-685813	Caren, L. D.	51	1677
ARC	Lawless, J. G.	UNIV OF SANTA CLARA	NCA 2-685903	Sweeney, M. A.	12	1678
ARC	Knauer, S. C.	UNIV OF SANTA CLARA	NCA 2-685905	Danielson, R L.	22	1679

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
ARC	Whitten, R. C.	UNIV OF SANTA CLARA	NCA 2-685906	McCormick, P. T.	13	1680
ARC	Hofman, L. B.	UNIV OF SANTA CLARA	NCA 2-685907	Danielson, R. L.	21	1681
ARC	Erickson, E. F.	UNIV OF SANTA CLARA	NCA 2-685908	Fraser, G.	11	1682
ARC	Dyal, P.	UNIV OF SANTA CLARA	NCA 2-685909	Barker, W. A.	11	1683
ARC	Lomax, H.	UNIV OF SANTA CLARA	NCC 2 16	Vinokur, M.	41	1684
ARC	Oberbeck, V. R.	UNIV OF SANTA CLARA	NSG 2275	Aggarwal, H. R.	32	1686
ARC	Margozzi, A. P.	UNIV OF SANTA CLARA	NSG 2286	Greeley, R.	99	1687
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-65[illegible]	Judge, D. L.	11	1689
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-7969	Intriligator, D. S.	11	1690
ARC	Hall, C. F.	UNIV OF SOUTHERN CAL	NAS 2-9478	Intriligator, D. S.	11	1691
ARC	Jaffee, R. L.	UNIV OF SOUTHERN CAL	NSG 2351	Segal, G. A.		1700
ARC	Hruby, R. J.	UNIV STHN COLORADO	NSG 2048	Jenkins, R.		311
ARC	Steinle, F. W., Jr.	UNIV TENNESSEE-KNOXV	NCA 2-772901	Tirres, C.		309
ARC	Steinle, F. W., Jr.	UNIV TENNESSEE-KNOXV	NSG 2379	Wu, J. M.	4	3
ARC	Patton, R. M.	UNIV TEXAS-AUSTIN	NSG 2065	Frey, J.	99	3664
ARC	Ballhaus, W. F.	UNIV TEXAS-AUSTIN	NSG 2338	Carey, G. F.	41	3665
ARC	Haughney, L. C.	UNIV TEXAS-AUSTIN	NSG 2345	Evans, N. J., II	11	3666
ARC	Hall, C. F.	UNIV TEXAS-DALLAS	NAS 2-9485	Hoffman, J. H.	31	3691
ARC	Kourtides, D. A.	UNIV OF UTAH	NAS 2-10064	Hughes, B. M.	19	3723
ARC	Souza, K. A.	UNIV OF UTAH	NAS 2-10308	Jee, W. S.	51	3724
ARC	Sharp, J. C.	UNIV OF UTAH	NSG 2350	Nielson, H. C.	61	3731
ARC	Souza, K. A.	UNIV OF VIRGINIA	NAS 2-10195	Pitts, G. C.	59	3843
ARC	Holton, E. M.	UNIV OF VIRGINIA	NSG 2225	Pitts, G. C.	51	3861
ARC	Chapman, G. T.	UNIV OF WASHINGTON	NGL 48-002-047	Childs, M. E.	41	3932
ARC	Lee, G.	UNIV OF WASHINGTON	NGR 48-002-141	Childs, M. E.	41	3933
ARC	Creer, B. Y.	UNIV OF WASHINGTON	NSG 2176	Joppa, R. G.	41	3935
ARC	Young, R. E.	UNIV OF WASHINGTON	NSG 2228	Holton, J. R.	31	3936
ARC	Corsiglia, V. R.	UNIV OF WASHINGTON	NSG 2260	Joppa, R. G.	41	3937
ARC	Pollack, J. B.	UNIV OF WASHINGTON	NSG 2362	Charlson, R. J.	31	3938
ARC	Langhoff, S. R.	UNIV OF WASHINGTON	NSG 2365	Davidson, E. R.	12	3939
ARC	Holton, E. M.	UNIV OF WASHINGTON	NSG 2385	Carter, D. R.	59	3940
ARC	Hall, C. F.	UNIV WISC-MADISON	NAS 2-9480	Suomi, D. V.	31	3969
ARC	Young, D. R.	UNIV WISC-MADISON	NAS 2-10359	Mazess, R. B.	56	3970
ARC	Holton, E. M.	UNIV WISC-MADISON	NCA 2-865701	DeLuca, H. F.	51	3988
ARC	Young, D. R.	UNIV WISC-MADISON	NGR 50-002-051	Mazess, R. B.	56	3992
ARC	Mandel, A. D.	UNIV WISC-MADISON	NSG 2104	Dick, E. C.	56	3995
ARC	Zill, L. P.	UNIV WISC-MADISON	NSG 2405	Tibbitts, T. W.	51	3996
ARC	Lowenstein, M.	UTAH STATE UNIV	NAS 2-9557	Jeppesen, H.	31	3735
ARC	Nelson, H. G.	VIRGINI[illegible] POLY INST	NSG 2038	Brinson, H. F.	47	3909
ARC	Marvin, J. G.	VIRGINIA POLY INST	NSG 2301	Pierce, F. J.	41	3910
ARC	Poppa, H. R.	WASHINGTON ST UNIV	NCA 2-840801	Dickinson, J. T.	13	3961
ARC	Poppa, H. R.	WASHINGTON ST UNIV	NCA 2-840901	Dickinson, J. T.	13	3962
ARC	Souza, K. A.	WASHINGTON UNIVERSTY	NAS 2-10177	Simmons, D.	51	2778
ARC	Young, D. R.	WAYNE STATE UNIV	NSG 2008	Orne, D.	56	2695
ARC	Daunton, N. G.	WRIGHT STATE UNIV	NCA 2-875801	Crampton, G. H.	59	3292
ARC	Winget, C. M.	XAVIER UNIV-LA	NGR 19-007-004	Ashman, P. U.	51	2292
ARC	Souza, K. A.	YALE UNIVERSITY	NAS 2-10338	Baron, R.	56	1820
ARC	Mandel, A. D.	YALE UNIVERSITY	NSG 2185	Evans, A. S.	56	1825
ARC	Cooper, D. M.	YORK UNIVERSITY	NSG 7223	Nicholls, R. W.	31	4026
ARC	McKenzie, R. L.	OREGON GRADUATE CTR	NSG 2387	Elliott, R. A.	13	3316
DFRC	Ayers, T. G.	CAL POLY ST U-S LUIS	NSG 4014	Sandlin, D. R.	41	1236
DFRC	Gee, S. W.	CAL POLY ST U-S LUIS	NSG 4020	Sandlin, D. R.	41	1237
DFRC	Gee, S. W.	CAL POLY ST U-S LUIS	NSG 4022	Sandlin, D. R.	41	1238
DFRC	Kurtenbach, F. J.	NO CAROLINA STATE U	NSG 4025	Smetana, F. O.	41	3137
DFRC	Gilyard, G. B.	OKLAHOMA STATE UNIV	NSG 4018	Swain, R. L.	41	3302
DFRC	Iliff, K. W.	OREGON STATE UNIV	NSG 4013	Ruzicka, J.	41	3325
DFRC	Berry, D. T.	PURDUE UNIVERSITY	NSG 4003	Laver, J. A.	41	2171
DFRC	Edwards, J. W.	STANFORD UNIVERSITY	NSG 4002	Debra, D. B.	41	1399

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DFRC	Ehernberger, L. J.	UNIV CALIF-L ANGELES	NSG 4001	Wurtele, M. G.	31	1536
DFRC	Edwards, J. W.	UNIV CALIF-L ANGELES	NSG 4015	Seidel, B. S.	41	1537
DFRC	Ehernberger, L. J.	UNIV CALIF-L ANGELES	NSG 4024	Wurtele, M. G.	31	1538
DFRC	Jenkins, J. M.	UNIV OF KANSAS	NSG 4008	Lenzen, K. H.	41	2244
DFRC	Edwards, J. W.	UNIV OF KANSAS	NSG 4017	Kotsabasis, A.	41	2245
DFRC	Kordes, E. E.	UNIV OF KANSAS	NSG 4019	Roskam, J.	41	2246
DFRC	Saltzman, E. J.	UNIV OF KANSAS	NSG 4021	Muirhead, V. U.	49	2247
DFRC	Saltzman, E. J.	UNIV OF KANSAS	NSG 4023	Muirhead, V. U.	49	2248
DFRC	Szalai, K. J.	UNIV OF KANSAS	NSG 4026	Kelley, G. L.	45	2249
GSFC	Grebowsky, J.	ALCORN STATE UNIV	NGR 25-012-001	Paul, M. P.	31	2729
GSFC	Spencer, N. W.	AUGSBURG COLLEGE	NSG 5285	Engebretson, M. J.	31	2696
GSFC	Boggess, A.	BOSTON UNIVERSITY	NAS 5-25445	Kamp, L. W.	11	2428
GSFC	Leckrone, D. S.	BOSTON UNIVERSITY	NSG 5389	Kamp, L. W.	11	2434
GSFC	Corrigan, J. P.	BOSTON UNIVERSITY	NSG 5407	Hughes, W. J.	11	2435
GSFC	Kniffen, D. A.	BOWIE STATE COLLEGE	NGR 21-027-001	Walker, R. P	11	2295
GSFC	Lefferts, E. J.	BOWIE STATE COLLEGE	NGR 21-027-004	Srivastava, S.	21	2296
GSFC	Caruso, A. J.	BOWIE STATE COLLEGE	NGR 21-027-010	Bhatia, M. S.	13	2297
GSFC	Gross, F. C.	BOWIE STATE COLLEGE	NSG 5009	Rock, M.	12	2299
GSFC	Bailey, E.	BOWIE STATE COLLEGE	NSG 5416	Kirksey, C. H.	99	2300
GSFC	Gemmell, J. D.	CALIF INST OF TECH	NAS 5-11066	Stone, E. C.	13	1170
GSFC	Davis, M. A.	CALIF INST OF TECH	NAS 5-20721	Stone, E. C.	13	1171
GSFC	Neupert, W. M.	CALIF INST OF TECH	NAS 5-22939	Zirin, H.	11	1172
GSFC	Nelsen, E. D.	CALIF INST OF TECH	NAS 5-22965	Ingersoll, A. P	31	1173
GSFC	Wende, C. D.	CALIF INST OF TECH	NAS 5-23315	Garmire, G. P.	11	1174
GSFC	Stouffer, C. G.	CALIF INST OF TECH	NAS 5-24339	Garmire, G. P.	13	1175
GSFC	Wende, C. D.	CALIF INST OF TECH	NAS 5-25049	Garmire, G. P.	13	1176
GSFC	White, R. A.	CALIF INST OF TECH	NAS 5-25451	Westphal, J.	11	1177
GSFC	Cohen, S. C.	CALIF INST OF TECH	NCC 5 17	Melosh, H. J.	32	1184
GSFC	Bissell, E. E.	CALIF INST OF TECH	NGR 05-002-284	Garmire, G. P.	11	1200
GSFC	Kupperian, J. E., Jr.	CALIF INST OF TECH	NSG 5197	Garmire, G. P.	11	1206
GSFC	Kupperian, J. E., Jr.	CALIF INST OF TECH	NSG 5208	Neugebauer, G.	11	1207
GSFC	Allenby, R. J.	CALIF INST OF TECH	NSG 5224	Whitcomb, J. H.	32	1208
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5243	Greenstein, J. L.	11	1209
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5244	Schmidt, M.	11	1210
GSFC	Allenby, R. J.	CALIF INST OF TECH	NSG 5267	Melosh, H. J.	32	1211
GSFC	Hansen, J. E.	CALIF INST OF TECH	NSG 5301	Yung, Y. L.	31	1212
GSFC	Donley, J. L.	CALIF INST OF TECH	NSG 5314	Zirin, H.	31	1213
GSFC	Donley, J. L.	CALIF INST OF TECH	NSG 5327	Zirin, H.	31	1214
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5369	Sargent, W. L.	11	1215
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5381	Greenstein, J. L.	11	1216
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5384	Meier, D. L.	11	1217
GSFC	Boggess, A.	CALIF INST OF TECH	NSG 5385	Green, R. F	11	1218
GSFC	Greene, E. P.	CAL STATE U-NRTHRDGE	NAS 5-24436	Nathanson, W. I.	22	1249
GSFC	Donley, J. L.	CAL STATE U-NRTHRDGE	NSG 5324	Martin, S. F.	31	1251
GSFC	Donley, J. L.	CAL STATE U-NRTHRDGE	NSG 5330	Chapman, G. A.	31	1252
GSFC	Donley, J. L.	CAL STATE U-NRTHRDGE	NSG 5333	Chapman, G. A.	31	1253
GSFC	Ollendorf, S.	CASE WESTERN RESERVE	NAS 5-24144	Kamotani, Y.	46	3145
GSFC	Donn, B. D.	CASE WESTERN RESERVE	NSG 5392	Anderson, A. B.	12	3186
GSFC	Dennis, B. R.	CATHOLIC UNIVERSITY	NSG 5066	Werntz, C.	13	1840
GSFC	McAvoy, N.	CATHOLIC UNIVERSITY	NSG 5111	Kelley, G. L.	13	1841
GSFC	Payne, W. A.	CATHOLIC UNIVERSITY	NSG 5173	Hunt, J. B.	12	1842
GSFC	Canuto, V.	CITY COLLEGE OF N Y	NGL 33-013-040	Erlbach, E	11	2908
GSFC	Hansen, J. E.	CITY COLLEGE OF N Y	NGR 33-013-086	Spar, J.	31	2909
GSFC	Kahle, D. R	CITY COLLEGE OF N Y	NSG 5013	Schilling, D. L.	45	2913
GSFC	Temkin, A.	CITY U N Y-GRAD SCHL	NSG 5334	Mittleman, M. H.	13	2914
GSFC	Rodgers, E. B.	CLEMSON UNIV-CLEMSON	NSG 5349	Centry, R. C	31	3470
GSFC	Wexler, R.	CLEMSON UNIV-CLEMSON	NSG 5350	Gentry, R. C.	31	3471
GSFC	Nelsen, E. D.	COLORADO STATE UNIV	NAS 5-22959	VonderHaar, T. H.	39	1711

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GSFC	Tucker, C. J.	COLORADO STATE UNIV	NAS 5-25081	Maxwell, E. L.	39	1712
GSFC	Toll, D.	COLORADO STATE UNIV	NAS 5-25696	Maxwell, E. L.	39	1713
GSFC	Schnetzler, C. C.	COLORADO STATE UNIV	NAS 5-25760	McIver, J. L.	31	1714
GSFC	Theon, J. S.	COLORADO STATE UNIV	NGR 06-002-098	Reiter, W. R.	31	1718
GSFC	Carpenter, L. H.	COLORADO STATE UNIV	NGR 06-002-191	Thompson, E. G.	32	1721
GSFC	Neil, E. A.	COLORADO STATE UNIV	NSG 5073	Marlatt, W. E.	31	1732
GSFC	Rodgers, E. B.	COLORADO STATE UNIV	NSG 5258	VonderHaar, T. H.	31	1733
GSFC	Arking, A.	COLORADO STATE UNIV	NSG 5259	VonderHaar, T. H.	31	1734
GSFC	Arking, A.	COLORADO STATE UNIV	NSG 5340	Reiter, E. R.	31	1735
GSFC	Heymsfield, G. M.	COLORADO STATE UNIV	NSG 5341	Cotton, W. R.	31	1736
GSFC	Taylor, R. E.	COLORADO STATE UNIV	NSG 5352	Parkenson, B. W.	45	1737
GSFC	Curran, R. J.	COLORADO STATE UNIV	NSG 5357	Cox, S. K.	31	1738
GSFC	Gemmell, J. D.	COLUMBIA UNIVERSITY	NAS 5-24152	Novick, R.	11	2919
GSFC	Eiband, A. M.	COLUMBIA UNIVERSITY	NAS 5-24457	Novick, R.	11	2920
GSFC	Jennings, N.	COLUMBIA UNIVERSITY	NAS 5-25422	Yavarkovsky, J.	99	2921
GSFC	Wagner, C. A.	COLUMBIA UNIVERSITY	NCC 5 3	Watts, A. B.	32	2927
GSFC	Thaddeus, P.	COLUMBIA UNIVERSITY	NCC 5 16	Broecker, W. S.	31	2928
GSFC	Bissell, E. E.	COLUMBIA UNIVERSITY	NGR 33-008-102	Novick, R.	11	2929
GSFC	Smith, D. E.	COLUMBIA UNIVERSITY	NGR 33-008-146	Scholz, C. H.	19	2930
GSFC	Allenby, R. J.	COLUMBIA UNIVERSITY	NSG 5072	Bilham, R. G.	32	2937
GSFC	Ungar, S. G.	COLUMBIA UNIVERSITY	NSG 5080	High, C. J.	32	2938
GSFC	Thaddeus, P.	COLUMBIA UNIVERSITY	NSG 5163	Happner, W.	11	2939
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5168	Hayes, D. P.	11	2940
GSFC	Kupperian, J. E., Jr.	COLUMBIA UNIVERSITY	NSG 5200	Novick, R.	11	2941
GSFC	Labovitz, M.	COLUMBIA UNIVERSITY	NSG 5222	Kuo, J. T.	32	2942
GSFC	Smith, D. E.	COLUMBIA UNIVERSITY	NSG 5273	Talwani, M.	32	2943
GSFC	Ford, F. E.	COPPIN STATE COLLEGE	NSG 5051	McDermott, P. P.	12	2301
GSFC	Conrath, B. J.	CORNELL UNIVERSITY	NAS 5-23236	Gierasch, P. J.	13	2951
GSFC	Pirraglia, J. A.	CORNELL UNIVERSITY	NAS 5-23785	Gierasch, P. J.	31	2952
GSFC	Cohen, S. C.	CORNELL UNIVERSITY	NCC 5 2	Turcotte, D. L.	11	2954
GSFC	Allenby, R. J.	CORNELL UNIVERSITY	NCC 5 4	Oliver, J.	32	2955
GSFC	Cohen, S. C.	CORNELL UNIVERSITY	NSG 5060	Turcotte, D. L.	32	2978
GSFC	Ongar, S. G.	DARTMOUTH COLLEGE	NSG 5014	Stoiber, R. E.	39	2815
GSFC	Hansen, J. E.	DARTMOUTH COLLEGE	NSG 5145	Self, S.	31	2816
GSFC	Kupperian, J. E., Jr.	DARTMOUTH COLLEGE	NSG 5348	Sonnerup, B. U.	32	2817
GSFC	Nelsen, E. D.	DREXEL UNIVERSITY	NAS 5-22946	House, F. B.	13	3347
GSFC	Ucellini, L. W.	DREXEL UNIVERSITY	NSG 5162	Kreitzberg, C.	31	3356
GSFC	Rodriquez, G. E.	DUKE UNIVERSITY	NAS 5-25351	Wilson, T. G.	45	3104
GSFC	Rodriguez, G. E.	DUKE UNIVERSITY	NGL 34-001-001	Wilson, T. G.	45	3105
GSFC	Heath, D. F.	FAIRFIELD UNIVERSITY	NCC 5 6	McElaney, J. H.	31	1813
GSFC	Heath, D. F.	FAIRFIELD UNIVERSITY	NGR 07-010-002	McElaney, J. H.	31	1814
GSFC	Heaney, J. B.	FAIRLEIGH-DICKNSON U	NAS 5-25483	Moeller, K. D.	11	2832
GSFC	Stecker, F. W.	FISK UNIVERSITY	NSG 5297	Mickens, R. E.	13	3482
GSFC	Alterescu, S.	FLORIDA A&M UNIV	NAS 5-25165	Fresh, F. A.	56	1907
GSFC	Temkin, A.	FLORIDA A&M UNIV	NSG 5307	Jones, H. W.	13	1913
GSFC	Hobbs, R. W.	GEORGE MASON UNIV	NCA 5-92	Kafotos, M.	11	3773
GSFC	Hobbs, R. W.	GEORGE MASON UNIV	NSG 5305	Kafotos, M.	11	3774
GSFC	Boggess, A.	GEORGE MASON UNIV	NSG 5371	Kafotos, M.	11	3775
GSFC	Gull, T. R.	GEORGE MASON UNIV	NSG 5403	Kafotos, M.	11	3776
GSFC	Rende, J. V.	GEORGE WASHINGTON U	NAS 5-24431	Helgert, H. J.	45	1845
GSFC	Morakis, J. C.	GEORGE WASHINGTON U	NSG 5109	Helgert, H. J.	49	1872
GSFC	LeVine, D. M.	GEORGE WASHINGTON U	NSG 5288	Lang, R. H.	45	1873
GSFC	King, J. L.	GEORGIA INST OF TECH	NAS 5-23710	Schuchardt, J. M.	45	1982
GSFC	LeVine, D. M.	GEORGIA INST OF TECH	NAS 5-24148	Wilson, C. S.	31	1983
GSFC	Slajna, E. F.	GEORGIA INST OF TECH	NAS 5-25817	Cunnold, D. M.	39	1984
GSFC	King, J. L.	GEORGIA INST OF TECH	NSG 5012	Forsythe, R. E.	45	2007
GSFC	King, J. L.	GEORGIA INST OF TECH	NSG 5082	Dees, J. W.	31	2008
GSFC	Atlas, D.	GEORGIA INST OF TECH	NSG 5220	Metcalf, J. I.	31	2009

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GSFC	Ungar, S. G.	HUNTER COLLEGE	NSG 5325	Coiner, J. C.	32	2997
GSFC	Donley, J. L.	HARVARD UNIVERSITY	NAS 5-23494	Reeves, E. M.	31	2445
GSFC	Rice, C. F.	HARVARD UNIVERSITY	NAS 5-24134	McElroy, M. B.	31	2446
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5143	Flannery, B. P.	11	2463
GSFC	Halem, M.	HARVARD UNIVERSITY	NSG 5160	Lindzen, R. S.	31	2464
GSFC	Reed, E. I.	HARVARD UNIVERSITY	NSG 5176	Parkinson, W. H.	13	2465
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5191	Dupree, A. K.	11	2466
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5226	Dupree, A. K.	11	2467
GSFC	Halem, M.	HARVARD UNIVERSITY	NSG 5228	Robinson, A. R.	33	2468
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5229	Dupree, A. K.	11	2469
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5239	Dupree, A. K.	11	2470
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5293	Dupree, A. K.	11	2471
GSFC	Kupperian, J. E., Jr.	HARVARD UNIVERSITY	NSG 5312	Dupree, A. K.	11	2472
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5370	Dupree, A. K.	11	2473
GSFC	Boggess, A.	HARVARD UNIVERSITY	NSG 5380	Dupree, A. K.	11	2474
GSFC	Alterescu, S.	HOWARD UNIVERSITY	NAS 5-23799	Chang, P.	56	1875
GSFC	Barrowman, J. S.	HOWARD UNIVERSITY	NAS 5-24242	McElroy, M. B.	41	1876
GSFC	Hui, P. S.	HOWARD UNIVERSITY	NAS 5-24251	Choudhury, A. K.	49	1877
GSFC	Hayes, J. M.	HOWARD UNIVERSITY	NAS 5-24422	Bords, G.	46	1878
GSFC	O'Keefe, J. A.	HOWARD UNIVERSITY	NAS 5-25185	Thorpe, A. M.	39	1879
GSFC	Chapman, J. W.	HOWARD UNIVERSITY	NCA 5-29	Cox, E. L.	49	1880
GSFC	Chapman, J. W.	HOWARD UNIVERSITY	NCA 5-91	Cox, E. L.	49	1881
GSFC	Nava, D. F.	HOWARD UNIVERSITY	NGR 09-011-057	Tsang, T.	13	1884
GSFC	Friedman, D. S.	HOWARD UNIVERSITY	NSG 5127	Fischmann, E. J.	56	1889
GSFC	Alcorn, G. E.	HOWARD UNIVERSITY	NSG 5158	Cooper, A. R.	13	1890
GSFC	O'Keefe, J. A.	HOWARD UNIVERSITY	NSG 5186	Wallace, W. J.	13	1891
GSFC	Yin, L. I.	HOWARD UNIVERSITY	NSG 5268	Ferguson, G. A.	56	1892
GSFC	Laughlin, C. R.	HOWARD UNIVERSITY	NSG 5295	Gill, T. L.	21	1893
GSFC	Taylor, R. E.	HOWARD UNIVERSITY	NSG 5336	Sennott, J. W.	45	1894
GSFC	Yin, L. I.	HOWARD UNIVERSITY	NSG 5378	Press, H. C., Jr.	56	1895
GSFC	Hobbs, R. W.	INDIANA U-BLOOMINGTN	NAS 5-22987	Burkhead, M. S.	11	2136
GSFC	Kupperian, J. E., Jr.	IOWA STATE UNIV	NSG 5199	Lamb, R. C.	11	2198
GSFC	Halem, M.	IOWA STATE UNIV	NSG 5339	Chen, T	31	2199
GSFC	Rice, C. F.	JOHNS HOPKINS UNIV	NAS 5-11415	Doering, J. P.	31	2303
GSFC	Friedman, D. S.	JOHNS HOPKINS UNIV	NAS 5-23732	Long, D.	56	2304
GSFC	Fowler, W. S.	JOHNS HOPKINS UNIV	NAS 5-25358	Fastie, W. G.	13	2305
GSFC	Marsh, J. G.	JOHNS HOPKINS UNIV	NCC 5 1	Marsh, B. D.	32	2311
GSFC	Taylor, P. T.	JOHNS HOPKINS UNIV	NCC 5 13	Marsh, B. D.	32	2312
GSFC	Langel, R. A.	JOHNS HOPKINS UNIV	NCC 5 18	Marsh, B. D.	32	2313
GSFC	Bissell, E. E.	JOHNS HOPKINS UNIV	NGR 21-001-001	Fastie, W. G.	11	2314
GSFC	Smith, D. E.	JOHNS HOPKINS UNIV	NSG 5090	Marsh, B. D.	32	2318
GSFC	Kupperian, J. E., Jr.	JOHNS HOPKINS UNIV	NSG 5184	Moos, H. W.	11	2319
GSFC	Kupperian, J. E., Jr.	JOHNS HOPKINS UNIV	NSG 5230	Moos, H. W.	11	2320
GSFC	Boggess, A.	JOHNS HOPKINS UNIV	NSG 5255	Moos, H. W.	11	2321
GSFC	Langel, R. A.	JOHNS HOPKINS UNIV	NSG 5269	Marsh, B. D.	32	2322
GSFC	Kupperian, J. E., Jr.	JOHNS HOPKINS UNIV	NSG 5310	Moos, H. W	11	2323
GSFC	Boggess, A.	JOHNS HOPKINS UNIV	NSG 5393	Moos, H. W	11	2324
GSFC	Boggess, A.	LEHIGH UNIVERSITY	NSG 5386	McCluskey, G. E., Jr.	11	3372
GSFC	Alterescu, S.	LINCOLN UNIV-PA	NAS 5-23800	Frankowsky, J. W.	56	3373
GSFC	Davis, M. A.	MASS INST OF TECH	NAS 5-11062	Bridge, H. S.	13	2493
GSFC	Rice, C. F.	MASS INST OF TECH	NAS 5-11450	Clark, G. W.	11	2494
GSFC	Theon, J. S.	MASS INST OF TECH	NAS 5-21980	Staelin, D H.	31	2495
GSFC	Heath, D. F.	MASS INST OF TECH	NAS 5-22915	Cunnold, D. M.	41	2496
GSFC	Gloersen, P.	MASS INST OF TECH	NAS 5-22929	Staelin, D. H.	41	2497
GSFC	Shiue, J. C.	MASS INST OF TECH	NAS 5-23677	Staelin, D. H.	11	2498
GSFC	Shiue, J. C.	MASS INST OF TECH	NAS 5-24139	Kong, J. A.	45	2499
GSFC	Corrigan, J. P.	MASS INST OF TECH	NAS 5-24441	Clark, G. W.	11	2500
GSFC	Nace, D. A.	MASS INST OF TECH	NAS 5-24493	Weiss, R.	11	2501

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GSFC	Ippolitto, L.	MASS INST OF TECH	NAS 5-25091	Staelin, D. H.	45	2502
GSFC	Clark, T. C.	MASS INST OF TECH	NAS 5-25543	Burke, B. F.	11	2503
GSFC	Kostiuk, T.	MASS INST OF TECH	NAS 5-25717	Spears, D. L.	47	2504
GSFC	Mead, G. D.	MASS INST OF TECH	NCC 5 8	Molnar, P.	32	2519
GSFC	Mead, G. D.	MASS INST OF TECH	NCC 5 14	Solomon, S. C.	32	2520
GSFC	Halem, M.	MASS INST OF TECH	NGR 22-009-727	Charney, J. G.	31	2538
GSFC	Bissell, E. E.	MASS INST OF TECH	NGR 22-009-730	Rappaport, S. A.	11	2539
GSFC	Clark, T. A.	MASS INST OF TECH	NGR 22-009-839	Counselman, C. C., III	32	2542
GSFC	Hansen, J. E.	MASS INST OF TECH	NSG 5076	Rivas, F. K.	11	2583
GSFC	Hansen, J. E.	MASS INST OF TECH	NSG 5113	Stone, P. H.	31	2584
GSFC	Schaefer, D. H.	MASS INST OF TECH	NSG 5157	McClellan, J. H.	45	2585
GSFC	Halem, M.	MASS INST OF TECH	NSG 5166	Charney, J. G.	31	2586
GSFC	Smith, D. E.	MASS INST OF TECH	NSG 5253	Sclater, J. G.	32	2587
GSFC	Frey, H. V.	MASS INST OF TECH	NSG 5260	Molnar, P.	32	2588
GSFC	Halem, M.	MASS INST OF TECH	NSG 5306	Eagleson, P. S.	32	2589
GSFC	Alterescu, S.	MEHARRY MEDICAL COL	NAS 5-23801	Braun, G.	56	3486
GSFC	Kupperian, J. E., Jr.	MIDDLEBURY COLLEGE	NSG 5198	Winkler, P. F., Jr.	11	3752
GSFC	Fischel, D.	MONTGOMERY COLLEGE	NAS 5-25120	Fahey, P. P.	11	2328
GSFC	Alterescu, S.	MOREHOUSE COLLEGE	NAS 5-23571	Margolis, S.	56	2011
GSFC	Friedman, D. S.	MORGAN STATE UNIV	NAS 5-23558	Taylor, J. H.	49	2329
GSFC	Chapman, J. W.	MORGAN STATE UNIV	NAS 5-25533	Jerkins, K.	45	2330
GSFC	Mundy, J. R.	MORGAN STATE UNIV	NAS 5-25700	Proctor, N. K.	49	2331
GSFC	Baker, G. R.	MORGAN STATE UNIV	NSG 5074	Hammond, E. C., Jr.	11	2333
GSFC	Duncan, C. H.	MORGAN STATE UNIV	NSG 5401	Oliver, F. W.	31	2334
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-64	Moore, E. P.	11	2883
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-69	Moore, E. P.	11	2884
GSFC	Hobbs, R. W.	NEW MEX INST MINING	NCA 5-71	Moore, E. P.	11	2885
GSFC	Pincus, B. R.	NEW MEX ST U-LAS CR	NAS 5-24241	Lawrence, H.	49	2886
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5034	Isaacson, E.	31	3009
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5130	Isaacson, E.	31	3010
GSFC	Halem, M.	NEW YORK UNIVERSITY	NSG 5133	Hoffert, M. I.	39	3011
GSFC	Boggess, A.	NEW YORK UNIVERSITY	NSG 5411	Huggins, P. J.	11	3012
GSFC	Henry, V.	NO CAR A&T STATE U	NAS 5-24101	Williams, L. J.	45	3110
GSFC	Ramapriyan, H. K.	NO CAR A&T STATE U	NSG 5406	Alexander, W. E.	21	3115
GSFC	McAvoy, N.	N CAR CENTRAL UNIV	NSG 5120	Dutta, J. M.	13	3117
GSFC	Heppner, J. P.	NO CAROLINA STATE U	NAS 5-25751	Manring, E. R.	31	3118
GSFC	Hirschmann, E.	OHIO STATE UNIV	NAS 5-22575	Hodge, D. B.	45	3211
GSFC	Stephanides, C. C.	OHIO STATE UNIV	NAS 5-25888	Mueller, I. I.	32	3212
GSFC	Marsh, J. G.	OHIO STATE UNIV	NGR 36-008-161	Rapp, R. H.	32	3217
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5141	Slettebak, A. E.	11	3235
GSFC	Boggess, A.	OHIO STATE UNIV	NSG 5247	Wing, R. F.	11	3236
GSFC	Smith, D. E.	OHIO STATE UNIV	NSG 5265	Mueller, I. I.	32	3237
GSFC	Smith, D. E.	OHIO STATE UNIV	NSG 5275	Schmidt, E. G.	32	3238
GSFC	Kupperian, J. E., Jr.	OHIO STATE UNIV	NSG 5299	Slettebak, A. E.	11	3239
GSFC	Boggess, A.	OHIO STATE UNIV	NSG 5368	Wing, R. F.	11	3240
GSFC	Fowler, W. B.	OLD DOMINION UNIV	NSG 5053	Becher, J.	19	3839
GSFC	Fowler, W. B.	OLD DOMINION UNIV	NSG 5289	Becher, J.	13	3840
GSFC	Mueller, J. L.	OREGON STATE UNIV	NAS 5-23738	Zaneveld, R. V	39	3318
GSFC	Halem, M.	OREGON STATE UNIV	NSG 5308	Esbensen, S	31	3326
GSFC	Adler, R. F.	OREGON STATE UNIV	NSG 5343	Decker, F. W.	31	3327
GSFC	Halem, M.	OREGON STATE UNIV	NSG 5353	Gates, W. L.	31	3328
GSFC	Alford, W. L.	PENN STATE U-UNIV PK	NAS 5-23859	McMurtry, G. J.	39	3375
GSFC	Oseroff, H.	PENN STATE U-UNIV PK	NAS 5-24264	Carlson, T. N.	31	3376
GSFC	Golden, T. S.	PENN STATE U-UNIV PK	NAS 5-24329	Feller, I. R.	99	3377
GSFC	Iron., J.	PENN STATE U-UNIV PK	NAS 5-25667	Petersen, G. W.	39	3378
GSFC	Labovitz, M.	PENN STATE U-UNIV PK	NAS 5-25702	McMurtry, G. J.	21	3379
GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NCC 5 12	Alexander, S. S.	32	3387
GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NCC 5 19	Alexander, S. S.	32	3388

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GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NSG 5185	Alexander, S. S.	32	3410
GSFC	Ucellini, L. W.	PENN STATE U-UNIV PK	NSG 5205	Anthes, R. A.	31	3411
GSFC	Spencer, N. W.	PENN STATE U-UNIV PK	NSG 5212	Nisbet, J. S.	13	3412
GSFC	Allenby, R. J.	PENN STATE U-UNIV PK	NSG 5276	Alexander, S. S.	32	3413
GSFC	Greaves, J. R.	PENN STATE U-UNIV PK	NSG 5347	Clark, J. H.	31	3414
GSFC	Pirraglia, J. A.	POLY INST OF NY	NAS 5-25076	Gross, S. H.	31	3015
GSFC	Spencer, N. W.	POLY INST OF NY	NSG 5284	Gross, S. H.	31	3024
GSFC	Wilson, L.	PRINCETON UNIVERSITY	NAS 5-22360	Jenkins, E. B.	32	2837
GSFC	Corrigan, J. P.	PRINCETON UNIVERSITY	NAS 5-23576	Spitzer, L., Jr.	11	2838
GSFC	Nace, D. A.	PRINCETON UNIVERSITY	NAS 5-24486	Wilkinson, D. T.	11	2839
GSFC	Hobbs, R. W.	PRINCETON UNIVERSITY	NAS 5-25084	Groth, E. J.	11	2840
GSFC	Boggess, A.	PRINCETON UNIVERSITY	NSG 5248	Jenkins, E. B.	11	2859
GSFC	Williams, J. T.	PRINCETON UNIVERSITY	NSG 5277	Lowrance, J. L.	13	2860
GSFC	Boggess, A	PRINCETON UNIVERSITY	NSG 5382	York, D. G.	11	2861
GSFC	Corrigan, J. P.	PRINCETON UNIVERSITY	NSG 5415	Turners, E. L.	11	2862
GSFC	Langel, R. A.	PURDUE UNIVERSITY	NAS 5-22816	Hinze, A. J.	32	2145
GSFC	Gordon, F., Jr.	PURDUE UNIVERSITY	NAS 5-24462	Phillips, T. L.	22	2146
GSFC	Langel, R. A.	PURDUE UNIVERSITY	NAS 5-25030	Hinze, W. J.	32	2147
GSFC	Allenby, R. J.	PURDUE UNIVERSITY	NCC 5 21	Braile, L. W.	32	2154
GSFC	Gordon, F., Jr.	PURDUE UNIVERSITY	NSG 5414	Swain, P. H.	99	2172
GSFC	Taylor, H. A., Jr.	RICE UNIVERSITY	NAS 5-23338	Cloutier, P. A.	13	3542
GSFC	Teegarden, B. J.	RICE UNIVERSITY	NAS 5-25032	Haymes, R. C.	31	3543
GSFC	Spencer, N. W.	RICE UNIVERSITY	NSG 5286	Reiff, P. H.	31	3556
GSFC	Boggess, A.	RICE UNIVERSITY	NSG 5364	DuFour, R. J.	11	3557
GSFC	Kupperian, J. E., Jr.	RUTGERS U-N BRUNSWK	NSG 5195	Matilsky, T A.	11	2875
GSFC	Halem, M.	ST U NY COL-PURCHASE	NSG 5077	Tenenbaum, J.	31	3091
GSFC	Gordon, F., Jr.	SO DAKOTA STATE UNIV	NAS 5-24206	Moore, D. G.	99	3478
GSFC	Schmugge, T. J.	SO DAKOTA STATE UNIV	NSG 5396	Heilman, J. L.	39	3481
GSFC	Davis, M. A.	STANFORD UNIVERSITY	NAS 5-20871	Helliwell, R. A.	13	1307
GSFC	Kant, S.	STANFORD UNIVERSITY	NAS 5-21960	Debra, D. B	42	1308
GSFC	Broderick, J. C.	STANFORD UNIVERSITY	NAS 5-24232	Lyon, R. J.	32	1309
GSFC	Fellerman, K. D.	STANFORD UNIVERSITY	NAS 5-24409	Helliwell, R. A.	13	1310
GSFC	Davis, M. A.	STANFORD UNIVERSITY	NAS 5-24420	Wilcox, J. M.	13	1311
GSFC	Broderick, J. C.	STANFORD UNIVERSITY	NAS 5-24479	Rich, E. I.	32	1312
GSFC	Ostrow, H.	STANFORD UNIVERSITY	NAS 5-25043	MacOvski, A.	19	1313
GSFC	Fichtel, C.	STANFORD UNIVERSITY	NAS 5-25544	Hofstadter, R.	11	1314
GSFC	Bissell, E. E.	STANFORD UNIVERSITY	NSG 5131	Walker, A. B., Jr.	13	1400
GSFC	Halem, M.	STANFORD UNIVERSITY	NSG 5254	Spreiter, J. R.	31	1401
GSFC	Frey, H. V.	STATE UNIV NY-ALBANY	NSG 5274	Burke, K.	32	3056
GSFC	Stewart, R. W.	STATE U NY-STONY BRK	NCC 5 7	Hogan, J. S.	31	3070
GSFC	Hansen, J. E.	STATE U NY-STONY BRK	NGR 33-015-165	Owen, T.	31	3075
GSFC	Stewart, R. W.	STATE U NY-STONY BRK	NSG 5102	Hogan, J. S.	31	3079
GSFC	Kerr, A. R.	STATE U NY-STONY BRK	NSG 5125	Kao, Y. H.	31	3080
GSFC	Boggess, A.	STATE U NY-STONY BRK	NSG 5250	Caldwell, J. J.	11	3081
GSFC	Adler, R. F.	STATE U NY-STONY BRK	NSG 5271	Atlas, R. M.	31	3082
GSFC	Stonesifer, G. R.	TEXAS A&M UNIVERSITY	NAS 5-20796	Rouse, J. W Jr.	59	3569
GSFC	Nelsen, E. D.	TEXAS A&M UNIVERSITY	NAS 5-22966	El-Sayed, S. Z.	41	3570
GSFC	Stonesifer, G. R.	TEXAS A&M UNIVERSITY	NAS 5-24383	Harlan, J. C.	19	3571
GSFC	Deering, D. W.	TEXAS A&M UNIVERSITY	NAS 5-25715	Haos, R. H.	39	3572
GSFC	Toll, D.	TEXAS A&M UNIVERSITY	NAS 5-25846	Miller, E. D	55	3573
GSFC	Taylor, P. T.	TEXAS A&M UNIVERSITY	NCC 5 11	Jones, G. M	32	3589
GSFC	Schmugge, T. J.	TEXAS A&M UNIVERSITY	NCC 5 15	Miller, L. D.	39	3590
GSFC	Chang, A. T.	TEXAS A&M UNIVERSITY	NSG 5134	Blanchard, B. J.	32	3599
GSFC	Chang, A. T.	TEXAS A&M UNIVERSITY	NSG 5156	Blanchard, B. J.	32	3600
GSFC	Schmugge, T. J.	TEXAS A&M UNIVERSITY	NSG 5193	McFarland, M. J.	31	3601
GSFC	Wang, J. R.	TEXAS A&M UNIVERSITY	NSG 5266	Newton, R. R.	39	3602
GSFC	McAvoy, N.	UNION COLLEGE	NGR 33-032-004	Galantowicz, A.	13	3095
GSFC	Spencer, N. W.	UNIV ALASKA-FAIRBNKS	NSG 5219	Rees, M. H.	13	1064

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GSFC	Wainscott, F. H.	UNIV OF ARIZONA	NAS 5-24308	Smith, B. A.	11	1097
GSFC	Sours, W. T.	UNIV OF ARIZONA	NAS 5-25484	Smith, B. A.	31	1098
GSFC	Liberatore, F. J.	UNIV OF ARIZONA	NAS 5-25733	Weymann, R J.	11	1099
GSFC	Dunkelman, L.	UNIV OF ARIZONA	NCA 5-76	Martineck, S.	31	1107
GSFC	Donn, B.	UNIV OF ARIZONA	NCA 5-93	Martineck, S.	31	1108
GSFC	Pearl, J. C.	UNIV OF ARIZONA	NCA 5-94	Fink, U. W.	13	1109
GSFC	LeVine, D. M.	UNIV OF ARIZONA	NSG 5023	Krider, E. P.	31	1129
GSFC	Boggess, A.	UNIV OF ARIZONA	NSG 5235	Imhoff, C. L.	11	1130
GSFC	Boggess, A.	UNIV OF ARIZONA	NSG 5249	Tomasko, M. G.	11	1131
GSFC	Schmugge, T. J.	UNIV OF ARIZONA	NSG 5279	Evans, D. D.	31	1132
GSFC	McAvoy, N.	UNIV OF ARIZONA	NSG 5302	Lamb, W. E., Jr.	13	1133
GSFC	Kowalski, G. E.	UNIV CALIF-BERKELEY	NAS 5-20079	Anderson, K. A.	13	1[illegible]0
GSFC	Davis, M. A	UNIV CALIF-BERKELEY	NAS 5-20080	Mozer, F. S	13	1411
GSFC	Gallagher W. F.	UNIV CALIF-BERKELEY	NAS 5-20995	Heckman, H. K.	13	1412
GSFC	Davis, M. A.	UNIV CALIF-BERKELEY	NAS 5-22307	Anderson, K. A.	32	1413
GSFC	Willis, S. E	UNIV CALIF-BERKELEY	NAS 5-24189	Bowyer, C. S.	11	1414
GSFC	Willis, S. E.	UNIV CALIF-BERKELEY	NAS 5-24445	Bowyer, C. S.	11	1415
GSFC	Nice, D. A.	UNIV CALIF-BERKELEY	NAS 5-25007	Smoot, G.	11	1416
GSFC	Hobbs, R. W.	UNIV CALIF-BERKELEY	NAS 5-25070	King, I.	11	1417
GSFC	Campbell, C. E.	UNIV CALIF-BERKELEY	NAS 5-25453	Price, P. B.	47	1418
GSFC	Porreca, G.	UNIV CALIF-BERKELEY	NAS 5-25876	Anderson, D. A.	11	1419
GSFC	Porreca, G.	UNIV CALIF-BERKELEY	NAS 5-25892	Anderson, D. A.	11	1420
GSFC	Bissell, E. E.	UNIV CALIF-BERKELEY	NGR 05-003-239	Mozer, F. S.	13	1445
GSFC	Bissell, E. E.	UNIV CALIF-BERKELEY	NGR 05-003-450	Bowyer, C. S.	11	1447
GSFC	Chang, T. C.	UNIV CALIF-BERKELEY	NSG 5093	Angelakos, D. J.	49	1464
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5227	Bowyer, C. S.	11	1465
GSFC	Kim, H. H.	UNIV CALIF-BERKELEY	NSG 5256	Colwell, R. N.	33	1466
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-BERKELEY	NSG 5292	Bowyer, C. S.	11	1467
GSFC	Boggess, A.	UNIV CALIF-BERKELEY	NSG 5360	Spinrad, H.	11	1468
GSFC	Nelsen, E. D.	UNIV CALIF-DAVIS	NAS 5-22964	Coulson, K. L.	13	1483
GSFC	Rango, A.	UNIV CALIF-DAVIS	NSG 5092	Algazi, V. R.	39	1494
GSFC	Davis, M. A.	UNIV CALIF-L ANGELES	NAS 5-20064	Russell, C. T.	13	1504
GSFC	Wende, C. D.	UNIV CALIF-L ANGELES	NAS 5-23702	Coleman, P. J., Jr.	39	1505
GSFC	Hoffman, R. A.	UNIV CALIF-L ANGELES	NAS 5-25039	Coroniti, F. V.	13	1506
GSFC	Liberatore, F. J.	UNIV CALIF-L ANGELES	NAS 5-25657	Jura, M. A.	11	1507
GSFC	Halem, M.	UNIV CALIF-L ANGELES	NGR 05-007-328	Arakawa, A.	31	1523
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5056	Peters, C. J.	11	1539
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5165	Margon, B. H.	11	1540
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5169	Jura, M. A.	11	1541
GSFC	Reed, E. I.	UNIV CALIF-L ANGELES	NSG 5190	Thorne, R. M.	31	1542
GSFC	Smith, D. E.	UNIV CALIF-L ANGELES	NSG 5263	Kaula, W. M.	32	1543
GSFC	Boggess, A.	UNIV CALIF-L ANGELES	NSG 5272	Plavec, M.	11	154[illegible]
GSFC	Kupperian, J. E., Jr.	UNIV CALIF-L ANGELES	NSG 5351	Siscoe, G. L.	32	1545
GSFC	Boggess, A.	UNIV CALIF-L ANGELES	NSG 5358	Aller, L. H.	11	1546
GSFC	Boggess, A.	UNIV CALIF-L ANGELES	NSG 5377	Jura, M. A.	11	1547
GSFC	Stouffer, C. G.	UNIV CALIF-SAN DIEGO	NAS 5-22375	Tabakoff, W.	11	1571
GSFC	Bartlett, R. O.	UNIV CALIF-SAN DIEGO	NAS 5-23481	McIlwain, C. E.	11	1572
GSFC	Wende, C. D.	UNIV CALIF-SAN DIEGO	NAS 5-23705	McIlwain, C. E.	31	1573
GSFC	White, R. A.	UNIV CALIF-SAN DIEGO	NAS 5-24463	Harms, R. J.	11	1574
GSFC	Shannon, J. L.	UNIV CALIF-SAN DIEGO	NAS 5-24466	Beaver, E. A.	11	1575
GSFC	Shannon, J. L.	UNIV CALIF-SAN DIEGO	NAS 5-25054	Beaver, E. A.	11	1576
GSFC	Davis, M. A.	UNIV CALIF-SAN DIEGO	NAS 5-25448	Peterson, L. E.	13	1577
GSFC	Nelsen, E. D.	UNIV CALIF-SAN DIEGO	NAS 5-25450	Austin, R. W.	33	1578
GSFC	Smith, D. E.	UNIV CALIF-SAN DIEGO	NGR 05-009-246	Berger, J.	39	1596
GSFC	Schaefer, D. H.	UNIV CALIF-SAN DIEGO	NGR 05-009-264	Lee, S. H.	49	1598
GSFC	Donley, J. L.	UNIV CALIF-SAN DIEGO	NSG 5321	Hudson, H. S.	31	1609
GSFC	Donley, J. L.	UNIV CALIF-SAN DIEGO	NSG 5322	Hudson, H. S	31	1610
GSFC	Kahn, W. D.	UNIV CALIF-SAN DIEGO	NSG 5331	Goodkind, J. M.	19	1611

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GSFC	Chang, A. T.	UNIV CALIF-S BARBARA	NCC 5 5	Estes, J. E.	32	1646
GSFC	Barnes, W. L.	UNIV CALIF-S BARBARA	NSG 5106	Estes, J. E.	33	1653
GSFC	Salomonson, V. V.	UNIV CALIF-S BARBARA	NSG 5155	Ozier, J. D.	32	1654
GSFC	Chang, A. T.	UNIV CALIF-S BARBARA	NSG 5170	Estes, J. E.	32	1655
GSFC	Rango, A.	UNIV CALIF-S BARBARA	NSG 5262	Dozier, J.	39	1656
GSFC	Boggess, A.	UNIV CALIF-S CRUZ	NSG 5361	Herbig, G. H.	11	1661
GSFC	Davis, M. A.	UNIV OF CHICAGO	NAS 5-11067	Simpson, J. A.	13	2075
GSFC	Gallagher, W. F.	UNIV OF CHICAGO	NAS 5-20674	Meyer, P.	13	2076
GSFC	Davis, M. A.	UNIV OF CHICAGO	NAS 5-24430	Simpson, J. A.	13	2077
GSFC	Kupperian, J. E., Jr.	UNIV OF CHICAGO	NSG 5202	Simpson, J. A.	11	2097
GSFC	Kupperian, J. E., Jr.	UNIV OF CHICAGO	NSG 5291	Simpson, J. A.	11	2098
GSFC	Kupperian, J. E., Jr.	UNIV OF CHICAGO	NSG 5311	Simpson, J. A.	11	2099
GSFC	Adler, R. F.	UNIV OF CHICAGO	NSG 5402	Srivastava, R. C.	31	2100
GSFC	Boggess, A.	UNIV OF CHICAGO	NSG 5405	Frisch, P. C.	11	2101
GSFC	Force, C. A.	UNIV OF CHILE	NAS 5-1925	Diaz, E.	99	4027
GSFC	Rice, C. F.	UNIV COLORADO-BOLDR	NAS 5-11405	Barth, C. A.	31	1742
GSFC	Gemmell, J. D.	UNIV COLORADO-BOLDR	NAS 5-22409	Barth, C. A.	31	1743
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NAS 5-22833	Conti, P. S.	11	1744
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NAS 5-23274	Linsky, J. L.	11	1745
GSFC	Rice, C. F.	UNIV COLORADO-BOLDR	NAS 5-23808	Stewart, A. I.	31	1746
GSFC	Stephanides, C. C.	UNIV COLORADO-BOLDR	NAS 5-25887	Smith, M. L.	31	1747
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NGR 06-003-176	Lillie, C. F.	11	1758
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5103	Barth, C. A.	19	1764
GSFC	Reber, C. A.	UNIV COLORADO-BOLDR	NSG 5153	London, J.	31	1765
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5178	Rottman, G. T	13	1766
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5211	Linsky, J. L.	11	1767
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5246	Snow, T. P., Jr.	11	1768
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NSG 5300	Snow, T. P., Jr.	11	1769
GSFC	Bissell, E. E.	UNIV COLORADO-BOLDR	NSG 5303	Snow, T. P., Jr.	11	1770
GSFC	Donley, J. L.	UNIV COLORADO-BOLDR	NSG 5318	Gebbie, K. B.	31	1771
GSFC	Kupperian, J. E., Jr.	UNIV COLORADO-BOLDR	NSG 5355	Snow, T. P., Jr.	11	1772
GSFC	Boggess, A.	UNIV COLORADO-BOLDR	NSG 5365	Shull, J. M.	11	1773
GSFC	Reed, E. I.	UNIV COLORADO-BOLDR	NSG 5372	Rusch, D. W.	31	1774
GSFC	Boggess, A.	UNIV COLORADO-DENVER	NSG 5394	Lane, A. L.	11	1795
GSFC	Halem, M.	UNIV OF CONNECTICUT	NSG 5075	Cooper, A. R.	31	1817
GSFC	Halem, M.	UNIV OF CONNECTICUT	NSG 5346	Lin, J. D.	31	1818
GSFC	Ruitberg, A. P.	UNIV DC-HARVARD GA	NGR 09-053-003	Walker, E. L.	39	1899
GSFC	Webster, W. H., Jr.	UNIV DC-MT VERNON SQ	NGR 09-050-003	Nottingham, W. C.	11	1900
GSFC	Gross, F. C.	UNIV DC-MT VERNON SQ	NGR 09-050-019	Phelps, H. L.	39	1901
GSFC	Fuchs, A. J.	UNIV DC-MT VERNON SQ	NSG 5122	Bakshi, J. S.	21	1902
GSFC	Mentall, J. E.	UNIV DC-MT VERNON SQ	NSG 5192	Morgan, H. D.	13	1903
GSFC	Hobbs, R. W.	UNIV DC-VAN NESS	NCA 5-95	Kasten, R.	11	1904
GSFC	Chappelle, E. W.	UNIV DC-VAN NESS	NSG 5290	Watlington, R. A.	19	1905
GSFC	Kupperian, J. E., Jr.	UNIV OF DELAWARE	NSG 5144	Shipman, H. L.	11	1838
GSFC	Kunde, V. G.	UNIV OF DENVER	NAS 5-25097	Goldman, A.	31	1798
GSFC	Goldberg, R.	UNIV OF DENVER	NAS 5-25862	Barcus, J.	13	1799
GSFC	Kupperian, J. E., Jr.	UNIV OF DENVER	NSG 5135	Everhart, E.	11	1807
GSFC	Boggess, A.	UNIV OF DENVER	NSG 5367	Lesh, J. R.	11	1808
GSFC	Heath, D. F.	UNIV OF FLORIDA	NAS 5-22908	Green, A. E.	49	1927
GSFC	White, W. W.	UNIV OF HAWAII-MANOA	NAS 5-25181	Cushman, S. F.	11	2027
GSFC	Greaves, J. R.	UNIV OF HAWAII-MANOA	NAS 5-25376	Sadler, J. C.	31	2028
GSFC	Greaves, J. R.	UNIV OF HAWAII-MANOA	NAS 5-25378	Murakami, T	31	2029
GSFC	Bissell, E. E.	UNIV OF HAWAII-MANOA	NGR 12-001-075	Jefferies, J. T.	11	2037
GSFC	White, W. W.	UNIV OF HAWAII-MANOA	NGR 12-001-127	Jefferies, J. T.	32	2039
GSFC	Theon, J. S.	UNIV OF HAWAII-MANOA	NSG 5159	Ramage, C. S.	31	2040
GSFC	Nava, D. F.	UNIV OF HAWAII-MANOA	NSG 5203	Philpotts, J. A.	32	2041
GSFC	Kupperian, J. E., Jr.	UNIV OF HAWAII-MANOA	NSG 5231	Boesgarrd, A. M.	11	2042
GSFC	Donley, J. L.	UNIV OF HAWAII-MANOA	NSG 5317	Jefferies, J. T.	31	2043

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GSFC	Donley, J. L.	UNIV OF HAWAII-MANOA	NSG 5326	Orrall, F. Q.	31	2044
GSFC	Schaefer, D. H.	UNIV ILLINOIS-URBANA	NAS 5-24275	Slotnick, D. L.	45	2113
GSFC	Keating, T., Jr.	UNIV ILLINOIS-URBANA	NAS 5-25062	Mittra, R.	45	2114
GSFC	Abshire, J. B.	UNIV ILLINOIS-URBANA	NSG 5049	Ghia, K. N.	45	2128
GSFC	Spencer, N. W.	UNIV ILLINOIS-URBANA	NSG 5213	Sechrist, C. F., Jr.	13	2129
GSFC	Donn, B. D.	UNIV ILLINOIS-URBANA	NSG 5278	Snyder, L. E.	11	2130
GSFC	Kupperian, J. E., Jr.	UNIV ILLINOIS-URBANA	NSG 5294	Crutcher, R. M.	11	2131
GSFC	Donley, J. L.	UNIV ILLINOIS-URBANA	NSG 5319	Mouschovias, T. C.	31	2132
GSFC	Gemmell, J. D.	UNIV OF IOWA	NAS 5-11064	Frank, L. A.	13	2201
GSFC	Gemmell, J. D.	UNIV OF IOWA	NAS 5-11279	Tabakoff, W.	11	2202
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-11431	Gurnett, D. A.	31	2203
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20093	Gurnett, D. A.	13	2204
GSFC	Davis, M. A.	UNIV OF IOWA	NAS 5-20094	Frank, L. A.	13	2205
GSFC	Fellerman, K. D.	UNIV OF IOWA	NAS 5-24293	Frank, L. A.	13	2206
GSFC	Fellerman, K. D.	UNIV OF IOWA	NAS 5-24294	Shawhan, S. D.	13	2207
GSFC	Heppner, J. P.	UNIV OF IOWA	NAS 5-24336	Gurnett, D. A.	13	2208
GSFC	Gemmell, J. D.	UNIV OF IOWA	NAS 5-25530	Frank, L. A.	13	2209
GSFC	Rango, A.	UNIV OF KANSAS	NAS 5-23777	Ulaby, F. T.	45	2228
GSFC	Schmugge, T. J.	UNIV OF KANSAS	NAS 5-25807	Ulaby, F. T.	31	2229
GSFC	Chang, A. T.	UNIV OF KANSAS	NSG 5335	Ulaby, F. T.	32	2250
GSFC	Davis, M. A.	UNIV MARYLAND-COL PK	NAS 5-11063	Gloeckler, G.	13	2336
GSFC	Gallagher, W. F.	UNIV MARYLAND-COL PK	NAS 5-20062	Gloeckler, G.	13	2337
GSFC	Conrath, B. J.	UNIV MARYLAND-COL PK	NAS 5-23237	Ponnamperuma, C. A.	13	2338
GSFC	Trombka, J. I.	UNIV MARYLAND-COL PK	NAS 5-23457	Sommer, S. E.	39	2339
GSFC	Caudill, L. O.	UNIV MARYLAND-COL PK	NAS 5-25132	McIlrath, T. J.	49	2340
GSFC	Sing, M. L.	UNIV MARYLAND-COL PK	NAS 5-25388	Papadopoulos, K.	13	2341
GSFC	Peake, H. J.	UNIV MARYLAND-COL PK	NAS 5-25437	Taylor, L. S.	45	2342
GSFC	Ogilvie, K. W.	UNIV MARYLAND-COL PK	NAS 5-25472	Coplan, M. A.	11	2343
GSFC	Sours, W. T.	UNIV MARYLAND-COL PK	NAS 5-25486	Currie, D. G.	31	2344
GSFC	Desjardins, R.	UNIV MARYLAND-COL PK	NAS 5-25764	Rieger, C. S.	99	2345
GSFC	Short, N. M.	UNIV MARYLAND-COL PK	NAS 5-25851	Ragan, R. M.	39	2346
GSFC	Fischel, D.	UNIV MARYLAND-COL PK	NCA 5-20	Rosenfeld, A.	11	2355
GSFC	Hobbs, R. W.	UNIV MARYLAND-COL PK	NCA 5-24	Currie, D. G.	11	2356
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-26	Rosenfeld, A.	11	2357
GSFC	Klinglesmith, D. A.	UNIV MARYLAND-COL PK	NCA 5-27	Rosenfeld, A.	11	2358
GSFC	Mundy, J. R.	UNIV MARYLAND-COL PK	NCA 5-28	Wockenfuss, W. A.	49	2359
GSFC	Kastner, S. O.	UNIV MARYLAND-COL PK	NCA 5-65	Martin, F. W.	13	2360
GSFC	Dennis, B. R.	UNIV MARYLAND-COL PK	NCA 5-79	Rosenfeld, A.	31	2361
GSFC	Hobbs, R. W.	UNIV MARYLAND-COL PK	NCC 5 9	Tole, J. R.	11	2363
GSFC	Donn, B. D.	UNIV MARYLAND-COL PK	NGL 21-002-033	Smith, E. P.	31	2365
GSFC	Hartle, R. E.	UNIV MARYLAND-COL PK	NGR 21-002-096	Matthews, D. L.	31	2368
GSFC	Ogilvie, K. W.	UNIV MARYLAND-COL PK	NGR 21-002-291	Coplan, M. A.	13	2372
GSFC	Teegarden, B. J.	UNIV MARYLAND-COL PK	NGR 21-002-316	Gloeckler, G.	13	2373
GSFC	Stief, L. J.	UNIV MARYLAND-COL PK	NGR 21-002-368	Khanna, R. K.	32	2376
GSFC	Rango, A.	UNIV MARYLAND-COL PK	NGR 21-002-399	McCuen, R. H.	32	2377
GSFC	Salomonson, V. V.	UNIV MARYLAND-COL PK	NSG 5017	Ragan, R. M.	32	2384
GSFC	Degnan, J. J.	UNIV MARYLAND-COL PK	NSG 5042	Hochuli, U. E.	49	2385
GSFC	Trombka, J. I.	UNIV MARYLAND-COL PK	NSG 5094	Balakrishnan, A. V.	32	2386
GSFC	McGarry, F. E.	UNIV MARYLAND-COL PK	NSG 5123	Basili, V. R.	49	2387
GSFC	Johnson, T. S.	UNIV MARYLAND-COL PK	NSG 5129	Alley, C. O.	13	2388
GSFC	Schmugge, T. J.	UNIV MARYLAND-COL PK	NSG 5137	Witczak, M. W.	32	2389
GSFC	Donn, B D.	UNIV MARYLAND-COL PK	NSG 5172	Khanna, R. K.	12	2390
GSFC	Barnes, W. L.	UNIV MARYLAND-COL PK	NSG 5174	Wilkerson, T. D.	31	2391
GSFC	Bissell, E. E.	UNIV MARYLAND-COL PK	NSG 5177	Moore, J. H.	13	2392
GSFC	Arking, A.	UNIV MARYLAND-COL PK	NSG 5209	Thompson, O. E.	31	2393
GSFC	Winston, G. C.	UNIV MARYLAND-COL PK	NSG 5234	Currie, D. G.	31	2394
GSFC	Winston, G. C.	UNIV MARYLAND-COL PK	NSG 5287	Currie, D. G.	31	2395
GSFC	Ramaty, R.	UNIV MARYLAND-COL PK	NSG 5298	Wall, N. S.	11	2396

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GSFC	Hudson, R. D.	UNIV MARYLAND-COL PK	NSG 5313	McIlrath, T. J.	13	2397
GSFC	Donley, J. L.	UNIV MARYLAND-COL PK	NSG 5320	Kundu, M. R.	31	2398
GSFC	Donley, J. L.	UNIV MARYLAND-COL PK	NSG 5323	Spicer, D. S.	31	2399
GSFC	Boggess, A.	UNIV MARYLAND-COL PK	NSG 5390	Harrington, J. P.	11	2400
GSFC	Boggess, A.	UNIV MARYLAND-COL PK	NSG 5399	Bell, R. A.	11	2401
GSFC	Spencer, N. W.	UNIV MARYLAND-COL PK	NSG 5404	Lin, C. S.	31	2402
GSFC	Corrigan, J. P.	UNIV MARYLAND-COL PK	NSG 5408	Wu, C. S.	11	2403
GSFC	Nelsen, E. D.	UNIV OF MIAMI	NAS 5-22963	Gordon, H. R.	31	1952
GSFC	Greaves, J. R.	UNIV OF MIAMI	NAS 5-25374	Krause, E. B.	31	1953
GSFC	Halem, M.	UNIV OF MIAMI	NSG 5342	Estoque, M. A.	31	1962
GSFC	Mueller, J. L.	UNIV OF MIAMI	NSG 5344	Williams, F.	33	1963
GSFC	Hedin, A. E.	UNIV MICH-ANN ARBOR	NAS 5-11376	Carignan, G. R.	31	2633
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-11380	Carignan, G. R.	31	2634
GSFC	Cooley, J. E.	UNIV MICH-ANN ARBOR	NAS 5-20939	Carignan, G. R.	31	2635
GSFC	Rice, C. F.	UNIV MICH-ANN ARBOR	NAS 5-23006	Hays, P. B.	31	2636
GSFC	Fellerman, K. D.	UNIV MICH-ANN ARBOR	NAS 5-24295	Carignan, G. R.	13	2637
GSFC	Fellerman, K. D.	UNIV MICH-ANN ARBOR	NAS 5-24296	Hays, P. B.	13	2638
GSFC	Rice, C. F.	UNIV MICH-ANN ARBOR	NAS 5-24331	Walker, J.	31	2639
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-24454	Carignan, G. R.	11	2640
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-25002	Carignan, G. R.	31	2641
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-25031	Carignan, G. R.	31	2642
GSFC	Hoffman, R. A.	UNIV MICH-ANN ARBOR	NAS 5-25038	Nagy, A. F.	13	2643
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-25145	Carignan, G. R.	31	2644
GSFC	Niemann, H. B.	UNIV MICH-ANN ARBOR	NAS 5-25153	Carignan, G. R.	31	2645
GSFC	Haykin, D.	UNIV MICH-ANN ARBOR	NAS 5-25158	Fresh, F.	13	2646
GSFC	Krehbiel, J. P.	UNIV MICH-ANN ARBOR	NAS 5-25409	Carignan, G. R.	13	2647
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NAS 5-25916	Carignan, G. R.	13	2648
GSFC	Bissell, E. E.	UNIV MICH-ANN ARBOR	NGR 23-005-360	Sharp, W. E.	13	2661
GSFC	Stolarski, R. S.	UNIV MICH-ANN ARBOR	NSG 5171	Rusch, D. W.	31	2679
GSFC	Reed, E. I.	UNIV MICH-ANN ARBOR	NSG 5189	Stedman, D. H.	31	2680
GSFC	Kupperian, J. E., Jr.	UNIV MICH-ANN ARBOR	NSG 5206	Donahue, T. M.	11	2681
GSFC	Kupperian, J. E., Jr.	UNIV MICH-ANN ARBOR	NSG 5232	Atreya, S. K.	11	2682
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NSG 5281	Fontheim, E. G.	31	2683
GSFC	Spencer, N. W.	UNIV MICH-ANN ARBOR	NSG 5282	Nagy, A. F.	31	2684
GSFC	Boggess, A.	UNIV MICH-ANN ARBOR	NSG 5366	Kirshner, R.	11	2685
GSFC	Gemmell, J. D.	U MINN-MNPLS-ST PAUL	NAS 5-11310	Jee, W. S.	11	2698
GSFC	Findlay, J. A.	U MINN-MNPLS-ST PAUL	NAS 5-11438	Neir, J. A.	31	2699
GSFC	Wende, C. D.	U MINN-MNPLS-ST PAUL	NAS 5-23703	Winckler, J. R.	31	2700
GSFC	Stone, R. G.	U MINN-MNPLS-ST PAUL	NAS 5-25151	Kellogg, P. J.	11	2701
GSFC	Sugiura, M.	U MINN-MNPLS-ST PAUL	NAS 5-25389	Cahill, L. J., Jr.	13	2702
GSFC	Stone, R. G.	U MINN-MNPLS-ST PAUL	NAS 5-25753	Kellogg, P. J.	11	2703
GSFC	Bissell, E. E.	U MINN-MNPLS-ST PAUL	NSG 5088	Winckler, J. R.	13	2715
GSFC	Boggess, A.	U MINN-MNPLS-ST PAUL	NSG 5237	Black, J. H.	11	2716
GSFC	Bissell, E. E.	U MINN-MNPLS-ST PAUL	NSG 5373	Kellogg, P. J.	13	2717
GSFC	Boggess, A.	U MINN-MNPLS-ST PAUL	NSG 5397	Davidson, K.	11	2718
GSFC	Schmugge, T. J.	UNIV MO-COLUMBIA	NSG 5338	Rouse, J. W., Jr.	39	2763
GSFC	Kupperian, J. E., Jr.	UNIV MO-ST LOUIS	NSG 5151	Schwartz, R. D.	11	2774
GSFC	Boggess, A.	UNIV MO-ST LOUIS	NSG 5400	Lamb, S. A.	11	2775
GSFC	Oseroff, H.	UNIV OF MONTANA	NAS 5-23891	Craighead, J. J.	39	2796
GSFC	Kupperian, J. E., Jr.	UNIV NEBRASKA-LINCLN	NSG 5332	Schmidt, E. G.	11	2800
GSFC	Boggess, A.	UNIV NEBRASKA-LINCLN	NSG 5391	Schmidt, E. G.	11	2801
GSFC	Donley, J. L.	UNIV NEW HAMP-DURHAM	NAS 5-23761	Chupp, E. L	31	2819
GSFC	Wende, C. D.	UNIV NEW HAMP-DURHAM	NAS 5-24328	Arnoldy, R. L.	19	2820
GSFC	Trainor, J. H.	UNIV NEW HAMP-DURHAM	NAS 5-24354	Webber, W. R.	13	2821
GSFC	Davis, M. A.	UNIV NEW HAMP-DURHAM	NAS 5-25420	Lockwood, J. A.	11	2822
GSFC	VonRosenvinge, T. T.	UNIV NEW HAMP-DURHAM	NAS 5-25642	Fisk, L. A.	13	2823
GSFC	Donley, J. L.	UNIV NEW HAMP-DURHAM	NSG 5316	Fisk, L. A.	31	2828
GSFC	Greaves, J. R.	UNIV OKLAHOMA-NORMAN	NAS 5-25375	Sasaki, Y. K.	31	3308

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GSFC	Kupperian, J. E., Jr.	UNIV OKLAHOMA-NORMAN	NSG 5257	Herczeg, T. J.	11	3315
GSFC	Shiue, J. C.	UNIV OF PENNSYLVANIA	NAS 5-25136	Kritikos, H. N.	45	3424
GSFC	Boggess, A.	UNIV OF PENNSYLVANIA	NSG 5296	Koch, R. H.	11	3431
GSFC	Christie, C. J.	UNIV OF PERU	NASW 7	Unavailable	49	4034
GSFC	Kostiuk, T.	UNIV OF PITTSBURGH	NAS 5-22892	Falk, J.	43	3432
GSFC	Kostiuk, T.	UNIV OF PITTSBURGH	NAS 5-25013	Falk, J.	13	3433
GSFC	Thomas, H. H.	UNIV OF PITTSBURGH	NSG 5270	Lidiak, E. G.	32	3446
GSFC	Boggess, A.	UNIV OF PITTSBURGH	NSG 5362	Hapke, B. W.	11	3447
GSFC	Lopez, J. J.	U PUERTO RICO-RIO PI	NAS 5-25844	Cabassa, H. D.	22	4022
GSFC	Kupperian, J. E., Jr.	UNIV OF ROCHESTER	NSG 5329	Savedoff, M. P.	11	3099
GSFC	Kupperian, J. E., Jr.	UNIV OF ROCHESTER	NSG 5354	Savedoff, M. P.	11	3100
GSFC	Bissell, E. E.	UNIV OF SOUTHERN CAL	NSG 5108	Judge, D. L.	13	1703
GSFC	Kupperian, J. E., Jr.	UNIV OF SOUTHERN CAL	NSG 5356	Peters, G. J.	11	1704
GSFC	Golden, T. S.	UNIV TENNESSEE-KNOXV	NAS 5-25101	Snyder, W. M.	39	3492
GSFC	Maguire, W. C.	UNIV TENNESSEE-KNOXV	NAS 5-25428	Fox, K.	13	3493
GSFC	Hirschmann, E.	UNIV TEXAS-AUSTIN	NAS 5-22576	Vogel, W.	45	3639
GSFC	Kahn, W. D.	UNIV TEXAS-AUSTIN	NAS 5-25018	Tapley, B. D.	19	3640
GSFC	Liberatore, F. J.	UNIV TEXAS-AUSTIN	NAS 5-25656	Trafton, L. M.	11	3641
GSFC	Fuchs, A. J.	UNIV TEXAS-AUSTIN	NAS 5-25756	Tapley, B. D.	42	3642
GSFC	White, W. W.	UNIV TEXAS-AUSTIN	NGR 44-012-165	Silverberg, E. C.	32	3656
GSFC	Kolenkiewicz, R	UNIV TEXAS-AUSTIN	NGR 44-012-283	Tapley, B. D.	32	3658
GSFC	Fuchs, A. J.	UNIV TEXAS-AUSTIN	NSG 5154	Tapley, B. D.	21	3670
GSFC	Kupperian, J. E., Jr.	UNIV TEXAS-AUSTIN	NSG 5167	Smith, M. A.	11	3671
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5233	VandenBout, P. A.	11	3672
GSFC	Kupperian, J. E., Jr.	UNIV TEXAS-AUSTIN	NSG 5309	Smith, M. A.	11	3673
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5328	Parsons, S. B.	11	3674
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5337	Wray, J. D.	11	3675
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5379	Lambert, D. L.	11	3676
GSFC	Boggess, A.	UNIV TEXAS-AUSTIN	NSG 5387	Wills, B. J.	11	3677
GSFC	White, W. W.	UNIV TEXAS-AUSTIN	NSG 7162	Shelus, P. J.	19	3679
GSFC	Rice, C. F.	UNIV TEXAS-DALLAS	NAS 5-11406	Hoffman, J. H.	31	3692
GSFC	Rice, C. F.	UNIV TEXAS-DALLAS	NAS 5-11407	Hanson, W. B.	31	3693
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24297	Heelis, R. A.	13	3694
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24298	Hanson, W. B.	13	3695
GSFC	Fellerman, K. D.	UNIV TEXAS-DALLAS	NAS 5-24299	Winningham, J. D.	13	3696
GSFC	Caporale, A. J.	UNIV TEXAS-DALLAS	NAS 5-25310	Hanson, W. B.	13	3697
GSFC	Bissell, E. E.	UNIV TEXAS-DALLAS	NGR 44-004-124	Winningham, J. D.	13	3704
GSFC	Brace, L. H.	UNIV TEXAS-DALLAS	NSG 5085	Heikkila, W. J.	31	3705
GSFC	Brace, L. H.	UNIV TEXAS-DALLAS	NSG 5087	Hoffman, J. H.	31	3706
GSFC	Spencer, N. W.	UNIV TEXAS-DALLAS	NSG 5280	Klumpar, D. M.	31	3707
GSFC	Spencer, N. W.	UNIV TEXAS-S ANTONIO	NSG 5418	Burch, J. L.	31	3721
GSFC	Kupperian, J. E., Jr.	UNIV OF TOLEDO	NSG 5183	Molnar, M. R.	11	3280
GSFC	Kupperian, J. E., Jr.	UNIV OF TOLEDO	NSG 5207	Bopp, B. W.	11	3281
GSFC	Boggess, A.	UNIV OF TOLEDO	NSG 5359	Morrison, N. D.	11	3282
GSFC	Boggess, A.	UNIV OF TOLEDO	NSG 5388	Witt, A. N.	11	3283
GSFC	Greaves, J. R.	UNIV OF UTAH	NAS 5-25373	Kao, S. K.	31	3725
GSFC	Wilson, L.	UNIV OF VIRGINIA	NAS 5-22346	O'connell, R. W.	11	3844
GSFC	Lamb, G. M.	UNIV OF VIRGINIA	NAS 5-24218	Mattauch, R. J.	49	3845
GSFC	Kahle, D. R.	UNIV OF VIRGINIA	NAS 5-25634	Wilson, S. G.	45	3846
GSFC	Kupperian, J. E., Jr.	UNIV OF WASHINGTON	NSG 5142	Wallerstein, G.	11	3944
GSFC	Boggess, A.	UNIV OF WASHINGTON	NSG 5240	Bohm-Vitense, E.	11	3945
GSFC	Spencer, N. W.	UNIV OF WASHINGTON	NSG 5283	Lin, C. S.	31	3946
GSFC	Boggess, A.	UNIV OF WASHINGTON	NSG 5374	Wallerstein, G.	11	3947
GSFC	Boggess, A.	UNIV OF WASHINGTON	NSG 539	Szkody, P.	11	3948
GSFC	Boggess, A.	UNIV OF WASHINGTON	NSG 5398	Bohm-Vitense, E.	11	3949
GSFC	Corrigan, J. P.	UNIV OF WASHINGTON	NSG 5410	Lin, C. S.	11	3950
GSFC	Montgomery, H. E.	UNIV WISC-MADISON	NAS 5-21965	Suomi, V. E.	31	3971
GSFC	Wainscott, F. H.	UNIV WISC-MADISON	NAS 5-22349	Anderson, C. M.	11	3972

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GSFC	Gemmell, J. D.	UNIV WISC-MADISON	NAS 5-22410	Kraushaar, W. L.	31	3973
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-23462	Suomi, V. E.	31	3974
GSFC	Hasler, A. F.	UNIV WISC-MADISON	NAS 5-23706	Suomi, V. E.	31	3975
GSFC	Theon, J. S.	UNIV WISC-MADISON	NAS 5-24230	Weinman, J. A.	31	3976
GSFC	Friedman, D. S.	UNIV WISC-MADISON	NAS 5-24385	Siedbank, M. P.	56	3977
GSFC	White, R. A.	UNIV WISC-MADISON	NAS 5-24487	Bless, R. C.	11	3978
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-25148	Suomi, V. E.	31	3979
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-25377	Suomi, V. E.	31	3980
GSFC	Greaves, J. R.	UNIV WISC-MADISON	NAS 5-25399	Johnson, D. R.	31	3981
GSFC	Sours, W. T.	UNIV WISC-MADISON	NAS 5-25487	Code, A. D.	11	3982
GSFC	Middleton, E.	UNIV WISC-MADISON	NAS 5-25505	Scarpice, F. L.	39	3983
GSFC	Vitz, Hano, H. D.	UNIV WISC-MADISON	NAS 5-25714	Savage, B. D.	11	3984
GSFC	Bissell, E. E.	UNIV WISC-MADISON	NGL 50-002-013	Code, A. D.	11	3989
GSFC	Bissell, E. E.	UNIV WISC-MADISON	NGL 50-002-044	Kraushaar, W. L.	11	3990
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5100	Savage, B. D.	11	3997
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5152	Houghton, D. D.	31	3998
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5180	Cassinelli, J. P.	11	3999
GSFC	Kupperian, J. E., Jr.	UNIV WISC-MADISON	NSG 5181	Savage, B. D.	11	4000
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5223	Herman, G. F.	31	4001
GSFC	Boggess, A.	UNIV WISC-MADISON	NSG 5241	Savage, B. D.	11	4002
GSFC	Boggess, A.	UNIV WISC-MADISON	NSG 5242	Doherty, L. R.	11	4003
GSFC	Minzner, R. A.	UNIV WISC-MADISON	NSG 5251	Suomi, V. E.	31	4004
GSFC	Halem, M.	UNIV WISC-MADISON	NSG 5252	Horn, L. H.	31	4005
GSFC	Boggess, A.	UNIV WISC-MADISON	NSG 5363	Cassinelli, J. P.	11	4006
GSFC	Eiband, A. M.	UTAH STATE UNIV	NAS 5-24455	Banks, P. M.	13	3736
GSFC	Spencer, N. W.	UTAH STATE UNIV	NSG 5215	StMaurice, J. P.	13	3741
GSFC	Spencer, N. W.	UTAH STATE UNIV	NSG 5216	Foster, J. C.	13	3742
GSFC	Boggess, A.	VILLANOVA UNIVERSITY	NSG 5375	Sion, E. M.	11	3452
GSFC	Hirschmann, E.	VIRGINIA POLY INST	NAS 5-22577	Bostian, C. W.	45	3871
GSFC	Argeniero, P. D.	VIRGINIA POLY INST	NAS 5-25839	Havalick, R. M.	31	3872
GSFC	Kupperian, J. E., Jr.	VIRGINIA POLY INST	NSG 5221	Dennison, B. K.	11	3916
GSFC	Schmidt, R. L.	WALLA WALLA COLLEGE	NAS 5-25065	Heisler, R.	45	3960
GSFC	Boggess, A.	WASHINGTON ST UNIV	NSG 5383	Lutz, J. H.	11	3963
GSFC	Kupperian, J. E., Jr.	WASHINGTON UNIVERSTY	NSG 5187	Smith, W. H.	11	2785
GSFC	Boggess, A.	WESTRN KENTUCKY UNIV	NSG 5238	Hackney, R. L.	11	2270
GSFC	Boggess, A.	WHEATON COLLEGE	NSG 5376	Barker, T.	11	2620
GSFC	Reinhardt, V. S.	WILLIAMS COLLEGE	NSG 5218	Crampton, S. B.	13	2621
GSFC	Pritchard, J. A.	YALE UNIVERSITY	NGL 07-004-005	Barker, R. C.	45	1822
JPL	Estabrook, F. B.	SO UNIV-BATON ROUGE	NGR 19-005-006	Yang, C. H.	11	2280
JSC	Teasdale, W. E.	ALABAMA A&M UNIV	NAS 9-14770	Ingels, F. M.	45	1001
JSC	Harris, J. W.	ARIZONA STATE UNIV	NSG 9068	Buseck, P. R.	32	1088
JSC	Altchuler, S. I.	BAYLOR COL OF MED	NAS 9-13737	Johnson, P. C.	56	3527
JSC	Rippstein, W. J.	BAYLOR COL OF MED	NAS 9-14407	Duncan, W. C.	56	3528
JSC	Homick, J. L.	BAYLOR COL OF MED	NAS 9-14546	Igarashi, M.	56	3529
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-14662	Johnson, P. C.	56	3530
JSC	Kimzey, S. L.	BAYLOR COL OF MED	NAS 9-15457	Criswell, B. S.	56	3531
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-15478	Diferrante, N.	56	3532
JSC	Morrison, D. R.	BAYLOR COL OF MED	NAS 9-15669	Twomey, J. J.	59	3533
JSC	Leach, C. S.	BAYLOR COL OF MED	NAS 9-15891	Suki, W. N.	59	3534
JSC	Homick, J. L.	BRANDEIS UNIVERSITY	NAS 9-15147	Lackner, J. R.	59	2440
JSC	Harris, J. W.	BROWN UNIVERSITY	NGR 40-002-123	Rutherford, M. J.	32	3456
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-188	Wasserburg, G. J.	12	1191
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-190	Epstein, S.	13	1192
JSC	Harris, J. W.	CALIF INST OF TECH	NGL 05-002-338	Albee, A. L.	13	1194
JSC	Harris, J. W.	CALIF INST OF TECH	NGR 05-002-333	Tombrello, T. A.	13	1202
JSC	Harris, J. W.	CALIF INST OF TECH	NSG 9019	Ahrens, T. J.	19	1232
JSC	Byrns, Z. H.	CITY COLLEGE OF N Y	NAS 9-13642	Pierson, W. J.	13	2906
JSC	Land, C. K.	CITY COLLEGE OF N Y	NAS 9-13940	Schilling, D. L	45	2907

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JSC	Barnes, C. M.	CLARKSON COL OF TECH	NSG 9059	McNulty, P.	13	2918
JSC	Reveley, W. F.	CLEMSON UNIV-CLEMSON	NAS 9-13669	Gaddis, J. L.	46	3466
JSC	Hoffman, R. A.	COLORADO STATE UNIV	NSG 9045	Lett, J. T.	59	1739
JSC	Harris, J. W.	COLUMBIA UNIVERSITY	NGR 33-008-177	Horai, K.	13	2931
JSC	Altchuler, S. I.	DREXEL UNIVERSITY	NAS 9-15915	Kamel, I. L.	56	3349
JSC	Browne, I. D.	FORT LEWIS COLLEGE	NAS 9-15276	Baker, J. R.	13	1740
JSC	Nolte, R. W.	HARVARD UNIVERSITY	NAS 9-15326	Newton, R. W.	51	2449
JSC	Harris, J. W.	HARVARD UNIVERSITY	NGL 22-007-247	Hays, J. F.	12	2455
JSC	Leach, C. S.	HARVARD UNIVERSITY	NSG 9054	Moore-Ede, M. C.	56	2484
JSC	Potter, A. E.	HOUSTON BAPTIST UNIV	NSG 9038	Morgan, T. H.	11	3537
JSC	McCoy, J.	HOUSTON BAPTIST UNIV	NSG 9076	Warren, D. G.	19	3538
JSC	Savely, R. T.	HOWARD UNIVERSITY	NSG 9010	Choudhury, A. K.	45	1898
JSC	McKay, D. S.	INDIANA U-BLOOMINGTN	NSG 9072	Basu, A.	32	2141
JSC	Harris, J. W.	INDIANA U-BLOOMINGTN	NSG 9077	Basu, A.	32	2142
JSC	Baldwin, R. R.	KANSAS STATE UNIV	NAS 9-14899	Kanemasu, E. T.	31	2222
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-056	Goldstein, J. I.	12	3366
JSC	Potter, A. E.	LEHIGH UNIVERSITY	NGR 39-007-061	McCluskey, G. E., Jr.	11	3367
JSC	Harris, J. W.	LEHIGH UNIVERSITY	NGR 39-007-064	Sclar, C. B.	13	3368
JSC	Giuli, R. T.	LA STATE U-SHREVEPT	NAS 9-9317	Bankston, J. D., Jr.	11	2272
JSC	Altchuler, S. I.	LA STATE U-SHREVEPT	NAS 9-15950	Albright, J. A.	56	2273
JSC	Smith, M. C., Jr.	MARQUETTE UNIVERSITY	NAS 9-15711	Fitts, R. H.	59	3967
JSC	Luczkowski, S. M.	MASS INST OF TECH	NAS 9-15343	Young, L. R.	59	2515
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-540	Simmons, M. G.	13	2532
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-551	Burns, R. G.	12	2533
JSC	Harris, J. W.	MASS INST OF TECH	NGR 22-009-646	Uhlmann, D. R.	47	2535
JSC	Homick, J. L.	MIAMI UNIVERSITY	NAS 9-14538	Parker, D. E.	59	3202
JSC	Nitschke, H. A.	NEW MEX ST U-LAS CR	NAS 9-95482	Henry, D. G	39	2888
JSC	Fenner, R. G.	NEW MEX ST U-LAS CR	NAS 9-95497	Carver, K.	39	2889
JSC	Marquis, D. L.	OKLAHOMA STATE UNIV	NAS 9-15692	Ray, D. E.	32	3299
JSC	Nachtwey, D. S.	OREGON STATE UNIV	NAS 9-14860	Worrest, R. C.	54	3320
JSC	Harris, J. W.	OREGON STATE UNIV	NGL 38-002-039	Schmitt, R. A.	13	3323
JSC	Heydorn, R. P.	PAN AMERICAN UNIV	NSG 9033	Lemaster, E. W.	39	3539
JSC	Mendell, W.	PAN AMERICAN UNIV	NSG 9070	Glaser, F. M.	11	3540
JSC	Morrison, D. R.	PENN STATE U-UNIV PK	NAS 9-15566	Hymer, W. C.	51	3383
JSC	Morrison, D. R.	PENN STATE U-UNIV PK	NAS 9-15584	Todd, P. W.	56	3384
JSC	Bailey, J. V.	PENN STATE U-UNIV PK	NAS 9-15798	Mason, C. A.	45	3385
JSC	Browne, I. D.	PRAIRIE VIEW A&M U	NSG 9006	Brams, E. A.	39	3541
JSC	McEwen, M. C.	PURDUE UNIVERSITY	NAS 9-15081	Bauer, M. E.	39	2149
JSC	Joosten, R. E.	PURDUE UNIVERSITY	NAS 9-15325	Mroczynski, R.	39	2150
JSC	Erickson, J. D.	PURDUE UNIVERSITY	NAS 9-15466	Landgrebe, D. A.	39	2151
JSC	Amsbury, D. L.	PURDUE UNIVERSITY	NAS 9-15508	Hoffer, R M.	39	2152
JSC	Amsbury, D. L.	PURDUE UNIVERSITY	NAS 9-15889	Hoffer, R. M.	32	2153
JSC	Trevino, L. A.	RICE UNIVERSITY	NAS 9-15274	Wierm, F. A.	46	3548
JSC	Howard, J. K.	RICE UNIVERSITY	NAS 9-15630	Davis, S. H.	43	3549
JSC	Parker, R. A.	RICE UNIVERSITY	NAS 9-15940	DuFour, R. J.	11	3550
JSC	Harris, J. W.	RICE UNIVERSITY	NGL 44-006-127	Heymann, D.	32	3554
JSC	Harris, J. W.	RUTGERS U-N BRUNSWK	NSG 9065	Klein, L. C.	32	2878
JSC	Horz, F.	ST MARY'S UNIV-SA	NSG 9039	Hanss, R. E.	32	3565
JSC	Hull, W. E.	SO DAKOTA SCHL MINES	NAS 9-15522	Gowen, R. J.	59	3477
JSC	Bullock, H. E., Jr.	SO DAKOTA STATE UNIV	NAS 9-15345	Westin, F. C.	32	3479
JSC	Echelkamp, R. E.	SO UNIV-BATON ROUGE	NSG 9030	Grewal, G. S.	45	2285
JSC	Horrigan, D. J.	STATE UNIV NY-ALBANY	NAS 9-15802	Farhi, L. E.	59	3052
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-130	Bence, A. E.	13	3071
JSC	Harris, J. W.	STATE U NY-STONY BRK	NGL 33-015-174	Schaeffer, O. A.	12	3072
JSC	Harris, J. W.	STATE U NY-STONY BRK	NSG 9013	Hartung, J. B.	32	3088
JSC	Harris, J. W.	STATE U NY-STONY BRK	NSG 9044	Papike, J. J	13	3089
JSC	Nachtwey, D. S.	TEMPLE UNIVERSITY	NAS 9-14979	Urback, F.	56	3422
JSC	Kochner, J.	TENNESSEE STATE UNIV	NAS 9-15862	Sampson, C.	62	3487

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JSC	Smith, M. C., Jr.	TEXAS A&M UNIVERSITY	NAS 9-12434	Burns, E. E.	59	3577
JSC	Broune, I. D.	TEXAS A&M UNIVERSITY	NAS 9-13894	Freund, R. J.	22	3578
JSC	Buras, N. T.	TEXAS A&M UNIVERSITY	NAS 9-13904	Rouse, J. W., Jr.	39	3579
JSC	Browne, I. D.	TEXAS A&M UNIVERSITY	NAS 9-14689	Guseman, L. F., Jr.	22	3580
JSC	Blanchard, D.	TEXAS A&M UNIVERSITY	NAS 9-14828	Randall, J. D.	39	3581
JSC	Demel, K. J.	TEXAS A&M UNIVERSITY	NAS 9-14875	Newton, R. R.	32	3582
JSC	Farris, G. W.	TEXAS A&M UNIVERSITY	NAS 9-15311	Jean, B. R.	45	3583
JSC	Matthews, R. E.	TEXAS A&M UNIVERSITY	NAS 9-15451	Rouse, J. W., Jr.	13	3584
JSC	Amsbury, D. L.	TEXAS A&M UNIVERSITY	NAS 9-15465	Harlan, J. C.	32	3585
JSC	Amsbury, D. L.	TEXAS A&M UNIVERSITY	NAS 9-15468	Whitehorn, N.	99	3586
JSC	Fricks, D.	TEXAS A&M UNIVERSITY	NAS 9-15873	Morgan, P. W.	51	3587
JSC	Strouhal, G.	TEXAS A&M UNIVERSITY	NAS 9-15962	Norton, D.	47	3588
JSC	Day, J. L.	TEXAS TECH UNIV	NAS 9-11162	Portnoy, W. M.	45	3607
JSC	French, B. O.	TUSKEGEE INSTITUTE	NAS 9-13844	Sellers, J. P., Jr.	46	1029
JSC	Kimzey, S. L.	UNIV OF ARIZONA	NAS 9-14692	Bartels, P. H.	59	1104
JSC	Harris, J. W.	UNIV OF ARIZONA	NGR 03-002-388	Drake, M. J.	12	1123
JSC	Demel, K. J.	UNIV ARKANSAS-FAYETV	NAS 9-14251	Waite, W. P.	19	1164
JSC	Garcia, J. C.	UNIV CALIF-BERKELEY	NAS 9-14565	Colwell, R. N.	39	1427
JSC	Harris, J. W.	UNIV CALIF-BERKELEY	NGL 05-003-409	Reynolds, J. H.	13	1443
JSC	Rambaut, P. C.	UNIV CALIF-DAVIS	NAS 9-15203	Vogel, J. M.	56	1484
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGL 05-007-367	molnar, P.	12	1518
JSC	Harris, J. W.	UNIV CALIF-L ANGELES	NGR 05-007-289	Kaplan, I. R.	13	1521
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-148	Arnold, J. R.	12	1590
JSC	Harris, J. W.	UNIV CALIF-SAN DIEGO	NGL 05-009-150	Marti, K.	12	1591
JSC	Homick, J. L.	UNIV CALIF-SAN DIEGO	NSG 9048	Bullock, T. H.	56	1622
JSC	Alexander, W. C.	UNIV CALIF-SAN DIEGO	NSG 9075	West, J. B.	56	1623
JSC	Altchuler, S. I.	UNIV CALIF-SAN FRAN	NAS 9-15887	Genant, H. K.	56	1627
JSC	Amsbury, D. L.	UNIV CALIF-S BARBARA	NAS 9-15509	Strahler, A. H.	32	1640
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NGR 05-010-081	Tilton, G. R.	32	1648
JSC	Harris, J. W.	UNIV CALIF-S BARBARA	NSG 9020	Fuller, M. D.	19	1658
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-167	Anders, E.	13	2086
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-169	Clayton, R. N.	12	2087
JSC	Harris, J. W.	UNIV OF CHICAGO	NGL 14-001-171	Smith, J. V.	13	2088
JSC	Harris, J. W.	UNIV COLORADO-BOLDR	NSG 9036	Spetzler, H. A.	32	1793
JSC	Luczkowski, S. M.	UNIV OF DENVER	NAS 9-15469	Venditti, F. P.	46	1800
JSC	Nachtwey, D. S.	UNIV OF FLORIDA	NAS 9-15114	Green, A. E.	56	1929
JSC	Harris, J. W.	UNIV OF HAWAII-MANOA	NSG 9071	Philpotts, J. A.	32	2057
JSC	Sauer, R. L.	UNIV HOUSTON-HOUSTON	NAS 9-11676	Cox, J. E.	59	3611
JSC	Eggleston, J. M.	UNIV HOUSTON-HOUSTON	NAS 9-15193	Michalopoulos, C. O.	41	3612
JSC	Jackson, J. T.	UNIV HOUSTON-HOUSTON	NAS 9-15521	Morrow, J. R.	19	3613
JSC	Browne, I. D.	UNIV HOUSTON-HOUSTON	NAS 9-15543	Deuell, H. P., Jr.	39	3614
JSC	Kennedy, M. G.	UNIV HOUSTON-HOUSTON	NAS 9-15680	Lee, W. B.	49	3615
JSC	Alexander, W. C.	UNIV HOUSTON-HOUSTON	NAS 9-15767	Le. , J. .	56	3616
JSC	Schneider, H. J.	UNIV HOUSTON-HOUSTON	NAS 9-15882	Zlatkis, A.	51	3617
JSC	Smith, M. C., Jr.	UNIV HOUSTON-HOUSTON	NAS 9-15944	Bell, L.	99	3618
JSC	Alexander, W. C.	UNIV HOUSTON-CL LAKE	NAS 9-15642	Coleman, A. E.	56	3636
JSC	Harris, J. W.	UNIV HOUSTON-CL LAKE	NSG 9043	Blanford, G. E.	13	3637
JSC	Chassay, C. E.	UNIV ILLINOIS-URBANA	NAS 9-15328	Voss, E. W.	59	2115
JSC	Hull, W. E.	UNIV OF IOWA	NSG 9060	Abboud, F. M.	56	2221
JSC	Demel, K. J.	UNIV OF KANSAS	NAS 9-14052	Ulaby, F. T.	39	2230
JSC	Demel, K. J.	UNIV OF KANSAS	NAS 9-15421	Ulaby, F. T.	31	2231
JSC	Alexander, C.	UNIV OF KENTUCKY	NAS 9-15452	Bhagat, P. K.	56	2259
JSC	Harris, J. W.	UNIV OF MASS-AMHERST	NGL 22-010-089	Haggerty, S. E.	13	2614
JSC	Harris, J. W.	UNIV OF MASS-AMHERST	NSG 9069	Rhodes, J. M.	32	2619
JSC	Huntoon, C. L.	UNIV OF MIAMI	NAS 9-15473	Epstein, M.	56	1956
JSC	Homick, J. L.	UNIV MICH-ANN ARBOR	NAS 9-15244	Anderson, D. J.	56	2654
JSC	Reschke, M. F.	UNIV MICH-ANN ARBOR	NAS 9-15375	Anderson, D. J.	59	2655
JSC	Reschke, M. F.	UNIV MICH-ANN ARBOR	NAS 9-15663	Anderson, D. J.	56	2656

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JSC	Smith, M. C., Jr.	U MINN-MNPLS-ST PAUL	NAS 9-12560	Mitchell, J. R.	59	2705
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGL 24-005-225	Pepin, R. O.	13	2707
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NGR 24-005-223	Murthy, V. R.	13	2710
JSC	Harris, J. W.	U MINN-MNPLS-ST PAUL	NSG 9050	Weiblen, P. W.	32	2728
JSC	Eggleston, T. W.	UNIV MO-COLUMBIA	NAS 9-15477	Tranter, W. H.	45	2758
JSC	Harnage, M. J.	UNIV MO-COLUMBIA	NAS 9-15896	Rouse, J. W., Jr.	39	2759
JSC	Dawson, C. T.	UNIV MO-ROLLA	NAS 9-14848	Tranter, W. H.	45	2765
JSC	Harris, J. W.	UNIV OF NEW MEXICO	NGL 32-004-063	Keil, K.	12	2898
JSC	Harris, J. W.	UNIV OREGON-EUGENE	NGL 38-003-022	Weill, D. F.	13	3331
JSC	Lintott, J. E.	UNIV OF PENNSYLVANIA	NAS 9-15531	Brown, V. H.	59	3427
JSC	Barnes, C. M.	UNIV OF PENNSYLVANIA	NAS 9-15789	Shen, B. S.	39	3428
JSC	Harris, J. W.	UNIV OF PITTSBURGH	NSG 9056	Hapke, B. W.	13	3451
JSC	Rundel, R.	UNIV SAN FRANCISCO	NAS 9-15152	Benton, E. V.	56	1667
JSC	Thirolf, R. G.	UNIV SAN FRANCISCO	NAS 9-15337	Benton, E. V.	13	1668
JSC	Lofgren, G.	UNIV STHN COLORADO	NSG 9051	Smith, R. K.	19	1812
JSC	Kimzey, S. L.	UNIV TENNESSEE-KNOXV	NAS 9-15164	Dunn, C. D.	56	3508
JSC	Harris, J. W.	UNIV TENNESSEE-KNOXV	NGL 43-001-140	Taylor, L. A.	11	3511
JSC	Schneider, H. J.	U TENNESSEE-MEMPHIS	NAS 9-15670	Autian, J.	56	3518
JSC	Goodrich, W. D.	UNIV TEXAS-AUSTIN	NAS 9-13280	Bertin, J. J.	41	3646
JSC	Richard, R. R.	UNIV TEXAS-AUSTIN	NAS 9-14491	Hartwig, W. H.	49	3647
JSC	Potter, A. E.	UNIV TEXAS-AUSTIN	NAS 9-15067	Barnes, T.	11	3648
JSC	Pels, G. F.	UNIV TEXAS-AUSTIN	NAS 9-15217	Tucker, A. J.	49	3649
JSC	Nitschke, H. A.	UNIV TEXAS-AUSTIN	NAS 9-15401	Crow, G. I.	41	3650
JSC	Bond, V.	UNIV TEXAS-AUSTIN	NAS 9-15567	Szebekely, V. G.	12	3651
JSC	Harris, J. W.	UNIV TEXAS-AUSTIN	NSG 9021	Gose, W. A.	32	3690
JSC	Duke, M.	UNIV TEXAS-EL PASO	NSG 9062	Hoffer, J. M.	12	3713
JSC	Reschke, M. F.	UNIV TEXAS-GALVESTON	NAS 9-14641	Correia, M. J.	69	3714
JSC	Leach, C. S.	UNIV TEXAS-GALVESTON	NAS 9-15565	Ziegler, M. G.	59	3715
JSC	Harris, J. W.	U TEX HEALTH CTR-SA	NSG 9049	Morgan, J. W.	13	3718
JSC	Smith, M. A.	U TEX PUB HLTH-HUS	NAS 9-15388	Booth, F.	51	3719
JSC	Hull, W. E.	U TEX HEALTH CTR-DAL	NSG 9026	Blomquist, C. G.	56	3717
JSC	Harris, J. W.	UNIV OF WASHINGTON	NSG 9032	Adams, J. B.	32	3958
JSC	Harris, J. W.	UNIV OF WASHINGTON	NSG 9052	Brownlee, D. E.	31	3959
JSC	Barnes, C. M.	UNIV OF WEST FLORIDA	NAS 9-15417	Schaefer, H. J.	59	1967
JSC	Cintron, N. M.	UNIV WISC-MADISON	NAS 9-15580	Schnoes, H. K.	56	3987
JSC	Nachtwey, D. S.	UTAH STATE UNIV	NAS 9-14871	Caldwell, M. M.	54	3740
JSC	Hull, W. E.	VIRGINIA COMNWLTH U	NSG 9063	Eckberg, D. L.	56	3867
JSC	Day, J. L.	VIRGINIA POLY INST	NAS 9-15287	Rivers, D. B.	56	3876
JSC	Harris, J. W.	WASHINGTON UNIVERSTY	NGL 26-008-065	Walker, R. M.	13	2781
JSC	Harris, J. W.	WASHINGTON UNIVERSTY	NSG 9055	Haskin, L. A.	32	2792
JSC	Williams, R.	WASHINGTON UNIVERSTY	NSG 9073	Haskin, L. A.	19	2793
KSC	Howard, F. S.	FLORIDA INST OF TECH	NAS10-9461	Thomas, J. J.	43	1914
KSC	Mattson, J. D.	KENTUCKY STATE UNIV	NSG 801	Kloek, G.	59	2258
KSC	Perkins, E. E.	SAVANNAH STATE COL	NSG 803	Ghuman, G. S.	39	2017
KSC	Jafferis, W.	UNIV OF ARIZONA	NAS10-8518	Krider, E. P.	31	1106
KSC	Buchanan, P.	UNIV OF CENTRAL FLA	NAS10-8986	Vickers, D. H.	39	1924
KSC	Springer, D. A.	UNIV OF CENTRAL FLA	NAS10-9455	Riad, S. M.	49	1925
KSC	Pope, C. D.	UNIV OF FLORIDA	NAS10-8920	Manvi, R.	39	1930
KSC	Pope, C. D.	UNIV OF FLORIDA	NAS10-9168	Gerber, J. F.	39	1931
KSC	Jafferis, W.	UNIV OF FLORIDA	NAS10-9378	Heasley, J. N.	45	1932
KSC	Bland, R. A.	UNIV OF FLORIDA	NAS10-9466	Arvanitis, L. G.	39	1933
KSC	Pope, C. D.	UNIV OF FLORIDA	NAS10-9611	Gerber, J. F.	31	1934
KSC	Horn, F. W.	UNIV OF FLORIDA	NAS10-9666	Blazquez, C. H.	39	1935
KSC	Jafferis, W.	UNIV OF FLORIDA	NGR 10-005-169	Uman, M. A.	31	1939
KSC	Bland, R. A.	UNIV OF MIAMI	NAS10-9410	Lee, S. S.	46	1957
KSC	Bryan, C. J.	UNIV STHN COLORADO	NSG 806	Mahan, K. I.	12	1810
LARC	Spence, D. C.	ARIZONA STATE UNIV	NAS 1-15168	Greeley, R.	31	1071
LARC	Yates, E. C., Jr.	BOSTON UNIVERSITY	NGR 22-004-030	Morino, L.	41	2432

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LARC	Powell, C. A.	BOSTON UNIVERSITY	NSG 1644	Hellman, R. D.	69	2433
LARC	Meador, W. E., Jr.	BROOKLYN COLLEGE	NSG 1378	Franco, V.	13	2904
LARC	Townsend, J. C.	BROWN UNIVERSITY	NSG 1617	Sirovich, L.	41	3457
LARC	Williams, T. S., Jr.	CALIF INST OF TECH	NAS 1-9703	Anderson, D. L.	39	1167
LARC	Houbolt, J. C.	CALIF INST OF TECH	NAS 1-15668	Culick, F. E.	41	1168
LARC	Starns, J. H., Jr.	CALIF INST OF TECH	NSG 1483	Knauss, W. G.	41	1204
LARC	Byvik, C. E.	CHRISTPHR NEWPRT COL	NSG 1514	Buoncristiani, A. M.	13	3754
LARC	Wilson, J. W.	CHRISTPHR NEWPRT COL	NSG 1614	Chang, C. K.	19	3755
LARC	Schroeder, L. C.	CITY COLLEGE OF N Y	NAS 1-15669	Pierson, W. J.	33	2905
LARC	Hess, R. V.	CITY COLLEGE OF N Y	NSG 1485	Tchen, C. M.	39	2910
LARC	Crouch, R. K.	CLARKSON COL OF TECH	NSG 1572	Carlson, F.	13	2916
LARC	Poe, C. C., Jr.	CLEMSON UNIV-CLEMSON	NSG 1297	Goree, J. G.	46	3467
LARC	Doggett, R. V., Jr.	CLEMSON UNIV-CLEMSON	NSG 1411	Rudisill, C. S.	41	3468
LARC	Dunning, R. S.	CLEVELAND STATE UNIV	NSG 1445	Chukwu, E. N.	41	3192
LARC	Smith, D. D.	COLLEGE OF WM & MARY	NAS 1-9990	Heeman, W.	19	3756
LARC	Anderson, A. F.	COLLEGE OF WM & MARY	NAS 1-14972	Aceto, H., Jr.	99	3757
LARC	Greene, R. F., Jr.	COLLEGE OF WM & MARY	NAS 1-15899	Barnes, C. H., Jr.	99	3758
LARC	Tanner, J. A.	COLLEGE OF WM & MARY	NAS 1-15965	Andersen, C. M.	46	3759
LARC	Sullivan, E. M.	COLLEGE OF WM & MARY	NCC 1 3	Smith, M. A.	31	3760
LARC	Sullivan, E. M.	COLLEGE OF WM & MARY	NCC 1 16	Smith, M. A.	31	3761
LARC	Anderson, A. F.	COLLEGE OF WM & MARY	NGL 47-006-058	Rublein, G. T.	99	3762
LARC	Burks, H. D.	COLLEGE OF WM & MARY	NSG 1095	Kranbuehl, D. E.	12	3763
LARC	Sullivan, E. M.	COLLEGE OF WM & MARY	NSG 1203	Park, J. H.	31	3764
LARC	Miller, W. E.	COLLEGE OF WM & MARY	NSG 1385	Sher A.	13	3765
LARC	Harris, J. L.	COLLEGE OF WM & MARY	NSG 1435	Donegan, M. K.	21	3766
LARC	Hohl, F.	COLLEGE OF WM & MARY	NSG 1564	Zang, T. A.	13	3767
LARC	Migneault, G. E.	COLLEGE OF WM & MARY	NSG 1625	Schaefer, M. K.	49	3768
LARC	Foudriat, E. C.	COLLEGE OF WM & MARY	NSG 1626	Feyock, S.	22	3769
LARC	Fripp, A. L.	COLLEGE OF WM & MARY	NSG 1653	Sher, A.	13	3770
LARC	Harrison, E. F.	COLORADO STATE UNIV	NAS 1-15580	VonderHaar, T. H.	31	1709
LARC	Lassiter, W. S.	COLORADO STATE UNIV	NAS 1-15925	Meroney, R. N.	31	1710
LARC	Exton, R. J.	COLORADO STATE UNIV	NSG 1594	She, C. Y.	13	1722
LARC	Harris, R. L., Sr.	COLUMBIA UNIVERSITY	NCC 1 5	Galanter, E.	41	2926
LARC	Mixson, J. S.	COLUMBIA UNIVERSITY	NSG 1450	Vaicaitis, R.	41	2932
LARC	Harris, R. L., Sr.	COLUMBIA UNIVERSITY	NSG 1541	Galanter, E.	41	2933
LARC	Stephens, D. G.	COLUMBIA UNIVERSITY	NSG 1550	Galanter, E.	49	2934
LARC	Stephens, D. G.	COLUMBIA UNIVERSITY	NSG 1616	Borsky, P. N.	49	2935
LARC	Williams, T. S., Jr.	CORNELL UNIVERSITY	NAS 1-9683	Sagan, C. E.	99	2950
LARC	Hutchby, J. A.	CORNELL UNIVERSITY	NSG 1642	Frey, J.	45	2968
LARC	Conway, E. J.	CORNELL UNIVERSITY	NSG 1651	Ballantyne, J. M.	45	2969
LARC	Murrow, H. N.	DEL MAR COLLEGE	NSG 1615	Trevino, G.	41	3535
LARC	Russell, J. M., III	DREXEL UNIVERSITY	NAS 1-14393	House, F. B.	31	3346
LARC	Price, D. B.	DREXEL UNIVERSITY	NSG 1496	Calise, A. J.	41	3350
LARC	Smith, G. L.	DREXEL UNIVERSITY	NSG 1545	House, F. B	31	3351
LARC	Poe, C. C., Jr.	DREXEL UNIVERSITY	NSG 1606	Awerbuch, J	47	3352
LARC	Hayduk, R. J.	DUKE UNIVERSITY	NSG 1647	Meloah, R. J.	49	3106
LARC	Houck, J. A.	EMBRY-RIDDLE AERO U	NAS 1-15724	Gandelman, J. H.	41	1906
LARC	Williams, T. S., Jr.	FLORIDA STATE UNIV	NAS 1-9693	Hess, S. K.	32	1915
LARC	McMaster, L. R.	FLORIDA STATE UNIV	NAS 1-14930	Craig, R. A.	31	1916
LARC	Duberg, J. E.	GEORGE WASHINGTON U	NAS 1-14605	Liebowitz, H.	41	1844
LARC	Orr, H. D., III	GEORGE WASHINGTON U	NCC 1 1	Liebowitz, H.	31	1847
LARC	Margeolis, K.	GEORGE WASHINGTON U	NCC 1 14	Liebowitz, H.	41	1848
LARC	Callis, L. B., Jr	GEORGE WASHINGTON U	NCC 1 19	Liebowitz, H.	31	1849
LARC	Bobbitt, P. J.	GEORGE WASHINGTON U	NCC 1 24	Liebowitz, H	41	1850
LARC	Erickson, W. D.	GEORGE WASHINGTON U	NCC 1 27	Liebowitz, H	41	1851
LARC	Duberg, J. E.	GEORGE WASHINGTON U	NGL 09-010-053	Liebowitz, H.	49	1852
LARC	Bobbitt, P. J.	GEORGE WASHINGTON U	NGR 09-010-074	Liebowitz, H	41	1853
LARC	Anderson, R. A.	GEORGE WASHINGTON U	NGR 09-010-078	Liebowitz, H	41	1854

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LARC	Margeolis, K.	GEORGE WASHINGTON U	NGR 09-010-085	Liebowitz, H	41	1855
LARC	Croswell, W. F.	GEORGE WASHINGTON U	NGR 09-010-096	Liebowitz, H.	45	1856
LARC	Callis, L. B., Jr.	GEORGE WASHINGTON U	NSG 1026	Rogerson, A. C.	31	1857
LARC	Croswell, W. F.	GEORGE WASHINGTON U	NSG 1110	Liebowitz, H.	45	1858
LARC	Swann, R. T.	GEORGE WASHINGTON U	NSG 1155	Liebowitz, H	47	1859
LARC	Suit, W. T.	GEORGE WASHINGTON U	NSG 1161	Liebowitz, H.	41	1860
LARC	Callis, L. B., Jr.	GEORGE WASHINGTON U	NSG 1216	Liebowitz, H.	31	1861
LARC	Costen, R. C.	GEORGE WASHINGTON U	NSG 1251	Rogerson, A. C.	31	1862
LARC	Roderick, G. L.	GEORGE WASHINGTON U	NSG 1289	Liebowitz, H.	47	1863
LARC	Crews, J. H., Jr.	GEORGE WASHINGTON U	NSG 1449	Liebowitz, H	47	1864
LARC	Greene, G. C.	GEORGE WASHINGTON U	NSG 1474	Liebowitz, H.	13	1865
LARC	Harris, J. L.	GEORGE WASHINGTON U	NSG 1508	Foley, J. D.	21	1866
LARC	Smith, G. L.	GEORGE WASHINGTON U	NSG 1555	Liebowitz, H.	31	1867
LARC	Elber, W.	GEORGE WASHINGTON U	NSG 1556	Gross, D.	21	1868
LARC	Kemp, W. B., Jr.	GEORGE WASHINGTON U	NSG 1585	Liebowitz, H	41	1869
LARC	O'Brien, T. K.	GEORGE WASHINGTON U	NSG 1604	Yang, J. N	47	1870
LARC	Lawrence, G. F.	GEORGIA INST OF TECH	NAS 1-14351	Zimmer, R. P.	31	1976
LARC	O'Neal, R. L.	GEORGIA INST OF TECH	NAS 1-14654	Blue, M. D.	45	1977
LARC	Hall, J. B., Jr.	GEORGIA INST OF TECH	NAS 1-14947	Wilkins, R. D.	99	1978
LARC	Young, W. H., Jr.	GEORGIA INST OF TECH	NAS 1-15158	Gray, R. B.	41	1979
LARC	O'Neal, R. L.	GEORGIA INST OF TECH	NAS 1-15370	Gaylord, T. K.	45	1980
LARC	McMaster, L. R.	GEORGIA INST OF TECH	NSG 1493	Grams, G. W.	31	1993
LARC	Lee, B. L.	GEORGIA INST OF TECH	NSG 1592	Pierce, G. A.	41	1994
LARC	McMaster, L. R.	GEORGIA INST OF TECH	NSG 1643	Cunnold, D. M.	31	1995
LARC	Jewel, J. W., Jr.	HAMPTON INSTITUTE	NAS 1-14507	Williams, G. K	41	3777
LARC	Erickson, W. D.	HAMPTON INSTITUTE	NAS 1-14832	Darden, G. C.	19	3778
LARC	Knox, C. E.	HAMPTON INSTITUTE	NAS 1-15445	Hargrove, A.	41	3779
LARC	Beckwith, I. E	HAMPTON INSTITUTE	NAS 1-15877	Anyiwo, J. C.	41	3780
LARC	Cox, J. J.	HAMPTON INSTITUTE	NCA 1-25	Slaughter, L H.	49	3781
LARC	Haigler, G. W.	HAMPTON INSTITUTE	NCC 1 7	Shan, S. N	21	3782
LARC	Poole, L. R.	HAMPTON INSTITUTE	NCC 1 11	Peterson, A. M.	39	3783
LARC	Jobson, D. J.	HAMPTON INSTITUTE	NSG 1294	Trehan, A. K.	45	3784
LARC	Hogge, J. E.	HAMPTON INSTITUTE	NSG 1478	Hargrove, A.	21	3785
LARC	Beckwith, I. E.	HAMPTON INSTITUTE	NSG 1505	Anyiwo, J. C.	41	3786
LARC	Katzberg, S. J.	HAMPTON INSTITUTE	NSG 1552	Trehan, A. K.	45	3787
LARC	Hohl, F.	HAMPTON INSTITUTE	NSG 1595	Han, K. S.	13	3788
LARC	Williams, T. S., Jr.	HARVARD UNIVERSITY	NAS 1-10492	McElroy, M. B.	31	2441
LARC	Horner, G. C.	HOWARD UNIVERSITY	NSG 1320	Jones, I. W.	42	1886
LARC	Hammer, H. A.	HOWARD UNIVERSITY	NSG 1414	Bainum, P M.	49	1887
LARC	Adelman, H. M.	ILL INST OF TECH	NSG 1266	Haftka, R T	41	2060
LARC	Hefner, J. N.	ILL INST OF TECH	NSG 1591	Nagib, H. M.	41	2061
LARC	Salas, M. D.	IOWA STATE UNIV	NCC 1 17	Anderson, D. A.	41	2187
LARC	Fralich, R. W.	IOWA STATE UNIV	NSG 1372	McDaniel, T. J	49	2191
LARC	Salas, M. D.	IOWA STATE UNIV	NSG 1535	Anderson, D A.	41	2192
LARC	Shoosmith, J. N.	IOWA STATE UNIV	NSG 1538	Feinberg, R B.	21	2193
LARC	Morris, D. J.	IOWA STATE UNIV	NSG 1582	Iversen, J. D	41	2194
LARC	Tanner, J. A.	IOWA STATE UNIV	NSG 1605	Baumgarten, J. R.	46	2195
LARC	Abel, I.	ISRAEL INST OF TECH	NSG 7373	Nissim, E.	41	4033
LARC	Bavuso, S. J.	JOHNS HOPKINS UNIV	NSG 1442	Masson, G M	45	2316
LARC	Woods, D. C.	LE MOYNE-OWEN COL	NSG 1593	Matthews, N	31	3485
LARC	Everett, R. A., Jr.	LEHIGH UNIVERSITY	NGR 39-007-011	Erdogan, F.	21	3364
LARC	Williams, T. S., Jr.	MASS INST OF TECH	NAS 1-9684	Biemann, K.	39	2485
LARC	McMaster, L. R.	MASS INST OF TECH	NAS 1-14932	Cunnold, D M.	31	2486
LARC	Hubbard, H H.	MASS INST OF TECH	NAS 1-15154	Ingard, K. V	41	2487
LARC	Maddalon, D. V.	MASS INST OF TECH	NAS 1-15268	Taneja, N. K.	41	2488
LARC	Harris, R. L., Sr	MASS INST OF TECH	NCC 1 23	Tole, J. R.	41	2517
LARC	Downing, D. R.	MASS INST OF TECH	NGL 22-009-640	Simpson, R. W.	41	2527
LARC	Byvik, C. E.	MASS INST OF TECH	NSG 1048	Wrighton, M. S.	13	2543

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LARC	Byvik, C. E.	MASS INST OF TECH	NSG 1190	Gatos, H. C.	47	2544
LARC	Armstrong, E. S.	MASS INST OF TECH	NSG 1312	Stein, G.	45	2545
LARC	Shoosmith, J. N.	MASS INST OF TECH	NSG 1323	Moses, J.	22	2546
LARC	Boyden, R. P.	MASS INST OF TECH	NSG 1356	Covert, E. E.	41	2547
LARC	Akey, N. D.	MASS INST OF TECH	NSG 1413	Fonstad, C. G.	13	2548
LARC	Bushnell, D. M.	MASS INST OF TECH	NSG 1453	Melcher, J. R.	41	2549
LARC	Boyden, R. P.	MASS INST OF TECH	NSG 1502	Covert, E. E.	41	2550
LARC	Price, H. L.	MASS INST OF TECH	NSG 1504	McGarry, F. J.	47	2551
LARC	Singh, J. J.	MASS INST OF TECH	NSG 1551	Greytak, T. J.	13	2552
LARC	Armstrong, E. S.	MASS INST OF TECH	NSG 1553	Stein, G.	45	2553
LARC	Greene, G. C.	MASS INST OF TECH	NSG 1583	Ingard, K. V.	13	2554
LARC	Hohl, F.	MIAMI UNIVERSITY	NCC 1 12	Wells, W. E.	13	3203
LARC	Hohl, F.	MIAMI UNIVERSITY	NSG 1383	Wells, W. E.	13	3204
LARC	Hohl, F.	MIAMI UNIVERSITY	NSG 1396	Wells, W. E.	13	3205
LARC	South, J. C., Jr.	MISSISSIPPI STATE U	NGR 25-001-055	Thompson, J. F.	41	2742
LARC	Hall, A. W.	MISSISSIPPI STATE U	NSG 1083	Rogerson, A. C.	41	2743
LARC	Stewart, E. C.	MISSISSIPPI STATE U	NSG 1249	Bennett, A. G., Jr.	41	2744
LARC	Hassell, J. L., Jr.	MISSISSIPPI STATE U	NSG 1402	Bennett, A G., Jr.	41	2745
LARC	Judd, J. H.	MISSISSIPPI STATE U	NSG 1454	Bennett, A. G., Jr.	41	2746
LARC	Holmes, B. J.	MISSISSIPPI STATE U	NSG 1511	Cross, E. J.	41	2747
LARC	Smith, R. E.	MISSISSIPPI STATE U	NSG 1577	Thompson, J. F.	21	2748
LARC	Thomas, J. L.	MISSISSIPPI STATE U	NSG 1623	Bennett, A. G., Jr.	41	2749
LARC	StClair, T. L.	MISS UNIV FOR WOMEN	NSG 1539	Pratt, J. R.	12	2750
LARC	Huber, P. W.	NEW YORK UNIVERSITY	NGR 33-016-131	Agnone, A. M.	41	3000
LARC	Edwards, C. L.	NEW YORK UNIVERSITY	NSG 1444	Zakkay, V.	41	3003
LARC	Liu, C. H.	NEW YORK UNIVERSITY	NSG 1469	Ting, L.	41	3004
LARC	Darden, C. M.	NEW YORK UNIVERSITY	NSG 1576	Ting, L	13	3005
LARC	South, J. C., Jr.	NEW YORK UNIVERSITY	NSG 1579	Garabedian, P R.	21	3006
LARC	Knight, J. C.	NEW YORK UNIVERSITY	NSG 1610	Schwartz, J. T.	21	3007
LARC	Rhodes, M. D.	NO CAR A&T STATE U	NSG 1296	Sharma, A. V.	47	3111
LARC	Hutchby, J. A.	NO CAR A&T STATE U	NSG 1390	Stefanakos, E.	45	3112
LARC	Buckley, J. D.	NO CAR A&T STATE U	NSG 1516	Botros, B. M.	47	3113
LARC	Rhodes, M. D.	NO CAR A&T STATE U	NSG 1631	Sharma, A. V.	44	3114
LARC	Lamar, J. E.	NO CAROLINA STATE U	NCC 1 13	Dejarnette, F. R.	41	3121
LARC	South, J. C., Jr.	NO CAROLINA STATE U	NCC 1 22	Hassan, H. A.	41	3122
LARC	Mayes, W. H.	NO CAROLINA STATE U	NGL 34-002-095	Horvath, J. J.	69	3123
LARC	Croswell, W. F.	NO CAROLINA STATE U	NGR 34-002-188	Kauffman, J. F.	45	3124
LARC	Meador, W. E., Jr.	NO CAROLINA STATE U	NSG 1058	Hassan, H. A.	13	3126
LARC	Crane, H. L.	NO CAROLINA STATE U	NSG 1077	Smetana, F. O.	41	3127
LARC	Mayes, W. H.	NO CAROLINA STATE U	NSG 1205	Hart, F. D.	13	3128
LARC	Benz, H. F.	NO CAROLINA STATE U	NSG 1353	Snyder, W. E.	45	3129
LARC	Hatfield, J. J.	NO CAROLINA STATE U	NSG 1355	Rajala, S. A.	45	3130
LARC	Brooks, T. F.	NO CAROLINA STATE U	NSG 1377	Hodgson, T. H.	41	3131
LARC	Long, E. R., Jr.	NO CAROLINA STATE U	NSG 1463	Memory, J. D.	47	3132
LARC	Park, S. K.	NO CAROLINA STATE U	NSG 1549	Roulier, J. A.	22	3133
LARC	Long, E. R., Jr.	NO CAROLINA STATE U	NSG 1562	Fornes, R. E.	13	3134
LARC	Crane, H. L.	NO CAROLINA STATE U	NSG 1584	Smetana, F. O.	41	3135
LARC	Croswell, W. F.	NO CAROLINA STATE U	NSG 1588	Kauffman, J. F.	45	3136
LARC	Barnwell, R. W.	OHIO STATE UNIV	NAS 1-14406	Gregorek, G. M.	41	3207
LARC	Greene, G. C.	OHIO STATE UNIV	NAS 1-15680	Gregorek, G M	41	3208
LARC	Bergeron, H. P.	OHIO STATE UNIV	NAS 1-15969	Weislogel, G. S.	41	3209
LARC	Gilreath, M. C.	OHIO STATE UNIV	NSG 1498	Burnside, W. D.	45	3221
LARC	Gilreath, M. C.	OHIO STATE UNIV	NSG 1613	Peters, L.	45	3222
LARC	Holmes, B. J.	OHIO STATE UNIV	NSG 1620	Gilson, R. D.	41	3223
LARC	Barnwell, R. W.	OHIO STATE UNIV	NSG 1622	Burggraf, O. R.	41	3224
LARC	Downing, D. R.	OHIO UNIVERSITY	NGR 36-009-017	McFarland, R. H.	45	3242
LARC	Seiner, J. M.	OKLAHOMA STATE UNIV	NSG 1467	McLaughlin, D. K.	41	3300
LARC	Anderson, A. F.	OLD DOMINION UNIV	NAS 1-14193	Maygarden, E. M.	99	3789

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LARC	Erickson, W. D.	OLD DOMINION UNIV	NAS 1-15648	Unavailable	41	3790
LARC	Reichle, H. G., Jr.	OLD DOMINION UNIV	NCC 1 2	Kindle, E. C.	31	3791
LARC	Peterson, J. B., Jr.	OLD DOMINION UNIV	NCC 1 9	Goglia, G. L.	41	3792
LARC	Erickson, W. D.	OLD DOMINION UNIV	NGR 47-003-052	Roberts, A. S., Jr.	41	3793
LARC	Tripp, J. S.	OLD DOMINION UNIV	NSG 1079	Tcheng, P. L.	45	3796
LARC	Dodgen, J. A.	OLD DOMINION UNIV	NSG 1131	Kindle, E. C.	31	3797
LARC	Kershner, D. D.	OLD DOMINION UNIV	NSG 1143	Barna, P. S.	41	3798
LARC	Davis, J. G., Jr.	OLD DOMINION UNIV	NSG 1167	Thornton, E. A.	41	3799
LARC	Hellbaum, R. F.	OLD DOMINION UNIV	NSG 1177	Rogerson, A. C.	45	3800
LARC	Melfi, L. T., Jr.	OLD DOMINION UNIV	NSG 1271	Brock, F. J.	13	3801
LARC	Card, M. F.	OLD DOMINION UNIV	NSG 1279	Tweed, J.	49	3802
LARC	Peterson, J. B., Jr.	OLD DOMINION UNIV	NSG 1315	Goglia, G. L.	41	3803
LARC	Wieting, A. R.	OLD DOMINION UNIV	NSG 1321	Thornton, E. A.	49	3804
LARC	Holmes, H. K.	OLD DOMINION UNIV	NSG 1324	Zuckerwar, A. J.	13	3805
LARC	Campbell, T. G.	OLD DOMINION UNIV	NSG 1331	Becher, J.	45	3806
LARC	McMaster, L. R.	OLD DOMINION UNIV	NSG 1341	Chu, W. P.	31	3807
LARC	Peterson, J. B., Jr.	OLD DOMINION UNIV	NSG 1357	Kuhlman, J. M.	41	3808
LARC	Hohl, F.	OLD DOMINION UNIV	NSG 1362	Harries, W. L.	13	3809
LARC	Gainer, P. A.	OLD DOMINION UNIV	NSG 1379	Varanasi, M. R.	45	3810
LARC	Phillips, D. H.	OLD DOMINION UNIV	NSG 1393	Ake, R. L.	12	3811
LARC	Reichle, H. G., Jr.	OLD DOMINION UNIV	NSG 1394	Kindle, E. C.	31	3812
LARC	Beck, S. M.	OLD DOMINION UNIV	NSG 1395	Kindle, E. C.	31	3813
LARC	Hanks, B. R.	OLD DOMINION UNIV	NSG 1459	Ibrahim, S. R.	46	3814
LARC	Graves, R. A., Jr.	OLD DOMINION UNIV	NSG 1464	Tiwari, S. N.	41	3815
LARC	Hoell, J. M.	OLD DOMINION UNIV	NSG 1466	Copeland, G. E.	31	3816
LARC	Groom, N. J.	OLD DOMINION UNIV	NSG 1473	Roberts, A. S., Jr.	49	3817
LARC	Browell, E. V.	OLD DOMINION UNIV	NSG 1477	Kindle, E. C.	39	3818
LARC	Creedon, J. F.	OLD DOMINION UNIV	NSG 1480	Tcheng, P. L.	41	3819
LARC	Bushnell, D. M.	OLD DOMINION UNIV	NSG 1491	Goglia, G. L.	41	3820
LARC	Sutton, K.	OLD DOMINION UNIV	NSG 1500	Tiwari, S. N.	49	3821
LARC	Kilgore, R. A.	OLD DOMINION UNIV	NSG 1503	Goglia, G. L.	41	3822
LARC	Mikulas, M. M., Jr.	OLD DOMINION UNIV	NSG 1507	Prabhakaran, R.	42	3823
LARC	Dwoyer, D. L.	OLD DOMINION UNIV	NSG 1517	Cooke, C. H.	41	3824
LARC	Moul, M. T.	OLD DOMINION UNIV	NSG 1519	Liberty, S. R.	41	3825
LARC	Lisagor, W. B.	OLD DOMINION UNIV	NSG 1521	Cupschalk, S. G.	47	3826
LARC	Suttles, J. T.	OLD DOMINION UNIV	NSG 1522	Tiwari, S. N.	31	3827
LARC	Yates, E. C., Jr.	OLD DOMINION UNIV	NSG 1560	Kandil, O. A.	41	3828
LARC	Lamar, J. E.	OLD DOMINION UNIV	NSG 1561	Goglia, G. L.	41	3829
LARC	Gentry, G. L.	OLD DOMINION UNIV	NSG 1563	Barna, P. S.	41	3830
LARC	Waller, M. C.	OLD DOMINION UNIV	NSG 1565	Rana, D. S.	21	3831
LARC	Hohl, F.	OLD DOMINION UNIV	NSG 1568	Harries, W. L.	13	3832
LARC	Bushnell, D. M.	OLD DOMINION UNIV	NSG 1618	Grosch, C. E.	41	3833
LARC	Hefner, J. N.	OLD DOMINION UNIV	NSG 1634	Ash, R. L.	41	3834
LARC	Harvey, W. D.	OLD DOMINION UNIV	NSG 1645	Goglia, G. L.	41	3835
LARC	Card, M. F.	OLD DOMINION UNIV	NSG 1649	Ibrahim, S. R.	46	3836
LARC	Moul, M. T.	OLD DOMINION UNIV	NSG 1650	Liberty, S. R.	41	3837
LARC	Gilreath, M. C.	OLD DOMINION UNIV	NSG 1655	Mielke, R. R.	45	3838
LARC	Fisher, B. D.	PENN STATE U-UNIV PK	NSG 1308	McCormick, B. W.	41	3395
LARC	Fripp, A. L.	PENN STATE U-UNIV PK	NSG 1387	White, W. B.	47	3396
LARC	Gatski, T. B.	PENN STATE U-UNIV PK	NSG 1580	Morris, P. J.	41	3397
LARC	Salas, M. D.	POLY INST OF NY	NSG 1248	Moretti, G.	41	3018
LARC	Swanson, R. C.	POLY INST OF NY	NSG 1559	Rubin, S. G.	41	3019
LARC	Williams, T. S., Jr.	POMONA COLLEGE	NAS 1-11854	Baird, A. K.	12	1260
LARC	Williams, T. S., Jr.	PRINCETON UNIVERSITY	NAS 1-9705	Hargraves, R. B.	19	2833
LARC	Miller, G. K.	PRINCETON UNIVERSITY	NAS 1-13502	Sockel, E.	41	2834
LARC	Downing, D. R.	PRINCETON UNIVERSITY	NAS 1-15758	Stengel, R. F.	41	2835
LARC	Niessen, F. R.	PRINCETON UNIVERSITY	NAS 1-15764	Stengel, R. F.	41	2836
LARC	Downing, D. R.	PRINCETON UNIVERSITY	NGL 31-001-252	Graham, D.	41	2846

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LARC	Honaker, W. C.	PRINCETON UNIVERSITY	NSG 1070	Miles, R. B.	13	2848
LARC	Mixson, J. S.	PRINCETON UNIVERSITY	NSG 1253	Dowell, E. H.	41	2849
LARC	Schy, A. A.	PRINCETON UNIVERSITY	NSG 1587	Stengel, R. F.	41	2850
LARC	Jones, J. J.	PRINCETON UNIVERSITY	NSG 1630	Bienkowski, G. K.	41	2851
LARC	Swanson, R. C.	PURDUE UNIVERSITY	NSG 1635	McCarthy, D. R.	41	2158
LARC	Swann, R. T.	RENSSELAER POLY-NY	NSG 1510	Ansell, G. S.	47	3037
LARC	Barnwell, R. W.	RENSSELAER POLY-NY	NSG 1624	Nagamatsu, H. T.	41	3038
LARC	Meador, W. E., Jr.	RENSSELAER POLY-NY	NSG 1628	Schwarz, H. J.	13	3039
LARC	Rogers, J. L.	RENSSELAER POLY-NY	NSG 1636	Feeser, L. J.	44	3040
LARC	Jones, W. L.	RUTGERS U-N BRUNSWK	NSG 1566	Delnore, V. E.	33	2873
LARC	Levine, J. S.	SAN DIEGO STATE UNIV	NSG 1430	Angione, R. J.	31	1262
LARC	Bushnell, D. M.	SOUTHERN METHODIST U	NSG 1548	Simpson, R. L	41	3566
LARC	O'Neal, R. L.	SO UNIV-BATON ROUGE	NAS 1-15335	Scott, R. L., Jr.	31	2279
LARC	Williams, T. S., Jr.	STANFORD UNIVERSITY	NAS 1-9692	Lederberg, J.	59	1305
LARC	Doggett, R. V., Jr.	STANFORD UNIVERSITY	NGL 05-020-243	Ashley, H.	41	1350
LARC	Shoosmith, J. N.	STANFORD UNIVERSITY	NSG 1443	Golub, G. H.	21	1370
LARC	Williams, T. S., Jr.	STATE U NY-STONY BRK	NAS 1-10493	Owen, T.	39	3064
LARC	Bushnell, D. M.	STEVENS INST OF TECH	NSG 1619	Salwen, H.	41	2879
LARC	Benz, H. F.	SYRACUSE UNIVERSITY	NSG 1602	Kowel, S. T.	45	3092
LARC	Segura, R.	SYRACUSE UNIVERSITY	NSG 1611	Kowel, S. T.	45	3093
LARC	Hayes, P. J.	SYRACUSE UNIVERSITY	NSG 1654	Schroder, K.	47	3094
LARC	South, J. C., Jr.	TEXAS A&M UNIVERSITY	NSG 1174	Carlson, L. A.	41	3593
LARC	Lytle, C. D.	TEXAS A&M UNIVERSITY	NSG 1374	Painter, J. H	45	3594
LARC	Chambers, J. R.	TEXAS A&M UNIVERSITY	NSG 1407	Chevalier, H. L.	41	3595
LARC	Hearn, C. P.	TEXAS A&M UNIVERSITY	NSG 1639	Painter, J. H.	45	3596
LARC	McCormick, M. P.	UNIV OF ARIZONA	NAS 1-14332	Herman, B. M.	31	1090
LARC	McMaster, L. R.	UNIV OF ARIZONA	NAS 1-14928	Herman, B. M.	31	1091
LARC	Sachse, G. W.	UNIV CALIF-BERKELEY	NSG 1637	Chiao, R. Y.	13	1456
LARC	Sobieski, J.	UNIV CALIF-L ANGELES	NSG 1490	Schmit, L. A., Jr.	49	1528
LARC	Hammond, C. E.	UNIV CALIF-L ANGELES	NSG 1578	Friedman, P. P.	41	1529
LARC	Sullivan, E. M.	UNIV CALIF-SAN DIEGO	NSG 1590	Cicerone, R. J.	31	1599
LARC	Whitlock, C. H.	UNIV CALIF-SAN DIEGO	NSG 1641	Smith, R. C.	33	1600
LARC	Mikulas, M. M., Jr.	UNIV OF CINCINNATI	NSG 1185	Nayfeh, A. H.	49	3248
LARC	Monteith, J. H.	UNIV OF CINCINNATI	NSG 1486	Brown, D. L.	46	3249
LARC	Loendorf, D. D.	UNIV COLORADO-BOLDR	NSG 1489	Jordan, H. F.	49	1760
LARC	Senn, E. H.	UNIV COLORADO-BOLDR	NSG 1638	Riddle, W. E.	41	1761
LARC	Housner, J. M.	UNIV COLORADO-DENVER	NAS 1-15775	Thurston, G. A.	41	1794
LARC	Deaton, J. W.	UNIV OF DELAWARE	NSG 1304	Pipes, R. B.	46	1830
LARC	Garcia, R.	UNIV OF DELAWARE	NSG 1409	Pipes, R. B.	42	1831
LARC	Bowker, D. E.	UNIV OF DELAWARE	NSG 1433	Klemas, V.	39	1832
LARC	McWithey, R. R.	UNIV OF DELAWARE	NSG 1488	Vinson, J. R.	42	1833
LARC	Bushnell, D. M.	UNIV OF DELAWARE	NSG 1513	Danberg, J. E.	41	1834
LARC	McMaster, L. R.	UNIV OF DENVER	NAS 1-14929	Murcray, D. G.	31	1796
LARC	Goad, J. H., Jr.	UNIV OF DENVER	NSG 1405	Goldman, A.	31	1803
LARC	Orr, H. D., III	UNIV OF DENVER	NSG 1432	Murcray, D. G.	39	1804
LARC	McCormick, M. P.	UNIV OF DENVER	NSG 1439	Murcray, D. G.	31	1805
LARC	Goad, J. H., Jr.	UNIV OF DENVER	NSG 1557	Murcray, D. G.	31	1806
LARC	Walker, G. H.	UNIV OF FLORIDA	NSG 1425	Li, S. S.	45	1941
LARC	Hohl, [illegible]	UNIV OF FLORIDA	NSG 1586	Schneider, R. T.	13	1942
LARC	Reichle, H. G., Jr.	UNIV OF FLORIDA	NSG 1600	Chameides, W. L.	31	1943
LARC	Maestrello, L.	UNIV HOUSTON-HOUSTON	NSG 1475	Hussain, A. K	41	3623
LARC	Horner, G. C.	UNIV HOUSTON-HOUSTON	NSG 1603	Denman, E. D.	45	3624
LARC	Evans, J. S.	UNIV ILLINOIS-CHICGO	NSG 1150	Chung, P. M.	41	2110
LARC	Salmirs, S.	UNIV ILLINOIS-URBANA	NAS 1-14731	Jensen, R. S.	41	2112
LARC	Jordan, F. L.	UNIV ILLINOIS-URBANA	NSG 1434	Ormsbee, A. I.	41	2120
LARC	Foudriat, E. C.	UNIV ILLINOIS-URBANA	NSG 1471	Campbell, R. H.	21	2121
LARC	Hohl, F.	UNIV ILLINOIS-URBANA	NSG 1547	Miley, G. H.	13	2122
LARC	Hohl, F.	UNIV ILLINOIS-URBANA	NSG 1609	Verdeyen, J. T.	13	2123

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LARC	Rummler, D. R.	UNIV OF IOWA	NSG 1499	Wu, H. C.	47	2213
LARC	Holmes, B. J.	UNIV OF KANSAS	NAS 1-15770	Roskam, J.	41	2227
LARC	Stephens, D. G.	UNIV OF KANSAS	NCC 1 6	Roskam, J.	41	2232
LARC	Campbell, J. F.	UNIV OF KANSAS	NCC 1 18	Lan, C. E.	41	2233
LARC	Lamar, J. E.	UNIV OF KANSAS	NSG 1046	Roskam, J.	41	2235
LARC	Howell, W. E.	UNIV OF KANSAS	NSG 1281	Reese, C. D.	47	2236
LARC	Schroeder, L. C.	UNIV OF KANSAS	NSG 1397	Moore, R. K.	33	2237
LARC	Campbell, J. F.	UNIV OF KANSAS	NSG 1537	Lan, C E.	41	2238
LARC	Croswell, W. F.	UNIV OF KANSAS	NSG 1554	Moore, R. K.	45	2239
LARC	Hassell, J. L., Jr.	UNIV OF KANSAS	NSG 1574	Roskam, J.	41	2240
LARC	Lamar, J. E.	UNIV OF KANSAS	NSG 1629	Lan, C. E.	41	2241
LARC	Holmes, B. J.	UNIV OF KANSAS	NSG 1633	Lenzen, K H.	41	2242
LARC	Reichle, H. G., Jr.	UNIV OF KENTUCKY	NSG 1501	Peters, L. K.	31	2261
LARC	Fralich, R. W.	UNIVERSITY OF LOWELL	NSG 1295	McElman, J. A.	41	2611
LARC	Browell, E. V.	UNIV MARYLAND-COL PK	NCC 1 25	Wilkerson, T. D.	31	2362
LARC	Benz, H. F.	UNIV MARYLAND-COL PK	NSG 1468	Lin, H. C.	45	2380
LARC	Schy, A. A.	UNIV MARYLAND-COL PK	NSG 1558	Wang, S. H.	45	2381
LARC	DiCarlo, D. J.	UNIV MARYLAND-COL PK	NSG 1570	Barlow, J. B.	41	2382
LARC	Lisagor, W. B.	UNIV OF MIAMI	NSG 1283	Poteat, L. E.	47	1960
LARC	Tucker, J. H.	UNIV OF MIAMI	NSG 1436	Tapia, M. A.	21	1961
LARC	Russell, J. M., III	UNIV MICH-ANN ARBOR	NAS 1-14394	Drayson, S. R.	31	2629
LARC	Jones, J. L.	UNIV MICH-ANN ARBOR	NAS 1-15333	Felbeck, D. K	47	2630
LARC	Fichter, W. B.	UNIV MICH-ANN ARBOR	NGR 23-005-528	Felbeck, D. K.	47	2663
LARC	Pellett, G. L.	UNIV MICH-ANN ARBOR	NSG 1243	Dingle, A N	31	2664
LARC	Migneault, G. E.	UNIV MICH-ANN ARBOR	NSG 1306	Meyer, J. F.	45	2665
LARC	South, J. C., Jr.	UNIV MICH-ANN ARBOR	NSG 1326	Adamson, T. C., Jr.	41	2666
LARC	Sullivan, E. M.	UNIV MICH-ANN ARBOR	NSG 1373	Drayson, S. R.	31	2667
LARC	Dunning, R. S.	UNIV MICH-ANN ARBOR	NSG 1448	Vinh, N. X.	41	2668
LARC	Smith, G. L.	UNIV MICH-ANN ARBOR	NSG 1482	Bartman, F. L.	31	2669
LARC	McCarty, J. L.	UNIV MICH-ANN ARBOR	NSG 1494	Clark, S K.	41	2670
LARC	McCarty, J. L.	UNIV MICH-ANN ARBOR	NSG 1607	Clark, S. K.	41	2671
LARC	Beswick, A. G.	U MINN-MNPLS-ST PAUL	NSG 1431	Mauersberger, K	31	2711
LARC	Migneault, G. E.	UNIV MO-COLUMBIA	NSG 1540	Miller, D. R	22	2761
LARC	Graves, R. A., Jr.	UNIV MO-ROLLA	NSG 1369	Biolsi, L.	12	2767
LARC	Hefner, J. N.	UNIV MO-ROLLA	NSG 1452	Patterson, G. K.	41	2768
LARC	Tanner, J. A.	UNIV NEBRASKA-LINCLN	NSG 1506	Baumgarten, J. R.	46	2799
LARC	Wood, G. M.	UNIV OF NEW ORLEANS	NSG 1460	Ioup, G. E.	47	2290
LARC	Lambiotte, J. J., Jr.	UNIV OF NEW ORLEANS	NSG 1648	Ioup, G. E.	21	2291
LARC	Somers, D. M.	UNIV OF NOTRE DAME	NSG 1419	Mueller, T. J	41	2176
LARC	Gross, C.	UNIV OKLAHOMA-NORMAN	NSG 1481	Kahng, S. K	45	3314
LARC	Brewer, W. D.	UNIV OF PENNSYLVANIA	NSG 1596	Vogel, F. L.	19	3430
LARC	Campbell, J. W.	UNIV OF RHODE ISLAND	NSG 1495	Spaulding, M. L.	33	3464
LARC	Park, S. K.	UNIV OF SO FLORIDA	NSG 1487	Tsokos, C. P.	21	1966
LARC	Kilgore, R. A.	UNIV OF SOUTHAMPTON	NSG 7172	Goodyer, M. J.	41	4030
LARC	Boyden, R. P.	UNIV OF SOUTHAMPTON	NSG 7523	Goodyer, M J.	41	4031
LARC	Stein, M.	UNIV OF SOUTHERN CAL	NSG 1401	Seide, P.	41	1698
LARC	Conway, E. J.	UNIV OF SOUTHERN CAL	NSG 1536	Kroger, F. A.	47	1699
LARC	Wood, G. M.	UNIV SO MISSISSIPPI	NSG 1515	Rayborn, G. H.	19	2753
LARC	Melfi, L. T., Jr.	UNIV OF SYDNEY	NSG 7272	Bird, G. A	13	4023
LARC	Bland, S. R.	UNIV TENNESSEE-KNOXV	NSG 1224	Kimble, K. R.	41	3512
LARC	Robinson, J. C.	U TENNESSEE-NASHVILE	NSG 1455	Blackburn, C. L.	41	3519
LARC	Shoosmith, J. N.	UNIV TEXAS-AUSTIN	NSG 1440	Daniel, J. W.	21	3659
LARC	Shipman, F. S.	UNIV TEXAS-AUSTIN	NSG 1446	Browne, J. C.	22	3660
LARC	Will, R. W.	UNIV TEXAS-AUSTIN	NSG 1479	Browne, J. C	22	3661
LARC	Schiess, J. R.	UNIV TEXAS-AUSTIN	NSG 1544	Cline, A. K.	22	3662
LARC	Smith, R. E.	UNIV TEXAS-AUSTIN	NSG 1632	Sherman, A. H.	21	3663
LARC	Robertson, J. B.	UNIV TEXAS-EL PASO	NSG 1316	Eastman, M. P.	13	3711
LARC	Baker, D. J.	UNIV OF TORONTO	NSG 7409	Tennyson, R. C.	47	4024

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LARC	Card, M. F.	UNIV OF UTAH	NSG 1313	Resch, R. D.	49	3729
LARC	Fripp, A. L.	UNIV OF UTAH	NSG 1534	Rosenberger, F. E.	47	3730
LARC	Will, R. W.	UNIV OF VIRGINIA	NAS 1-14862	Berman, W. J.	22	3841
LARC	Conner, D. W.	UNIV OF VIRGINIA	NAS 1-14908	Kuhlthau, A. R.	49	3842
LARC	Kilgore, R. A.	UNIV OF VIRGINIA	NSG 1010	Zapata, R. N.	41	3852
LARC	Bowles, R. L.	UNIV OF VIRGINIA	NSG 1335	Brown, R. L., Jr.	21	3853
LARC	Tapscott, R. J.	UNIV OF VIRGINIA	NSG 1399	Jacobson, I. D.	49	3854
LARC	Humes, D. H.	UNIV OF VIRGINIA	NSG 1427	Singer, S. F.	11	3855
LARC	Will, R. W.	UNIV OF VIRGINIA	NSG 1458	Pratt, T. W.	22	3856
LARC	DeLoach, R.	UNIV OF VIRGINIA	NSG 1509	Jacobson, I. D.	69	3857
LARC	Beatty, M. E.	UNIV OF VIRGINIA	NSG 1567	Batchman, T. E.	13	3858
LARC	Ashworth, B. R.	UNIV OF VIRGINIA	NSG 1599	Parrish, E. A.	45	3859
LARC	Fripp, A. L.	UNIV OF VIRGINIA	NSG 1652	Jesser, W. A.	47	3860
LARC	Williams, T. S., Jr.	UNIV OF WASHINGTON	NAS 1-9694	Leovy, C. B.	31	3923
LARC	Russell, J. M., III	UNIV OF WASHINGTON	NAS 1-14341	Leovy, C. B.	31	3924
LARC	Browell, E. V.	UNIV WISC-MADISON	NAS 1-14136	Eloranta, E.	31	3968
LARC	Young, W. H., Jr.	UNIV WISC-MILWAUKEE	NGR 50-007-001	Bratanow, T.	41	4010
LARC	Hedgepeth, K. D.	UNIV OF WYOMING	NAS 1-13797	Pepin, T. J.	31	4012
LARC	McCormick, M. P.	UNIV OF WYOMING	NAS 1-14373	Pepin, T. J.	31	4013
LARC	McMaster, L. R.	UNIV OF WYOMING	NAS 1-14931	Pepin, T. J.	31	4014
LARC	McMaster, L. R.	UNIV OF WYOMING	NAS 1-15377	Hofmann, D. J.	31	4015
LARC	McMaster, L. R.	UNIV OF WYOMING	NSG 1518	Pepin, T. J.	31	4019
LARC	Hohl, F.	VANDERBILT UNIVERSTY	NCC 1 8	Lee, J. H.	13	3521
LARC	Hohl, F.	VANDERBILT UNIVERSTY	NSG 1235	Lee, J. H.	13	3522
LARC	Anderson, A. F.	VIRGINIA POLY INST	NAS 1-15080	Unavailable	99	3870
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NCC 1 4	Meirovitch, L.	42	3877
LARC	Tenney, D. R.	VIRGINIA POLY INST	NCC 1 10	Unnam, J.	39	3878
LARC	Davis, J. G, Jr.	VIRGINIA POLY INST	NCC 1 15	Herakovich, C. T	49	3879
LARC	Erickson, W. D.	VIRGINIA POLY INST	NCC 1 20	Hobelka, A. G	41	3880
LARC	Davis, J. G., Jr.	VIRGINIA POLY INST	NGR 47-004-129	Herakovich, C. T.	49	3883
LARC	Smith, A.	VIRGINIA POLY INST	NSG 1020	Sanzone, G.	13	3884
LARC	Johnston, N. J.	VIRGINIA POLY INST	NSG 1064	Wolfe, J. F.	12	3885
LARC	Young, P. R.	VIRGINIA POLY INST	NSG 1085	Mason, J. G.	12	3886
LARC	Progar, D. J.	VIRGINIA POLY INST	NSG 1124	Wightman, J. P.	12	3887
LARC	Hoffman, E. L.	VIRGINIA POLY INST	NSG 1250	Herakovich, C. T.	49	3888
LARC	Hoffman, E. L.	VIRGINIA POLY INST	NSG 1254	Stinchcomb, W. W	46	3889
LARC	Srokowski, A. J.	VIRGINIA POLY INST	NSG 1255	Nayfeh, A. H	41	3890
LARC	Yates, E. C., Jr.	VIRGINIA POLY INST	NSG 1262	Mook, D. T.	41	3891
LARC	Creedon, J. F.	VIRGINIA POLY INST	NSG 1354	VanLandingham, H. F.	41	3892
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1382	Louthan, M. R., Jr.	47	3893
LARC	StClair, A. K.	VIRGINIA POLY INST	NSG 1428	Taylor, L. T.	12	3894
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1470	Houska, C. R.	47	3895
LARC	Moss, J. N.	VIRGINIA POLY INST	NSG 1520	Lewis, C. H.	41	3896
LARC	StClair, T. L.	VIRGINIA POLY INST	NSG 1524	Wolfe, J. F	12	3897
LARC	Miserentino, R.	VIRGINIA POLY INST	NSG 1526	Hallauer, W. L., Jr.	46	3898
LARC	Montgomery, R. C.	VIRGINIA POLY INST	NSG 1527	VanLandingham, H. F.	45	3899
LARC	Tenney, D. R.	VIRGINIA POLY INST	NSG 1531	Unnam, J.	47	3900
LARC	Everett, R. A., Jr.	VIRGINIA POLY INST	NSG 1571	Morris, D. H.	47	3901
LARC	Watson, W. R.	VIRGINIA POLY INST	NSG 1573	Nayfeh, A. H.	45	3902
LARC	Hefner, J. N.	VIRGINIA POLY INST	NSG 1589	Schetz, J. A.	41	3903
LARC	StClair, A. K.	VIRGINIA POLY INST	NSG 1597	McGrath, J. E	12	3904
LARC	DeLoach, R.	VIRGINIA POLY INST	NSG 1598	Frair, L.	99	3905
LARC	Hefner, J. N.	VIRGINIA POLY INST	NSG 1608	Saric, W. S.	41	3906
LARC	Baker, D. J.	VIRGINIA POLY INST	NSG 1621	Hyer, M. W.	47	3907
LARC	Sobieski, J.	VIRGINIA POLY INST	NSG 1627	Anderson, L. R.	49	3908
LARC	Lansing, D. L.	VIRGINIA STATE UNIV	NGL 47-014-009	Agrawal, K. M.	41	3920
LARC	Singh, J. J.	VIRGINIA STATE UNIV	NSG 1342	Stronach, C. E.	13	3921
LARC	Wilson, J. W.	VIRGINIA STATE UNIV	NSG 1646	Stronach, C. E.	13	3922

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LARC	Williams, T. S., Jr.	WASHINGTON UNIVERSTY	NAS 1-13889	Arvidson, R. E.	39	2777
LARC	Heyman, J. S.	WASHINGTON UNIVERSTY	NSG 1601	Miller, J G.	13	2783
LARC	Giles, G. L.	WASHINGTON UNIVERSTY	NSG 1640	Szabo, B A.	49	2784
LARC	Maestrello, L.	WAYNE STATE UNIV	NSG 1330	Chow, P. L.	41	2694
LARC	Watts, J. D.	WICHITA STATE UNIV	NCC 1 21	Cook, E. L.	41	2252
LARC	Noonan, K W.	WICHITA STATE UNIV	NGR 17-003-021	Rodgers, E J.	41	2253
LARC	McGhee, R. J.	WICHITA STATE UNIV	NSG 1165	Wentz, W. H., Jr.	41	2254
LARC	Huber, P. W.	WICHITA STATE UNIV	NSG 1575	Zumwalt, G. W.	41	2255
LARC	Queijo, M. J.	WRIGHT STATE UNIV	NSG 1417	Wells, W. R.	41	3294
LARC	Wood, G. M.	XAVIER UNIV-LA	NSG 1361	Ioup, J. W.	13	2293
LARC	Hall, R. M.	YALE UNIVERSITY	NSG 1612	Wegener, P. P.	41	1824
LERC	Bifano, W. J.	ARIZONA STATE UNIV	DEN 3 50	Bahr, D. M.	72	1070
LERC	Hippensteele, S. A.	ARIZONA STATE UNIV	NSG 3075	Metzger, D. E.	41	1080
LERC	Burkhart, J. A.	ARKANSAS STATE UNIV	NSG 3249	Bennett, J. E.	12	1161
LERC	Decker, A J.	AUBURN UNIV-AUBURN	NSG 3233	Swinson, W. F.	49	1026
LERC	Herbell, T. P.	BROWN UNIVERSITY	NSG 3118	Richman, M H	47	3458
LERC	Gluyas, R. E.	BUCKNELL UNIVERSITY	NSG 3136	Snyder, W. J	43	3340
LERC	Coe, H. H.	CAL STATE U-NRTHRDGE	NSG 3065	Nypan, L. J.	46	1250
LERC	Priem, R. J.	CAL STATE U-SACRAMEN	NGR 05-058-003	Reardon, F. H.	42	1255
LERC	Witzke, W. R.	CARNEGIE-MELLON UNIV	NAS 3-20370	Bhat, G. K.	47	3341
LERC	Srawley, J. E.	CARNEGIE-MELLON UNIV	NSG 3172	Swedlow, J. L.	46	3343
LERC	Cunningham, R. E.	CARNEGIE-MELLON UNIV	NSG 3202	Hughes, W. F.	46	3344
LERC	Labus, T. L.	CASE WESTERN RESERVE	NAS 3-21046	Ostrach, S.	46	3140
LERC	Smetana, J.	CASE WESTERN RESERVE	NAS 3-21365	Collin, R. E.	49	3141
LERC	Wintucky, E. G	CASE WESTERN RESERVE	NAS 3-21946	Bahniuk, E.	49	3142
LERC	Riley, T. J.	CASE WESTERN RESERVE	NAS 3-21965	Angus, J. C.	12	3143
LERC	Weigand, A. J.	CASE WESTERN RESERVE	NAS 3-22259	Gibbons, D. F.	19	3144
LERC	Sockol, P. M.	CASE WESTERN RESERVE	NCC 3 4	Reshotko, E.	41	3148
LERC	Glasgow, T K.	CASE WESTERN RESERVE	NGL 36-003-094	Ebert, L. J.	47	3149
LERC	Bishop, A. R.	CASE WESTERN RESERVE	NGR 36-027-064	Reshotko, E.	41	3151
LERC	Kohl, F. J.	CASE WESTERN RESERVE	NSG 3009	Mateescu, G D.	12	3155
LERC	Fortini, A.	CASE WESTERN RESERVE	NSG 3040	Dybbs, A.	47	3156
LERC	Sockol, P. M.	CASE WESTERN RESERVE	NSG 3062	Reshotko, E.	41	3157
LERC	Dunning, J. W., Jr.	CASE WESTERN RESERVE	NSG 3074	Angus, J. C.	43	3158
LERC	Stevers, G. H.	CASE WESTERN RESERVE	NSG 3085	Pao, Y. H.	45	3159
LERC	Anderson, B. H.	CASE WESTERN RESERVE	NSG 3115	Lynch, W. C.	41	3160
LERC	Weigand, A. J.	CASE WESTERN RESERVE	NSG 3126	Gibbons, D. F.	49	3161
LERC	Mirtich, M. J.	CASE WESTERN RESERVE	NSG 3131	Topich, J. A.	19	3162
LERC	Serafini, T. T.	CASE WESTERN RESERVE	NSG 3140	Koenig, J. L	12	3163
LERC	Lauver, R. W.	CASE WESTERN RESERVE	NSG 3142	Ritchey, W. M.	12	3164
LERC	Weigand, A. J.	CASE WESTERN RESERVE	NSG 3151	Gibbons, D. F.	56	3165
LERC	Purvis, C. K.	CASE WESTERN RESERVE	NSG 3197	Gordan, W. L.	13	3166
LERC	Fordyce, J. S.	CASE WESTERN RESERVE	NSG 3203	Liu, C. C.	43	3167
LERC	Riddlebaugh, S. M.	CASE WESTERN RESERVE	NSG 3206	Greber, I.	41	3168
LERC	Anderson, B. H.	CASE WESTERN RESERVE	NSG 3207	Parke, F. I	41	3169
LERC	Hingst, W. R.	CASE WESTERN RESERVE	NSG 3211	Greber, I.	41	3170
LERC	Labus, T. L	CASE WESTERN RESERVE	NSG 3221	Ostrach, S.	13	3171
LERC	Anderson, D. N.	CASE WESTERN RESERVE	NSG 3230	T'len, J. S.	46	3172
LERC	Lauver, R. W.	CASE WESTERN RESERVE	NSG 3241	Ritchey, W. M.	12	3173
LERC	Scheuermann, C. M.	CASE WESTERN RESERVE	NSG 3246	Maier, R. D.	47	3174
LERC	Brown, W. F., Jr.	CASE WESTERN RESERVE	NSG 3251	Mendelson, A.	46	3175
LERC	Gedwill, M. A.	CASE WESTERN RESERVE	NSG 3252	Maier, R. D.	47	3176
LERC	Tower, L. K.	CASE WESTERN RESERVE	NSG 3268	Kamotani, Y.	47	3177
LERC	Hingst, W. R.	CASE WESTERN RESERVE	NSG 3271	Greber, I.	41	3178
LERC	Lauver, R. W.	CASE WESTERN RESERVE	NSG 3272	Ishida, H.	12	3179
LERC	Hsu, L. C.	CASE WESTERN RESERVE	NSG 3276	Koenig, J. L.	12	3180
LERC	Mirtich, M. J.	CASE WESTERN RESERVE	NSG 3279	Wallace, J. F.	19	3181
LERC	Weigand, A. J.	CASE WESTERN RESERVE	NSG 3282	Gibbons, D. F.	56	3182

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LERC	Jones, W. R., Jr.	CASE WESTERN RESERVE	NSG 3288	Cahan, B. D.	12	3183
LERC	Souey, J. S.	CASE WESTERN RESERVE	NSG 3289	Geil, K. H.	47	3184
LERC	Smialek, J. L.	CASE WESTERN RESERVE	NSG 3291	Cooper, A. R	47	3185
LERC	Hirschberg, M. H.	CASE WESTERN RESERVE	NSG 7035	Powell, N. L.	47	3187
LERC	Fordyce, J. S.	CENTRAL ST UNIV-OHIO	NGR 36-033-003	Craft, T. J., Sr.	54	3188
LERC	Young, S. G.	CHICAGO STATE UNIV	NSG 3030	Treptow, R. S	99	2059
LERC	Braun, W. H.	CITY COLLEGE OF N Y	NSG 3174	Weinstein, H	49	2912
LERC	Rotnem, J. O.	CLARKSON COL OF TECH	NSG 3191	Arozullah, M	45	2917
LERC	Weigand, A. J.	CLEMSON UNIV-CLEMSON	NSG 3225	Park, J. B.	56	3469
LERC	Townsend, D. P.	CLEVELAND STATE UNIV	NAS 3-18547	Kasuba, R.	46	3189
LERC	Simoneau, R. J.	CLEVELAND STATE UNIV	NCC 3 3	Gorla, R. S.	46	3190
LERC	Ashbrook, R. L.	CLEVELAND STATE UNIV	NSG 3155	Yeh, H. C.	43	3193
LERC	Nieberding, W. C.	CLEVELAND STATE UNIV	NSG 3222	Marsel, J. F	45	3194
LERC	Beach, R. F	CLEVELAND STATE UNIV	NSG 3223	Burghart, J. H	99	3195
LERC	Lorenzo, C. F.	CLEVELAND STATE UNIV	NSG 3257	Larson, V H.	46	3196
LERC	Herbell, T. P.	CLEVELAND STATE UNIV	NSG 3259	Yeh, H. C.	47	3197
LERC	Gordon, W. A.	CLEVELAND STATE UNIV	NSG 3308	Megargle, R.	12	3198
LERC	Antoine, A. C.	COLORADO SCH OF MINE	NSG 3122	Daniel, S. R	12	1708
LERC	Priem, R. J.	COLORADO STATE UNIV	NGR 06-002-095	Mitchell, C E	42	1717
LERC	Kerslake, W. R.	COLORADO STATE UNIV	NGR 06-002-112	Wilbur, P. J.	46	1719
LERC	Rawlin, V. K.	COLORADO STATE UNIV	NSG 3011	Kaufman, H R.	42	1725
LERC	Chubb, D. L.	COLORADO STATE UNIV	NSG 3060	Collins, G. J	13	1726
LERC	Mirtich, M. J.	COLORADO STATE UNIV	NSG 3086	Kaufman, H R.	13	1727
LERC	Sockol, P. M.	COLORADO STATE UNIV	NSG 3127	Sadeh, W. Z	41	1728
LERC	Aron, P. R.	COLORADO STATE UNIV	NSG 3145	Yadlowsky, E. J.	13	1729
LERC	Sater, B. L.	COLORADO STATE UNIV	NSG 3167	Sites, J. R.	13	1730
LERC	Grier, N. T.	COLORADO STATE UNIV	NSG 3196	Kaufman, H R	13	173
LERC	Glasgow, T K.	COLUMBIA UNIVERSITY	NSG 3050	Tien, J K	47	2936
LERC	Flood, D J.	CORNELL UNIVERSITY	NGR 33-010-188	Ashcroft, N. W	13	2965
LERC	Aron, P. R.	CORNELL UNIVERSITY	NGR 33-010-189	Ruoff, A. L.	47	2966
LERC	Marek, C. J.	CORNELL UNIVERSITY	NSG 3019	Gouldin, F. C	41	2977
LERC	Bill, R. C.	DARTMOUTH COLLEGE	NSG 3253	Kennedy, F E., Jr	47	2814
LERC	Zeleznik, F. J.	DREXEL UNIVERSITY	NSG 3090	Rosen, G. H.	21	3354
LERC	Grimes, H. H	DREXEL UNIVERSITY	NSG 3128	Koczak, M. J.	47	3355
LERC	Gruber, R. P.	DUKE UNIVERSITY	NSG 3157	Wilson, T. G	45	3107
LERC	Ford, W. F.	DUKE UNIVERSITY	NSG 3160	Smith, D. A	21	3108
LERC	Jackson, H. D.	GEORGE WASHINGTON U	NSG 3130	Wood, F B	99	1871
LERC	Hein, G. F	GEORGIA INST OF TECH	DEN 3 73	Zimmer, R P	45	1975
LERC	Stevens, G. H	GEORGIA INST OF TECH	NAS 3-20110	Zimmer, R. P	42	1981
LERC	Baumeister, K. J.	GEORGIA INST OF TECH	NSG 3036	Zinn, B. T	41	2000
LERC	Priem, R. J	GEORGIA INST OF TECH	NSG 3052	Korkan, K. D	42	2001
LERC	Jones, W. R., Jr.	GEORGIA INST OF TECH	NSG 3106	Winer, W O.	46	2002
LERC	Feiler, C. E.	GEORGIA INST OF TECH	NSG 3228	Cassonova, R A	13	2003
LERC	Sockol, P. M.	GEORGIA INST OF TECH	NSG 3260	Johnston, W A	41	2004
LERC	Scudder, L R	GEORGIA INST OF TECH	NSG 3297	Jacobson, J. E	72	2005
LERC	McFarland, E. R.	GEORGIA INST OF TECH	NSG 3307	Wu, J.	41	2006
LERC	Groeneweg, J. F.	ILL INST OF TECH	NSG 3220	Nagib, H. M	41	2062
LERC	Sockol, P. M.	IND U-PURDUE-INDAPLS	NSG 3183	Bodonyi, R J	41	2143
LERC	Chima, R. U.	IND U-PURDUE-INDAPLS	NSG 3294	Ecer, A.	41	2144
LERC	Ludwig, L. P.	ISRAEL INST OF TECH	NSG 7317	Etsion, I	46	4032
LERC	Sater, B. L	KENT STATE UNIV-KENT	NAS 3-21945	Gelerinter, E.	19	3199
LERC	Wintucky, E. G.	KENT STATE UNIV-KENT	NSG 3159	Johnson, D L.	47	3201
LERC	Batterton, P. G.	LEHIGH UNIVERSITY	NSG 3162	Rockwell, D O	41	3369
LERC	Chamis, C C.	LEHIGH UNIVERSITY	NSG 3179	Sih, G. C.	49	3370
LERC	Sovey, J. S.	LEHIGH UNIVERSITY	NSG 3193	Micale, F J	47	3371
LERC	Crouse, J. E.	MASS INST OF TECH	NAS 3-20473	Kerrebrock, J L.	41	2492
LERC	Pepper, S. V.	MASS INST OF TECH	NCC 3 1	Johnson, K H	19	2518
LERC	McNally, W. D.	MASS INST OF TECH	NGL 22-009-383	Kerrebrock, J. L.	41	2524

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LERC	Holms, A. G.	MASS INST OF TECH	NGR 22-009-339	Wittmer, E. A.	41	2530
LERC	Weinberg, I.	MASS INST OF TECH	NSG 3017	Gatos, H. C.	47	2569
LERC	Chamis, C. C.	MASS INST OF TECH	NSG 3044	McGarry, F. J.	49	2570
LERC	Scheuermann, C. M.	MASS INST OF TECH	NSG 3046	Flemings, M. C.	47	2571
LERC	Brabbs, T. A.	MASS INST OF TECH	NSG 3076	Hoult, D. P	41	2572
LERC	Adamczyk, J. J.	MASS INST OF TECH	NSG 3079	Kerrebrock, J. L.	41	2573
LERC	Baumeister, K. J.	MASS INST OF TECH	NSG 3129	Ungard, K. U.	41	2574
LERC	Domitz, S.	MASS INST OF TECH	NSG 3175	Kolm, H. H	42	2575
LERC	Braun, W. H.	MASS INST OF TECH	NSG 3187	Kerrebrock, J. L	49	2576
LERC	Adamczyk, J. J.	MASS INST OF TECH	NSG 3208	Greitzer, E. M	41	2577
LERC	Vary, A.	MASS INST OF TECH	NSG 3210	Williams, J. H., Jr.	47	2578
LERC	McNally, W. D.	MASS INST OF TECH	NSG 3234	Kerrebrock, J. L.	41	2579
LERC	Cassidy, J. F.	MASS INST OF TECH	NSG 3245	Heywood, J. B.	46	2580
LERC	Antoine, A. C.	MASS INST OF TECH	NSG 3286	Uhlmann, D. R.	12	2581
LERC	Janetzke, D. C.	MASS INST OF TECH	NSG 3303	Miller, R. H.	41	2582
LERC	Nakanishi, S.	MICHIGAN STATE UNIV	NSG 3299	Asmussen, J	19	2626
LERC	Barrett, C. A.	MICHIGAN TECH UNIV	NSG 3215	Heckel, R. W.	47	2628
LERC	Reid, M. A.	MUSKINGUM COLLEGE	NSG 3278	Wallace, W. J.	12	3206
LERC	Labus, T. L.	NEW YORK UNIVERSITY	NSG 3059	Keller, J. B.	49	3008
LERC	Godlewski, M. P.	NO CAROLINA STATE U	NGR 34-002-195	Hauser, J. R	45	3125
LERC	Ludwig, L. P.	NORTHWESTERN UNIV	NAS 3-21261	Burton, R. A.	46	2063
LERC	Ludwig, L. P.	NORTHWESTERN UNIV	NSG 3039	Burton, R. A.	47	2070
LERC	Coy, J. J.	NORTHWESTERN UNIV	NSG 3143	Cheng, H. S.	46	2071
LERC	Wedeven, L. D.	NORTHWESTERN UNIV	NSG 3149	Cheng, H. S.	46	2072
LERC	Gray, H. R.	OHIO STATE UNIV	NGL 36-008-051	Beck, F. H.	47	3216
LERC	Bill, R. C.	OHIO STATE UNIV	NSG 3164	Black, J. T	47	3230
LERC	Bowles, K. J.	OHIO STATE UNIV	NSG 3235	Smith, E. E.	49	3231
LERC	Mikkelson, D. C	OHIO STATE UNIV	NSG 3247	Gregorek, G. M.	41	3232
LERC	Vary, A.	OHIO STATE UNIV	NSG 3269	Fu, L. S.	47	3233
LERC	Baumbilk, R. J.	OHIO STATE UNIV	NSG 3302	Collins, S. A., Jr.	45	3234
LERC	Britsch, W. R.	PENN STATE U-UNIV PK	NGL 39-009-007	Lakshminarayana, B.	41	3390
LERC	Priem, R. J.	PENN STATE U-UNIV PK	NGR 39-009-077	Faeth, G. M.	42	3393
LERC	Heidmann, M. F	PENN STATE U-UNIV PK	NSG 3012	Eisenhuth, J.	41	3399
LERC	Sanders, W. A.	PENN STATE U-UNIV PK	NSG 3016	Bradt, R. C.	47	3400
LERC	Sockol, P. M.	PENN STATE U-UNIV PK	NSG 3032	Lakshminarayana, B.	41	3401
LERC	Aron, P. R.	PENN STATE U-UNIV PK	NSG 3166	Robinson, J. W.	13	3402
LERC	Sockol, P. M.	PENN STATE U-UNIV PK	NSG 3212	Lakshminarayana, B.	41	3403
LERC	Sanger, N. L.	PENN STATE U-UNIV PK	NSG 3264	Kubo, I.	41	3404
LERC	Englert, G. W.	PENN STATE U-UNIV PK	NSG 3265	Morris, P. J.	41	3405
LERC	Sockol, P. M.	PENN STATE U-UNIV PK	NSG 3266	Lakshminarayana, B.	41	3406
LERC	Aron, P. R.	PENN STATE U-UNIV PK	NSG 3301	Kendall, B. R.	13	3407
LERC	Mitchell, G. A.	PENN STATE U-UNIV PK	NSG 3304	McCormick, B. W.	41	3408
LERC	Marek, C. J.	PENN STATE U-UNIV PK	NSG 3306	Faeth, G. M	46	3409
LERC	Will, H. A	POLY INST OF NY	NSG 3108	Lederman, S.	13	3023
LERC	Domitz, S.	PRINCETON UNIVERSITY	NSG 3176	O'Neill, G. K	42	2856
LERC	Cassidy, J. F.	PRINCETON UNIVERSITY	NSG 3178	Sirignano, W. A.	46	2857
LERC	Braun, W. H.	PRINCETON UNIVERSITY	NSG 3292	Dowell, E. H.	41	2858
LERC	Davidson, H. W	PURDUE UNIVERSITY	NSG 3071	L'Ecuyer, M. R.	41	2162
LERC	Katsanis, T.	PURDUE UNIVERSITY	NSG 3105	Meinke, W. J.	41	2163
LERC	Lehtinen, B.	PURDUE UNIVERSITY	NSG 3119	Leonard, R. G.	41	2164
LERC	Serafini, J. S.	PURDUE UNIVERSITY	NSG 3135	Sullivan, J. P	41	2165
LERC	Chamis, C. C.	PURDUE UNIVERSITY	NSG 3185	Sun, C. T.	41	2166
LERC	Cooper, L. P.	PURDUE UNIVERSITY	NSG 3213	Lefebvre, A. H.	41	2167
LERC	Gilbert, L. J	PURDUE UNIVERSITY	NSG 3237	Krause, P. C.	45	2168
LERC	Haggard, J. B.	PURDUE UNIVERSITY	NSG 3258	Shifstad, J. G.	46	2169
LERC	Boldman, D. R.	PURDUE UNIVERSITY	NSG 3285	Fleeter, S.	41	2170
LERC	Jones, W. R., Jr.	RENSSELAER POLY-NY	NSG 3170	Lauer, J. L.	13	3041
LERC	Simoneau, R. J.	RENSSELAER POLY-NY	NSG 3262	Mayle, R. E.	41	3042

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LERC	Lad, R. A.	RICE UNIVERSITY	NGL 44-006-001	Rorschach, H. E.	13	3552
LERC	Claus, R. W.	RUTGERS U-N BRUNSWK	NSG 3280	Johnson, J. A.	41	2874
LERC	Gaugler, R. E.	STANFORD UNIVERSITY	NSG 3124	Johnston, J. P.	46	1398
LERC	Weinberg, I.	STATE UNIV NY-ALBANY	NSG 3095	Corbett, J. W.	39	3054
LERC	Holdeman, J. D.	STATE UNIV NY-ALBANY	NSG 3138	Falconer, P.	31	3055
LERC	Morris, J. F.	STATE UNIV NY-BUFFAL	NSG 7071	Shaw, D. T.	13	3063
LERC	Brabbs, T. A.	STATE U NY-STONY BRK	NCC 3 2	Yang, C. H.	12	3069
LERC	Cochran, T. H.	STATE U NY-STONY BRK	NSG 3051	Berlad, A. L.	43	3077
LERC	Cochran, T. H.	STATE U NY-STONY BRK	NSG 3298	Berlad, A. L.	13	3078
LERC	Priem, R. J.	TENNESSEE TECH U	NGR 43-003-015	Ventrice, M. B.	46	3491
LERC	Brown, G. V.	TEXAS A&M UNIVERSITY	NSG 3201	Ford, A. L.	13	3598
LERC	Marek, C. J.	TRENTON STATE COL	NSG 3180	Feng, C. C.	46	2880
LERC	Weigand, A. J.	TULANE UNIVERSITY	NSG 3209	Weinstein, A. M.	56	2288
LERC	Titran, R. H.	TUSKEGEE INSTITUTE	NSG 3154	Ramirez, R. P.	47	1033
LERC	Glassman, A. J	TUSKEGEE INSTITUTE	NSG 3295	Jenkins, R. M.	41	1034
LERC	Fordyce, J. S.	UNIV OF ALBUQUERQUE	NSG 3092	Urzendowski, R. M.	12	2893
LERC	Chamis, C. C.	UNIV OF AKRON	NSG 3283	Adams, M. L.	41	3244
LERC	Marek, C. J.	UNIV CALIF-BERKELEY	NSG 3028	Daily, J. W.	46	1462
LERC	Marek, C. J.	UNIV CALIF-BERKELEY	NSG 3227	Oppenheim, A. K.	41	1463
LERC	Sater, B. L.	UNIV CALIF-IRVINE	NAS 3-21963	Foltz, E. L.	56	1496
LERC	Spera, D. A.	UNIV CALIF-L ANGELES	NSG 3082	Friedman, P. P.	46	1532
LERC	Friedman, R.	UNIV CALIF-L ANGELES	NSG 3116	Liu, C. Y.	41	1533
LERC	Burkhart, J. A.	UNIV CALIF-L ANGELES	NSG 3153	Frederking, T. H.	46	1534
LERC	Rice, E. J.	UNIV CALIF-L ANGELES	NSG 3236	Charwat, A. F.	13	1535
LERC	Salzman, J. A	UNIV CALIF-SAN DIEGO	NAS 3-21386	Austin, R. W.	19	1569
LERC	Salzman, J. A.	UNIV CALIF-SAN DIEGO	NAS 3-21473	Austin, R. W.	33	1570
LERC	Flood, D. J.	UNIV CALIF-SAN DIEGO	NSG 3034	Oesterreicher, H.	47	1602
LERC	Haggard, J. B.	UNIV CALIF-SAN DIEGO	NSG 3047	Williams, F. A.	43	1603
LERC	Woollam, J. A.	UNIV CALIF-SAN DIEGO	NSG 3055	Webb, G. W.	19	1604
LERC	Woollam, J. A.	UNIV CALIF-SAN DIEGO	NSG 3103	Luo, H. L.	13	1605
LERC	Purvis, C. K.	UNIV CALIF-SAN DIEGO	NSG 3150	Whipple, E. C., Jr	39	1606
LERC	Marek, C. J.	UNIV CALIF-SAN DIEGO	NSG 3219	Libby, P. A.	41	1607
LERC	Cochran, T. H.	UNIV CALIF-SAN DIEGO	NSG 3296	Williams, F. A.	13	1608
LERC	Kohl, F. J.	UNIV CALIF-S BARBARA	NSG 3256	Steinberg, M.	12	1652
LERC	McFarland, E. R.	UNIV OF CINCINNATI	NAS 3-21609	Tabakoff, W	41	3245
LERC	Sundberg, G. R.	UNIV OF CINCINNATI	NSG 3022	Henderson, H. T.	45	3250
LERC	Riley, T. J.	UNIV OF CINCINNATI	NSG 3024	Nevin, J. H.	45	3251
LERC	Stepka, F. S.	UNIV OF CINCINNATI	NSG 3066	Tabakoff, W.	41	3252
LERC	Blue, J. W.	UNIV OF CINCINNATI	NSG 3091	Selberg, B. P.	13	3253
LERC	Miner, R. V., Jr.	UNIV OF CINCINNATI	NSG 3147	Antolovich, S. D.	47	3254
LERC	Coy, J. J.	UNIV OF CINCINNATI	NSG 3188	Huston, R. L.	46	3255
LERC	Chubb, D. L.	UNIV OF CINCINNATI	NSG 3218	Tabakoff, W.	46	3256
LERC	Hirschberg, M. H.	UNIV OF CINCINNATI	NSG 3263	Antolovich, S. D.	47	3257
LERC	Kao, H. C.	UNIV OF CINCINNATI	NSG 3267	Ghia, K. N.	41	3258
LERC	Groeneweg, J. F.	UNIV COLORADO-BOLDR	NSG 3181	Uberoi, M. S.	41	1763
LERC	Goldman, L. J.	UNIV OF CONNECTICUT	NSG 3238	Langston, L. S.	46	1816
LERC	Gentile, L. C.	UNIV OF DAYTON	NAS 3-20392	Engler, N. A.	42	3259
LERC	Stevenson, S. M.	UNIV OF DAYTON	NAS 3-21355	Martino, J. P.	47	3260
LERC	Gentile, L. C.	UNIV OF DAYTON	NAS 3-21370	Engler, N. A.	42	3261
LERC	Acurio, J.	UNIV OF DAYTON	NAS 3-21698	Militello, J.	41	3262
LERC	Vernon, R. W.	UNIV OF DELAWARE	NSG 3184	Birchenall, C. E.	47	1835
LERC	Adamczyk, J. J.	UNIV OF DELAWARE	NSG 3189	Seidel, B. S.	41	1836
LERC	Farrell, C. A., Jr.	UNIV OF DELAWARE	NSG 3270	Seidel, B. S.	41	1837
LERC	Sheibley, D. W.	UNIV OF FLORIDA	NGR 10-005-182	Walker, R. D., Jr.	43	1940
LERC	Godlewski, M. P.	UNIV OF FLORIDA	NSG 3018	Lindholm, F. A.	45	1946
LERC	Dutta, S.	UNIV OF FLORIDA	NSG 3254	Hench, L. L.	47	1947
LERC	Sater, B. L.	UNIV OF FLORIDA	NSG 3273	Hench, L. L.	56	1948
LERC	Bober, L. J.	UNIV ILLINOIS-URBANA	NGL 14-005-140	Chow, W. L.	41	2116

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LERC	Dunning, J. W., Jr.	UNIV ILLINOIS-URBANA	NGR 14-005-200	Verdeyen, J. T.	13	2119
LERC	Cochran, T. H.	UNIV ILLINOIS-URBANA	NSG 3043	Strehlow, R. A.	43	2125
LERC	Scribbe, H. W.	UNIV ILLINOIS-URBANA	NSG 3098	Conry, T. F.	46	2126
LERC	Cochran, T. H.	UNIV ILLINOIS-URBANA	NSG 3293	Strehlow, R. A.	13	2127
LERC	Stockman, N. O.	UNIV OF IOWA	NSG 3117	Chou, D. C.	41	2216
LERC	Johnson, G. M.	UNIV OF IOWA	NSG 3305	Chen, C. J.	41	2217
LERC	Hallenback, C. A.	UNIV OF KANSAS	NSG 3290	Armstrong, T. P.	13	2243
LERC	Cochran, T. H.	UNIV OF KENTUCKY	NSG 3114	Altenkirch, R. A.	46	2263
LERC	Fleming, D. P.	UNIV OF LOUISVILLE	NSG 3200	Childs, D. W.	46	2267
LERC	Simoneau, R. J.	UNIV MARYLAND-COL PK	NGR 21-002-344	Sengers, J. V.	13	2375
LERC	Coles, W. D.	UNIV MARYLAND-COL PK	NGR 21-002-400	Spain, I. L.	13	2378
LERC	Cooper, L. P.	UNIV MICH-ANN ARBOR	NSG 3148	Nicholls, J. A.	41	2675
LERC	Beam, L. W.	UNIV MICH-ANN ARBOR	NSG 3161	Bolt, J. A.	46	2676
LERC	Ercegovic, D. E.	UNIV MICH-ANN ARBOR	NSG 3165	Kauffman, C. W.	41	2677
LERC	Lauver, R. W.	UNIV MICH-ANN ARBOR	NSG 3192	Yeh, G. S.	47	2678
LERC	Sovey, J. S.	U MINN-MNPLS-ST PAUL	NSG 3041	Wehner, G. K.	13	2713
LERC	Morris, J. F.	U MINN-MNPLS-ST PAUL	NSG 3094	Chanin, L. M.	19	2714
LERC	Wedeven, L. D.	UNIV MO-ROLLA	NSG 3113	Medrow, R. A.	46	2770
LERC	Weigand, A. J.	UNIV MO-ROLLA	NSG 3199	Yasuda, H. K.	19	2771
LERC	Rice, E. J.	UNIV MO-ROLLA	NSG 3231	Eversman, W.	41	2772
LERC	Haggard, J. B.	UNIV OF NOTRE DAME	NAS 3-21018	Kanury, M.	11	2175
LERC	Seldner, K.	UNIV OF NOTRE DAME	NSG 3048	Sain, M. K.	45	2178
LERC	Crouse, J. E.	UNIV OF NOTRE DAME	NSG 3133	Roberts, W. B.	41	2179
LERC	Burkhart, J. A.	UNIV OF NOTRE DAME	NSG 3182	Gabriel, G. J.	45	2180
LERC	Scott, J. N.	UNIV OF NOTRE DAME	NSG 3195	Atassi, H.	13	2181
LERC	McBrien, E. F.	UNIV OF PITTSBURGH	NSG 3163	Hamilton, H. B.	45	3443
LERC	Brown, G. V.	UNIV OF PITTSBURGH	NSG 3168	Wallace, W. E.	13	3444
LERC	Kohl, F. J.	UNIV OF PITTSBURGH	NSG 3214	Meier, G. H.	47	3445
LERC	Lyons, V. J.	UNIV OF SHEFFIELD	NSG 7517	Chigier, N. A.	43	4029
LERC	Secunde, R. R.	UNIV OF SOUTHERN CAL	NSG 3243	Campbell, P. E.	45	1701
LERC	Diehl, L. A.	UNIV OF SOUTHERN CAL	NSG 3248	Gerstein, M.	46	1702
LERC	Graham, R. W.	UNIV TENNESSEE-KNOXV	NSG 3173	Reid, R. L.	46	3514
LERC	Staiger, P. J.	UNIV TENNESSEE-KNOXV	NSG 3224	Dicks, J. B.	49	3515
LERC	Rostafinski, W. A.	UNIV TENNESSEE-KNOXV	NSG 3287	Kurosaka, M.	41	3516
LERC	Smith, J. M.	UNIV TEXAS-ARLINGTON	NSG 3255	Wilson, D. R.	49	3638
LERC	Moeckel, W. E.	UNIV TEXAS-AUSTIN	NSG 3089	Powers, E. J.	45	3667
LERC	Sheibley, D. W.	UNIV TEXAS-AUSTIN	NSG 3190	Lagow, R. J.	56	3668
LERC	Rice, E. J.	UNIV TEXAS-AUSTIN	NSG 3198	Blackstock, D. T.	13	3669
LERC	Brandhorst, H. W., Jr.	UNIV TEXAS-EL PASO	NSG 3146	Brient, S. J.	47	3712
LERC	Finnegan, P. M.	UNIV OF TOLEDO	NCC 3 5	Keith, T. G., Jr.	49	3271
LERC	Merrill, W. C.	UNIV OF TOLEDO	NSG 3084	Leininger, G. G.	45	3272
LERC	Connolley, D. J.	UNIV OF TOLEDO	NSG 3099	Rush, W. F.	13	3273
LERC	Labus, T. L.	UNIV OF TOLEDO	NSG 3121	Dewitt, K. J	49	3274
LERC	Chamis, C. C.	UNIV OF TOLEDO	NSG 3139	Koza, K. R.	41	3275
LERC	Cunningham, R. E.	UNIV OF TOLEDO	NSG 3156	Keith, T. G., Jr.	46	3276
LERC	Lehtinen, B.	UNIV OF TOLEDO	NSG 3171	Leininger, G. G.	45	3277
LERC	Stearns, C. A.	UNIV OF TOLEDO	NSG 3250	Edwards, J. G.	12	3278
LERC	Gruber, R. P.	UNIV OF TOLEDO	NSG 3281	Stuart, T. A.	45	3279
LERC	Kascak, A. F.	UNIV OF VIRGINIA	NSG 3177	Barrett, L. E.	46	3862
LERC	Behrendt, D. R.	UNIV OF VIRGINIA	NSG 3242	Wawner, F. E., Jr.	47	3863
LERC	Valentine, H. H.	UNIV OF WASHINGTON	NSG 3152	Martini, W. R.	46	3941
LERC	Valentine, H. H.	UNIV OF WASHINGTON	NSG 3194	Martini, W. R.	46	3942
LERC	Braun, W. H.	UNIV OF WASHINGTON	NSG 3261	Seebass, A. R.	41	3943
LERC	DiCarlo, J. A.	UNIV OF WYOMING	NSG 3217	Adams, D. F.	47	4020
LERC	Maslowski, E. A.	VIRGINIA POLY INST	DEN 3 65	Demerdash, N. A.	45	3869
LERC	Jones, A. L.	VIRGINIA POLY INST	NSG 3073	Jakubowski, A. K.	41	3911
LERC	Sovey, J. S.	VIRGINIA POLY INST	NSG 3204	Dwight, D. W.	47	3912
LERC	Ludwig, L. P.	VIRGINIA POLY INST	NSG 3239	Mitchell, L. D.	41	3913

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LERC	Kolecki, J. C.	VIRGINIA POLY INST	NSG 3274	Lee, F. C.	45	3914
LERC	Lehtinen, B.	VIRGINIA POLY INST	NSG 3275	Leonard, R. G.	41	3915
LERC	Smith, J. M.	WICHITA STATE UNIV	NSG 3186	Jordan, K. D.	21	2256
LERC	Richards, T. R.	WICHITA STATE UNIV	NSG 3277	Wentz, W. H., Jr.	41	2257
LERC	Godlewski, M. P.	WORCESTER POLY INST	NSG 3137	Lanyon, H. P.	45	2622
LERC	DiCarlo, J. A.	WRIGHT STATE UNIV	NSG 3240	Bambakidis, G.	13	3295
LERC	Fryburg, G. C.	YALE UNIVERSITY	NSG 3107	Rosner, D. E.	47	1826
LERC	Fryburg, G. C.	YALE UNIVERSITY	NSG 3169	Rosner, D. E.	12	1827
LERC	Godlewski, M. P.	YESHIVA UNIVERSITY	NSG 3123	Pollak, F	45	3102
MSFC	Williams, J. R.	ALABAMA A&M UNIV	NAS 8-32945	Lal, R. B.	47	1000
MSFC	Downs, S. W., Jr.	ALABAMA A&M UNIV	NGR 01-001-023	Montgomery, O. L.	55	1002
MSFC	Schafer, C. F.	ALABAMA A&M UNIV	NSG 8033	Lal, R. B.	13	1003
MSFC	Bilbro, J. W.	ALABAMA A&M UNIV	NSG 8037	Huth, G. C.	45	1004
MSFC	Humphries, W. R.	ALABAMA A&M UNIV	NSG 8041	Saha, H.	46	1005
MSFC	Allen, R. E.	ALABAMA A&M UNIV	NSG 8042	Savage, J.	59	1006
MSFC	Snyder, R. S.	ALABAMA A&M UNIV	NSG 8051	Gibson, W. L.	59	1007
MSFC	Gould, J. M.	ALABAMA A&M UNIV	NSG 8057	Shiva, S. G.	45	1008
MSFC	Downs, S. W., Jr.	ALABAMA A&M UNIV	NSG 8062	Montgomery, O. L.	39	1009
MSFC	Snyder, R. S.	ALABAMA A&M UNIV	NSG 8064	Savage, J.	59	1010
MSFC	Smith, O. E.	ALABAMA A&M UNIV	NSG 8065	Temple, E. C.	21	1011
MSFC	Smith, A. D.	ALABAMA A&M UNIV	NSG 8066	Montgomery, O. L.	39	1012
MSFC	Nerren, B. H.	ALABAMA A&M UNIV	NSG 8067	Sharma, G. C.	51	1013
MSFC	Burns, R. E.	ALABAMA A&M UNIV	NSG 8068	Williams, A. C.	13	1014
MSFC	Lee, G.	ARIZONA STATE UNIV	NAS 8-32230	Woodfin, M. A.	21	1072
MSFC	Alexander, M. B.	ARIZONA STATE UNIV	NAS 8-32357	Logan, E., Jr	31	1073
MSFC	Reeves, F. A.	ARIZONA STATE UNIV	NAS 8-32937	Wagner, J. B.	47	1074
MSFC	Finnell, S. E.	ATHENS STATE COLLEGE	NAS 8-32220	Martin, A. M.	13	1015
MSFC	Woodis, K. W.	ATHENS STATE COLLEGE	NAS 8-32834	Workman, G. L.	45	1016
MSFC	Zwiener, J. M.	ATHENS STATE COLLEGE	NAS 8-32920	Workman, G L	19	1017
MSFC	Kent, M. I.	ATLANTA UNIVERSITY	NSG 8019	Reed, J. L.	12	1968
MSFC	Matheney, J. L.	AUBURN UNIV-AUBURN	NAS 8-31572	Tung, C.	45	1018
MSFC	Huffman, J. D.	AUBURN UNIV-AUBURN	NAS 8-32215	Vachon, R. I.	39	1019
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-32633	Cook, K. B.	49	1020
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-32634	Kerns, D. V.	49	1021
MSFC	Routh, D. E.	AUBURN UNIV-AUBURN	NAS 8-33092	Kerns, D. V	45	1022
MSFC	Shackelford, B. W., Jr.	AUBURN UNIV-AUBURN	NCA 8-130	Sforzini, R. H.	41	1023
MSFC	Shackleford, B. W., Jr.	AUBURN UNIV-AUBURN	NCA 8-132	Sforzini, R. H.	46	1024
MSFC	Wagnon, F. W.	AUBURN UNIV-AUBURN	NCA 8-133	Irwin, J. D.	45	1025
MSFC	Daniel, C. C.	AUBURN UNIV-AUBURN	NSG 8047	Flood, C. A., Jr.	49	1027
MSFC	O'Dell, C. R.	BELOIT COLLEGE	NAS 8-32901	Schroeder, D. J.	11	3965
MSFC	Jones, J. B., Jr.	BELOIT COLLEGE	NAS 8-33355	Winkler, P. F., Jr.	11	3966
MSFC	Guynes, B. V.	BOSTON UNIVERSITY	NAS 8-32844	Mendillo, M	31	2429
MSFC	Jones, J. B., Jr.	BRANDEIS UNIVERSITY	NAS 8-33326	Willis, A. G.	11	2438
MSFC	Jones, J. B., Jr.	BRANDEIS UNIVERSITY	NAS 8-33343	Ghigo, F. D.	11	2439
MSFC	Talley, D.	CALIF INST OF TECH	NAS 8-27978	Stone, E. C.	11	1178
MSFC	Gross, L. A.	CALIF INST OF TECH	NAS 8-29313	Acosta, A. J.	46	1179
MSFC	Gross, L. A.	CALIF INST OF TECH	NAS 8-33108	Costa, A. J	46	1180
MSFC	DeLoach, A. C.	CALIF INST OF TECH	NAS 8-33215	Moore, R. L.	13	1181
MSFC	Jones, J. B., Jr.	CALIF INST OF TECH	NAS 8-33331	Garmire, G. P	11	1182
MSFC	Jones, J. B., Jr.	CALIF INST OF TECH	NAS 8-33332	Garmire, G. P.	11	1183
MSFC	Schafer, C. F.	CASE WESTERN RESERVE	NAS 8-31907	Ostrach, S.	12	3146
MSFC	Reeves, F. A.	CASE WESTERN RESERVE	NAS 8-33015	Ostrach, S.	13	3147
MSFC	Williams, J. R.	CLARKSON COL OF TECH	NAS 8-32944	Subramanian, R. S.	13	2915
MSFC	Fichtl, G. H.	COLORADO STATE UNIV	NAS 8-31673	Edwards, H. W.	46	1715
MSFC	Manning, H. S.	COLUMBIA UNIVERSITY	NAS 8-30753	Novick, R.	11	2923
MSFC	Seltzer, S. M.	COLUMBIA UNIVERSITY	NAS 8-32212	Likins, P. A.	19	2924
MSFC	West, G. S., Jr.	COLUMBIA UNIVERSITY	NAS 8-33378	Balachandran, N. K.	31	2925
MSFC	Black, R. E.	DREXEL UNIVERSITY	NAS 8-33372	Lord, A. E.	31	3348

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
MSFC	Kent, M. I.	FISK UNIVERSITY	NSG 8035	Mickens, R. E.	12	3483
MSFC	Kroes, R. L.	FISK UNIVERSITY	NSG 8060	Silberman, E.	13	3484
MSFC	Downs, S. W., Jr.	GEORGIA INST OF TECH	NAS 8-31990	Faust, C. E.	32	1985
MSFC	Smith, O. E.	GEORGIA INST OF TECH	NAS 8-32897	Justus, C. G.	31	1986
MSFC	Reed, B.	GEORGIA INST OF TECH	NAS 8-33093	Pierce, A. D.	49	1987
MSFC	Johnston, M. H.	GEORGIA INST OF TECH	NAS 8-33438	Brown, J. L.	47	1988
MSFC	Inman, R. A.	GEORGIA INST OF TECH	NAS 8-33605	Kozakoff, D. J.	45	1989
MSFC	Snoddy, W. C.	HARVARD UNIVERSITY	NAS 5-3949	Hughes, B. M.	11	2444
MSFC	Snoddy, W. C.	HARVARD UNIVERSITY	NAS 8-31374	Vaiana, G. S	13	2447
MSFC	Lacy, L. L.	HARVARD UNIVERSITY	NAS 8-32691	Turnbull, D.	13	2448
MSFC	Dailey, C. C.	INDIANA U-BLOOMINGTN	NAS 8-33087	Mufson, S. L.	11	2137
MSFC	Dailey, C. C.	IOWA STATE UNIV	NAS 8-33013	Lamb, R. C.	11	2182
MSFC	Jones, J. B., Jr.	IOWA STATE UNIV	NAS 8-33334	Lamb, R. C.	11	2183
MSFC	O'Dell, C. R.	JOHNS HOPKINS UNIV	NAS 8-32903	Fastie, W. G.	11	2309
MSFC	DeLoach, A. C.	JOHNS HOPKINS UNIV	NAS 8-33106	Roelof, E. C.	13	2310
MSFC	Williams, J. R.	LEHIGH UNIVERSITY	NAS 8-32951	VanDerHoff, J. W.	13	3362
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-27972	Bradt, H. V.	11	2505
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-27975	Lewin, W. H.	11	2506
MSFC	Davidson, M. C.	MASS INST OF TECH	NAS 8-30537	Gatos, H. C.	47	2507
MSFC	Manning, H. S.	MASS INST OF TECH	NAS 8-30752	Clark, G. W.	11	2508
MSFC	Reeves, F. A.	MASS INST OF TECH	NAS 8-31350	Uhlmann, D. R.	47	2509
MSFC	Reeves, F. A.	MASS INST OF TECH	NAS 8-31552	Uhlmann, D. R.	47	2510
MSFC	VonTiesenhausen, G. F.	MASS INST OF TECH	NAS 8-32925	Miller, R. H	47	2511
MSFC	Davidson, M. C.	MASS INST OF TECH	NAS 8-32994	Hitt, A. F.	13	2512
MSFC	DeLoach, A. C.	MASS INST OF TECH	NAS 8-33137	Sullivan, J. D.	13	2513
MSFC	DeLoach, A. C.	MASS INST OF TECH	NAS 8-33138	Frankenthal, S.	13	2514
MSFC	Jones, J. B., Jr.	MIDDLEBURY COLLEGE	NAS 8-33335	Winkler, P. F., Jr.	11	3751
MSFC	Hollis, B. R., Jr.	MISSISSIPPI STATE U	NAS 8-26749	Trotter, D.	13	2733
MSFC	Wallace, G. R.	MISSISSIPPI STATE U	NAS 8-31373	Ingels, F. M.	45	2734
MSFC	Darden, J. H.	MISSISSIPPI STATE U	NAS 8-32810	Mitchell, J. R.	22	2735
MSFC	Sims, J. L.	MISSISSIPPI STATE U	NAS 8-32912	Kassner, J. L., Jr.	49	2736
MSFC	Hollis, B. R., Jr.	MISSISSIPPI STATE U	NAS 8-33448	Wade, T. E.	45	2737
MSFC	Edge, T. M.	MISSISSIPPI STATE U	NAS 8-33450	Causey, W. H., Jr.	45	2738
MSFC	Atherton, J. R.	MISSISSIPPI STATE U	NAS 8-33570	Ingels, F. M.	11	2739
MSFC	Broussard, P. H.	MISSISSIPPI STATE U	NCA 8-131	Jones, E. W.	46	2740
MSFC	Eby, P. B.	MONTANA STATE UNIV	NSG 8061	Nordvedt, K	13	2795
MSFC	Burch, J. L.	MOREHOUSE COLLEGE	NSG 8043	Turner, J. M.	13	2014
MSFC	Patterson, W. J.	MORRIS BROWN COLLEGE	NSG 8027	Maxwell, A.	12	2015
MSFC	Jones, J. B., Jr.	NEW MEX INST MINING	NAS 8-33341	Gibson, D. M.	11	2882
MSFC	Reeves, F. A.	NEW YORK UNIVERSITY	NAS 8-33099	Johnson, A. J.	59	2998
MSFC	Stuckey, J. M.	NO CAR A&T STATE U	NSG 8045	Sharma, A. V.	46	3116
MSFC	Paludan, C. T.	NO CAROLINA STATE U	NAS 8-31984	Welby, G.	39	3120
MSFC	Downs, S. W., Jr.	NORTH GEORGIA COL	NAS 8-30619	Biesbrock, J. A.	51	2016
MSFC	Jones, J. B., Jr.	NORTHWESTERN UNIV	NAS 8-33010	Ulmer, M. P.	11	2064
MSFC	Jones, J. B., Jr.	NORTHWESTERN UNIV	NAS 8-33354	Ulmer, M. P.	11	2065
MSFC	Hill, C. K.	OREGON STATE UNIV	NAS 8-32694	Barber, D. A.	31	3319
MSFC	Neuschaefer, R.	PRINCETON UNIVERSITY	NAS 8-32614	Saville, D. A	13	2841
MSFC	McPherson, W. B.	PRINCETON UNIVERSITY	NAS 8-33102	Caveny, L. H.	49	2842
MSFC	Jones, J. B., Jr.	PRINCETON UNIVERSITY	NAS 8-33345	Cowie, L. L.	11	2843
MSFC	Davidson, M. C.	RENSSELAER POLY-NY	NAS 8-26146	Wiedmann, H.	47	3027
MSFC	Reeves, F. A.	RENSSELAER POLY-NY	NAS 8-32425	Glicksman, M. E.	47	3028
MSFC	Davidson, M. C.	RENSSELAER POLY-NY	NAS 8-32639	Wiedemeier, H.	19	3029
MSFC	Reeves, F. A.	RENSSELAER POLY-NY	NAS 8-32690	Glicksman, M. E.	12	3030
MSFC	Williams, J. R.	RENSSELAER POLY-NY	NAS 8-32936	Wiedemeier, H.	47	3031
MSFC	Lacy, L. L.	RENSSELAER POLY-NY	NAS 8-33074	Ross, S.	13	3032
MSFC	Brantley, W.	RICE UNIVERSITY	NAS 8-33023	Few, A. A.	49	3545
MSFC	Oran, W. A.	RICE UNIVERSITY	NAS 8-33199	Margrave, J.	47	3546
MSFC	Jones, J. B., Jr.	RICE UNIVERSITY	NAS 8-33361	Haymes, R. C.	11	3547

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MSFC	Hill, C. K.	ST LOUIS UNIVERSITY	NAS 8-32838	Fuelberg, H. E.	31	2754
MSFC	Hill, C. K.	ST LOUIS UNIVERSITY	NAS 8-33370	Fuelberg, H. E.	31	2755
MSFC	Jayroe, R. R., Jr.	SAVANNAH STATE COL	NSG 8048	Wenner, D. B.	45	2018
MSFC	Williamson, J. G.	SO UNIV-BATON ROUGE	NSG 8025	Tabony, J.	46	2282
MSFC	White, J. B.	SO UNIV-BATON ROUGE	NSG 8053	Montgomery, V. T	45	2283
MSFC	Owen, R. B.	SO UNIV-BATON ROUGE	NSG 8056	Scott, R. L., Jr.	46	2284
MSFC	Snoddy, W. C.	STANFORD UNIVERSITY	NAS 8-32263	Underwood, J. H.	11	1315
MSFC	Potter, R. A.	STANFORD UNIVERSITY	NAS 8-32355	Everitt, C. W.	13	1316
MSFC	Urban, E. W.	STANFORD UNIVERSITY	NAS 8-32605	Everitt, C. W.	13	1317
MSFC	Guynes, B. V.	STANFORD UNIVERSITY	NAS 8-32852	Darosa, A. V.	31	1318
MSFC	Dailey, C. C.	STANFORD UNIVERSITY	NAS 8-33012	Walker, A. B., Jr.	11	1319
MSFC	Davidson, M. C	STANFORD UNIVERSITY	NAS 8-33110	Tiller, W. A.	19	1320
MSFC	Dailey, C. C.	STANFORD UNIVERSITY	NAS 8-33234	Wagoner, R. V.	11	1321
MSFC	Clifton, K. S.	STATE UNIV NY-ALBANY	NAS 8-32485	Schuerman, D.	31	3048
MSFC	Vaughan, O. H.	STATE UNIV NY-ALBANY	NAS 8-32893	Vonnegut, B.	39	3049
MSFC	Williams, J. R.	STATE UNIV NY-ALBANY	NAS 8-32947	VanOss, C. J.	59	3050
MSFC	Turner, R. E.	STATE UNIV NY-ALBANY	NAS 8-33380	Orville, R. E	31	3051
MSFC	Gary, G. A.	STATE UNIV NY-ALBANY	NSG 8040	Weinberg, J. L.	11	3061
MSFC	O'Dell, C. R.	STATE U NY-STONY BRK	NAS 8-32904	Caldwell, J. J.	11	3066
MSFC	Humphries, W. R.	TENNESSEE TECH U	NAS 8-31564	Griggs, E. I.	31	3490
MSFC	Hill, C. K.	TEXAS A&M UNIVERSITY	NAS 8-31773	Scoggins, J. R.	31	3575
MSFC	Nowakowski, M.	TEXAS A&M UNIVERSITY	NAS 8-32527	Parker, D. L.	13	3576
MSFC	Young, L. E.	TUSKEGEE INSTITUTE	NSG 8038	Doreswamy, C. V.	45	1035
MSFC	Brantley, L. W.	TUSKEGEE INSTITUTE	NSG 8054	Sellers, J. P., Jr.	46	1036
MSFC	Rhodes, P. H.	UNIV ALA-BIRMINGHAM	NAS 8-32923	Sachs, G.	59	1037
MSFC	Bannister, T.	UNIV ALA-BIRMINGHAM	NAS 8-33014	Chiovetti, R., Jr.	59	1038
MSFC	Tandberghanssen, E.	UNIV ALA-HUNTSVILLE	NAS 8-28097	Wu, S. T.	13	1040
MSFC	Decher, R.	UNIV ALA-HUNTSVILLE	NAS 8-29316	Hendricks, J. B.	46	1041
MSFC	Chappell, C. R.	UNIV ALA-HUNTSVILLE	NAS 8-30563	Comfort, R. H.	13	1042
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-31170	Gregory, J. C	13	1043
MSFC	West, G. S., Jr.	UNIV ALA-HUNTSVILLE	NAS 8-31171	Hung, R. J.	39	1044
MSFC	Price, J. M.	UNIV ALA-HUNTSVILLE	NAS 8-31293	Christiensen, D.	13	1045
MSFC	Vaughan, O. H.	UNIV ALA-HUNTSVILLE	NAS 8-31729	Hung, R. J.	13	1046
MSFC	Parnell, T. A.	UNIV ALA-HUNTSVILLE	NAS 8-31895	Gregory, J. C	13	1047
MSFC	Urban, E. W.	UNIV ALA-HUNTSVILLE	NAS 8-32818	Karr, G. R.	13	1048
MSFC	Jones, R. E.	UNIV ALA-HUNTSVILLE	NAS 8-33096	Shiva, S. G.	22	1049
MSFC	Morgan, S. H.	UNIV ALA-HUNTSVILLE	NAS 8-33132	Wu, S. T.	19	1050
MSFC	DeLoach, A. C.	UNIV ALA-HUNTSVILLE	NAS 8-33216	Steinolfson, R. S.	13	1051
MSFC	Gause, R. L.	UNIV ALA-HUNTSVILLE	NAS 8-33377	Castle, J. G.	47	1052
MSFC	Urban, E. W.	UNIV ALA-HUNTSVILLE	NAS 8-33384	Hendricks, J. B.	12	1053
MSFC	Morgan, S. H.	UNIV ALA-HUNTSVILLE	NAS 8-33443	Wu, S. T.	19	1054
MSFC	Aldrich, B. R.	UNIV ALA-HUNTSVILLE	NAS 8-33542	Hendricks, J. B.	47	1055
MSFC	Lacy, L. L.	UNIV ALA-HUNTSVILLE	NAS 8-33548	Davis, J. H.	47	1056
MSFC	Owen, R. B.	UNIV ALA-UNIVERSITY	NAS 8-32386	Lin, H. K	13	1058
MSFC	Williams, D. E.	UNIV ALA-UNIVERSITY	NAS 8-33430	Raburn, W. D.	45	1059
MSFC	Peters, P. N.	UNIV ALA-UNIVERSITY	NAS 8-33507	Bertsch, W.	31	1060
MSFC	Parnell, T. A.	UNIV OF ARIZONA	NAS 8-31192	Benton, E. V	11	1100
MSFC	Snyder, R. S.	UNIV OF ARIZONA	NAS 8-31948	Bartels, P. H.	59	1101
MSFC	Williams, J. R.	UNIV OF ARIZONA	NAS 8-32950	Bier, M.	59	1102
MSFC	Jones, J. B., Jr.	UNIV OF ARIZONA	NAS 8-33351	Strittmatter, P. A.	11	1103
MSFC	Falls, L. W.	UNIV ARKANSAS-FAYETV	NAS 8-31550	Tubbs, J. D.	31	1162
MSFC	Smith, O. E.	UNIV ARKANSAS-FAYETV	NAS 8-33224	Tubbs, J. D.	31	1163
MSFC	Ondrak, B. T.	UNIV CALIF-BERKELEY	NAS 8-29603	Price, P. B.	13	1421
MSFC	Marmann, R.	UNIV CALIF-BERKELEY	NAS 8-32577	Bowyer, C. S.	11	1422
MSFC	Dailey, C. C.	UNIV CALIF-BERKELEY	NAS 8-33011	Anderson, K. A.	11	1423
MSFC	Jones, J. B., Jr.	UNIV CALIF-BERKELEY	NAS 8-33349	Bowyer, C. S.	11	1424
MSFC	Jones, J. B., Jr.	UNIV CALIF-BERKELEY	NAS 8-33356	McKee, C.	11	1425
MSFC	Barnes, J. B.	UNIV CALIF-BERKELEY	NAS 8-33357	Anderson, K. A.	11	1426

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MSFC	Williams, J. R.	UNIV CALIF-L ANGELES	NAS 8-33115	Bunshah, R. F.	47	1508
MSFC	Jones, J. B., Jr.	UNIV CALIF-L ANGELES	NAS 8-33353	Margon, B. H.	11	1509
MSFC	Manning, H. S.	UNIV CALIF-SAN DIEGO	NAS 8-27974	Peterson, L. E.	11	1579
MSFC	Chappell, C. R.	UNIV CALIF-SAN DIEGO	NAS 8-31145	McIlwain, C. E.	13	1580
MSFC	DeLoach, A. C.	UNIV CALIF-SAN DIEGO	NAS 8-32984	Svestka, Z.	13	1581
MSFC	Jones, J. B., Jr.	UNIV CALIF-S CRUZ	NAS 8-33347	Davies, R. L.	11	1659
MSFC	Bianca, C.	UNIV OF CENTRAL FLA	NAS 8-32835	Carroll, W. E.	47	1922
MSFC	Smith, O. E.	UNIV OF CENTRAL FLA	NAS 8-33071	Somerville, P. N.	31	1923
MSFC	Guynes, B. V.	UNIV OF CHICAGO	NAS 8-32828	Meyer, P.	31	2078
MSFC	Jones, J. B., Jr.	UNIV OF CHICAGO	NAS 8-33350	Meyer, P.	11	2079
MSFC	Jones, C. T.	UNIV COLORADO-BOLDR	NAS 8-31958	Toomre, D. J.	39	1748
MSFC	Dailey, C. C.	UNIV COLORADO-BOLDR	NAS 8-33084	Linsky, J. L.	11	1749
MSFC	Jones, J. B., Jr.	UNIV COLORADO-BOLDR	NAS 8-33333	Haisch, B. M.	11	1750
MSFC	Jones, J. B., Jr.	UNIV COLORADO-BOLDR	NAS 8-33338	McCray, R.	11	1751
MSFC	Jones, J. B., Jr.	UNIV COLORADO-BOLDR	NAS 8-33342	Ayres, T. R.	11	1752
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-31294	Leurs, J. K.	41	3264
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-32111	Luers, J. K.	41	3265
MSFC	Camp, D. W.	UNIV OF DAYTON	NAS 8-33369	Leurs, J. K.	31	3266
MSFC	Schell, J. T.	UNIV OF FLORIDA	NAS 8-20247	Patterson, E. P.	12	1928
MSFC	DeLoach, A. C.	UNIV OF HAWAII-MANOA	NAS 8-33219	Heasley, J. N.	13	2030
MSFC	Clark, J.	UNIV HOUSTON-CL LAKE	DEN 8 1	Samfield, E.	31	3635
MSFC	Costes, N. C.	UNIV ILLINOIS-CHICGO	NAS 8-32993	Silver, M. L.	44	2108
MSFC	Guynes, B. V.	UNIV OF IOWA	NAS 8-32807	Shawhan, S. D.	31	2210
MSFC	Winder, S. W.	UNIV OF LOUISVILLE	NAS 8-31233	Childs, D. W.	42	2264
MSFC	Scott, F. E.	UNIV MARYLAND-COL PK	NAS 8-32148	Colwell, R. R.	54	2347
MSFC	DeLoach, A. C.	UNIV MARYLAND-COL PK	NAS 8-33105	Rundu, M. R.	13	2348
MSFC	Jones, J. B., Jr.	UNIV MARYLAND-COL PK	NAS 8-33329	Scott, J. S.	11	2349
MSFC	Jones, J. B., Jr.	UNIV MARYLAND-COL PK	NAS 8-33346	Erickson, W. C.	11	2350
MSFC	Jones, J. B., Jr.	UNIV MARYLAND-COL PK	NAS 8-33358	Wilson, A. S.	11	2351
MSFC	Urban, E. W.	UNIV MARYLAND-COL PK	NAS 8-33557	Paik, H. J.	13	2352
MSFC	Fowlis, W. W.	UNIV OF MIAMI	NAS 8-32898	Geisler, J. E.	31	1954
MSFC	Fowlis, W. W.	UNIV OF MIAMI	NAS 8-33558	Geisler, J. E.	31	1955
MSFC	Ruff, R. C.	UNIV MICH-ANN ARBOR	NAS 8-31987	Carignan, G. R.	19	2650
MSFC	Chappell, C. R.	UNIV MICH-ANN ARBOR	NAS 8-32332	Carignan, G. R.	19	2651
MSFC	Jones, C. T.	UNIV MICH-ANN ARBOR	NAS 8-32569	Torr, M. R.	19	2652
MSFC	Ruff, R. C.	UNIV MICH-ANN ARBOR	NAS 8-32661	Shyn, T. W.	39	2653
MSFC	Talley, D.	U MINN-MNPLS-ST PAUL	NAS 8-27977	Waddington, C. J.	11	2704
MSFC	Smith, R. E.	UNIV MO-COLUMBIA	NAS 8-31150	Tung, C.	31	2756
MSFC	Smith, R. E.	UNIV MO-COLUMBIA	NAS 8-31849	Kassner, J. L., Jr.	31	2757
MSFC	Fallon, R. A.	UNIV MO-ROLLA	NAS 8-32976	Hagen, D. E.	31	2764
MSFC	Geller, G.	UNIV MO-ROLLA	NSG 8055	Summers, D. A.	47	2773
MSFC	Smith, R. E.	UNIV NEVADA-DRI	NAS 8-31470	Squires, P.	31	2802
MSFC	Fallon, R. A.	UNIV NEVADA-DRI	NAS 8-32975	Kocmond, W. C.	31	2803
MSFC	Fallon, R. A.	UNIV NEVADA-DRI	NAS 8-32977	Hallett, J.	31	2804
MSFC	Fallon, R. A.	UNIV NEVADA-DRI	NAS 8-33273	Kocmond, W. C.	31	2805
MSFC	Anderson, B. J.	UNIV NEVADA-DRI	NAS 8-33295	Hallett, J.	31	2806
MSFC	Smith, R. E.	UNIV OF NEVADA-RENO	NAS 8-31441	Telford, J. W.	19	2809
MSFC	Schrick, B. J.	UNIV OF NEVADA-RENO	NAS 8-32313	Kocmond, W. C.	31	2810
MSFC	Humphries, W. R	UNIV OF NEW ORLEANS	NAS 8-33479	Bankston, J. D., Jr.	46	2289
MSFC	Camp, D. W.	UNIV OKLAHOMA-NORMAN	NAS 8-31377	McCarthy, J.	31	3309
MSFC	Jones, J. B., Jr.	UNIV OKLAHOMA-NORMAN	NAS 8-33330	Chincarini, G. L.	11	3310
MSFC	Scott, F. E.	UNIV ORGEON-HLTH CTR	NAS 8-32162	Knox, R. J.	59	3336
MSFC	Reeves, F. A.	UNIV ORGEON-HLTH CTR	NAS 8-32353	Brooks, D. E.	51	3337
MSFC	Reeves, F. A.	UNIV ORGEON-HLTH CTR	NAS 8-32609	Seaman, G. V.	59	3338
MSFC	Nerrin, B. N.	UNIV ORGEON-HLTH CTR	NAS 8-32817	Brooks, D. E.	59	3339
MSFC	Dailey, C. C.	UNIV OF PENNSYLVANIA	NAS 8-33088	Shen, B. S.	11	3425
MSFC	Jones, J. B., Jr.	UNIV OF PENNSYLVANIA	NAS 8-33336	Shen, B. S.	11	3426
MSFC	Jones, J. B., Jr.	UNIV OF ROCHESTER	NAS 8-33328	Duthie, J. G.	11	3096

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
MSFC	Parnell, T. A.	UNIV SAN FRANCISCO	NAS 8-26758	Benton, E. V.	13	1666
MSFC	Lowrey, D. O.	UNIV SO CAROLINA-COL	NAS 8-28660	Fellers, R. G.	45	3472
MSFC	Craig, G. D.	UNIV TENNESSEE-KNOXV	NAS 8-29271	Gonzalez, R. C.	45	3494
MSFC	Sloan, J.	UNIV TENNESSEE-KNOXV	NAS 8-29584	Frost, W.	46	3495
MSFC	Hill, C. K.	UNIV TENNESSEE-KNOXV	NAS 8-31718	Frost, W.	31	3496
MSFC	Vaughan, O. H.	UNIV TENNESSEE-KNOXV	NAS 8-32031	Connett, J. R.	31	3[illegible]
MSFC	Bensko, J.	UNIV TENNESSEE-KNOXV	NAS 8-32034	Shahrokhi, F.	32	3498
MSFC	Anderson, B. J.	UNIV TENNESSEE-KNOXV	NAS 8-32611	Carter, J. M.	39	3499
MSFC	Camp, D. W.	UNIV TENNESSEE-KNOXV	NAS 8-32635	Kohl, R. H.	31	3500
MSFC	Camp, D. W.	UNIV TENNESSEE-KNOXV	NAS 8-32692	Frost, W.	31	3501
MSFC	Guttman, C. H.	UNIV TENNESSEE-KNOXV	NAS 8-33065	Hung, J. C.	46	3502
MSFC	Daniel, J. L.	UNIV TENNESSEE-KNOXV	NAS 8-33218	Shahrokhi, F.	39	3503
MSFC	Mercier, D. R.	UNIV TENNESSEE-KNOXV	NAS 8-33225	Smith, V. K., III	41	3504
MSFC	Fowlis, W. W.	UNIV TENNESSEE-KNOXV	NAS 8-33386	Antar, B. N.	31	3505
MSFC	Fichtl, G. H.	UNIV TENNESSEE-KNOXV	NAS 8-33447	Antar, B. N	13	3506
MSFC	Howell, J. T., Jr.	UNIV TENNESSEE-KNOXV	NAS 8-33604	Hung, J. C.	45	3507
MSFC	Snoddy, W. C.	UNIV TEXAS-AUSTIN	NAS 8-31459	Henize, K. G.	11	3643
MSFC	O'Dell, C. R.	UNIV TEXAS-AUSTIN	NAS 8-32905	Lambert, D. L.	11	3644
MSFC	O'Dell, C. R.	UNIV TEXAS-AUSTIN	NAS 8-32906	Jefferys, W. H.	11	3645
MSFC	Chappell, C. R.	UNIV TEXAS-DALLAS	NAS 8-31775	Hanson, W B	19	3698
MSFC	Oran, W. A.	UNIV TEXAS-DALLAS	NAS 8-32689	Hoffman, J. H.	31	3699
MSFC	Chappell, C. R.	UNIV TEXAS-DALLAS	NAS 8-32831	Hanson, W. B	13	3700
MSFC	Chappell, C. R.	UNIV TEXAS-S ANTONIO	NAS 8-32584	Burch, J. L.	31	3720
MSFC	Winter, S. W.	UNIV OF VIRGINIA	NAS 8-31951	Gunter, E. J.	46	3847
MSFC	Jones, J. B , Jr.	UNIV OF VIRGINIA	NAS 8-33327	Thuan, T. X.	11	3848
MSFC	Jones, J B., Jr.	UNIV OF VIRGINIA	NAS 8-33348	Sarazin, C L	11	3849
MSFC	Fallon, R. A.	UNIV OF WASHINGTON	NAS 8-33148	Hobbs, P V	31	3926
MSFC	Jones, J. B., Jr.	UNIV OF WASHINGTON	NAS 8-33337	Szkody, P.	11	3927
MSFC	Jones, J. B., Jr.	UNIV OF WASHINGTON	NAS 8-33344	Boynton, P. E.	11	3928
MSFC	Jones, J. B., Jr.	UNIV OF WASHINGTON	NAS 8-33360	Boynton, P. E.	11	3929
MSFC	Turner, R. E.	UNIV WISC-MADISON	NAS 8-33222	Johnson, D. R.	31	3985
MSFC	Jones, J. B., Jr.	UNIV WISC-MADISON	NAS 8-33340	Cassinelli, J. P.	11	3986
MSFC	Schrick, B. J.	UNIV OF WYOMING	NAS 8-32067	Vali, G.	31	4016
MSFC	Reeves, F. A.	UNIV OF WYOMING	NAS 8-32486	Saunders, C	47	4017
MSFC	Fallon, R. A.	UNIV OF WYOMING	NAS 8-33150	Vali, G.	31	4018
MSFC	Chappell, C. R.	UTAH STATE UNIV	NAS 8-32636	Ratti, W. J.	31	3737
MSFC	Johnson, W. G.	UTAH STATE UNIV	NAS 8-33381	Williamson, P. R.	31	3738
MSFC	Johnson, W. G.	UTAH STATE UNIV	NAS 8-33383	Banks, P. M	31	3739
MSFC	Nichols, R. L.	VANDERBILT UNIVERSTY	NAS 8-32695	Kinser, D. L	47	3520
MSFC	Jones, J. B., Jr.	VIRGINIA POLY INST	NAS 8-33359	Dennison, B K	11	3874
MSFC	Costes, N. C.	VIRGINIA POLY INST	NAS 8-33449	Storre, S.	32	3875
MSFC	DeLoach, A. C.	WEBER STATE COL	NAS 8-33113	Tripp, D. A	31	3750
MSFC	Talley, D.	WASHINGTON UNIVERSTY	NAS 8-27976	Barcus, J.	11	2779
MSFC	Daniels, J. L., Jr.	WASHINGTON UNIVERSTY	NAS 8-32354	Eastwood, L	39	2780
MSFC	Stonemetz, R. E.	WESTRN KENTUCKY UNIV	NAS 8-33387	Healy, H.	31	2269
MSFC	Espy, P. N.	XAVIER UNIV-LA	NSG 8050	Ioup, J. W.	39	2294
MSFC	Eby, P. B.	YALE UNIVERSITY	NAS 8-33572	Parker, P. D	11	1821
NSTL	Wolverton, B. C.	ALCORN STATE UNIV	NSG 8036	Latif, A.	51	2730
NSTL	Wolverton, B. C.	FORT VALLEY STATE C	NSG 735	Rogerson, A C.	39	1974
NSTL	Pearson, R.	GEORGIA INST OF TECH	NAS13-84	Faust, N. L.	22	1990
NSTL	Atwell, B. H.	JACKSON STATE UNIV	NSG 736	Lang, M.	32	2731
NSTL	Wolverton, B. C.	JACKSON STATE UNIV	NSG 8026	Garrity, E.	39	2732
NSTL	Atwell, B. H.	MURRAY STATE UNIV	NAS13-111	Franklin, W A	31	3296
NSTL	Whitley, S. L.	NAVAJO COMMUNITY COL	NSG 737	Isher, S. F.	49	1089
NSTL	Atwell, B. H.	UNIV OF FLORIDA	NAS13-106	Cross, C.	32	1936
NSTL	Butera, M. K.	UNIV OF GEORGIA	NAS13-121	Cooley, J E	32	2022
NSTL	Atwell, B. H.	UNIV OF GEORGIA	NAS13-123	Welch, R.	32	2023
NSTL	Atwell, B. H.	UNIV OF NEW MEXICO	NAS13-109	Morain, S R	32	2896

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NSTL	Atwell, B. H.	UNIV OKLAHOMA-NORMAN	NAS13-122	Harrington, J. A.	32	3311
NSTL	Zetka, E. F.	UNIV OF RHODE ISLAND	NAS13-112	Tippie, V.	33	3463
NSTL	Wolverton, B. C.	UNIV SO MISSISSIPPI	NAS13-81	Stocks, P. K	39	2751
NSTL	Hegwood, R. B.	UNIV SO MISSISSIPPI	NAS13-95	Brundage, W. G.	49	2752
WFC	Stanley, H. R.	COLUMBIA UNIVERSITY	NAS 6-2519	Talwani, M.	32	2922
WFC	Gray, J. W.	CORNELL UNIVERSITY	NSG 6020	Wray, J. D.	19	2979
WFC	Holland, A. C.	DREXEL UNIVERSITY	NSG 6007	Hackney, R. L.	31	3357
WFC	Holland, A. C.	DREXEL UNIVERSITY	NSG 6019	Acquista, C. R.	13	3358
WFC	Torres, A. L.	DREXEL UNIVERSITY	NSG 6035	Thornton, D. C.	12	3359
WFC	Milliner, J. B.	ESTRN SHORE CMTY COL	NAS 6-2964	Layman, P.	99	3772
WFC	Stanley, H. R.	JOHNS HOPKINS UNIV	NAS 6-2706	Phillips, O M.	33	2306
WFC	Huang, N. E.	JOHNS HOPKINS UNIV	NAS 6-2888	Phillips, O. M	33	2307
WFC	Huang, N. E.	JOHNS HOPKINS UNIV	NAS 6-2993	Phillips, O. M.	33	2308
WFC	Krabill, W. B.	NEW MEX ST U-LAS CR	NAS 6-2885	Guard, K.	32	2887
WFC	Huang, N. E.	NO CAROLINA STATE U	NAS 6-3018	Tung, C.	33	3119
WFC	West, W. W.	OKLAHOMA STATE UNIV	NAS 6-2970	Buck, R. F.	49	3298
WFC	Carr, R. E.	OKLAHOMA STATE UNIV	NSG 6018	Roth, L. O.	49	3303
WFC	Duke, J. R.	PENN STATE U-UNIV PK	NAS 6-2726	Olivero, J.	31	3380
WFC	Schmidlin, F. J.	PENN STATE U-UNIV PK	NAS 6-2818	Clark, J. H.	31	3381
WFC	Schmidlin, F. J.	PENN STATE U-UNIV PK	NAS 6-2826	Hale, L. C.	31	3382
WFC	Ballance, C. W., Jr.	PENN STATE U-UNIV PK	NGL 39-009-032	Kendall, B. R.	13	3392
WFC	Gray, J. W.	PENN STATE U-UNIV PK	NSG 6004	Ferguson, G. A.	19	3415
WFC	Maurer, H. E.	PURDUE UNIVERSITY	NAS 6-2695	Phillips, T. L.	39	2148
WFC	Gray, J. W.	RICE UNIVERSITY	NAS 6-1667	Anderson, H. R., Jr	11	3544
WFC	Huang, N. E.	TEXAS A&M UNIVERSITY	NAS 6-2884	Ichiye, T.	35	3574
WFC	Gray, J. W.	UNIV ALASKA-FAIRBNKS	NSG 6014	Davis, T. N.	19	1065
WFC	Gray, J. W.	UNIV ALASKA-FAIRBNKS	NSG 6024	Hallinan, T. J.	19	1066
WFC	Gray, J. W.	UNIV ALASKA-FAIRBNKS	NSG 6028	Hallinan, T. J.	19	1067
WFC	Duke, J. R.	UNIV OF DAYTON	NAS 6-2456	Luers, J. K.	31	3263
WFC	Melson, W. E., Jr.	UNIV OF DAYTON	NSG 6026	Luers, J K.	41	3269
WFC	Huang, N. E.	UNIV OF DELAWARE	NAS 6-2820	Wu, J.	33	1829
WFC	Gray, J. W.	UNIV HOUSTON-HOUSTON	NSG 6008	Sheldon, W. R.	19	3626
WFC	Gray, J. W.	UNIV ILLINOIS-URBANA	NGR 14-005-181	Bowhill, S. A	19	2118
WFC	Floyd, J. C.	UNIV MD-EASTRN SHORE	NAS 6-2855	Smith, J. C.	99	2417
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NGR 21-119-003	Singh, G.	13	2418
WFC	Oberholtzer, J. D.	UNIV MD-EASTRN SHORE	NSG 6006	Wutoh, J. G.	99	2419
WFC	Parsons, C. L.	UNIV MD-EASTRN SHORE	NSG 6016	Smith, J. C.	31	2420
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NSG 6017	Lynk, W. L.	59	2421
WFC	Huang, N. E.	UNIV MD-EASTRN SHORE	NSG 6025	Dudis, J. J.	33	2422
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NSG 6033	Albino, M.	51	2423
WFC	Trafford, G. H.	UNIV MD-EASTRN SHORE	NSG 6034	Gupta, G. C.	39	2424
WFC	Frostrom, R. J., Jr.	UNIV MICH-ANN ARBOR	NAS 6-2794	Horvath, J. J.	31	2649
WFC	Ballance, C. W., Jr.	U MINN-MNPLS-ST PAUL	NSG 6005	Arnoldy, R. J.	19	2719
WFC	Gray, J. W.	U MINN-MNPLS-ST PAUL	NSG 6009	Nier, A. O.	19	2720
WFC	Gray, J. W.	U MINN-MNPLS-ST PAUL	NSG 6021	Cahill, L. J., Jr.	19	2721
WFC	Gray, J. W.	UNIV NEW HAMP-DURHAM	NSG 6022	Arnoldy, R. L.	19	2829
WFC	Gray, J. W.	UNIV OF PITTSBURGH	NSG 6011	Zipf, E. C.	19	3448
WFC	Gray, J. W.	UNIV TEXAS-DALLAS	NSG 6023	Christensen, A. B.	19	3708
WFC	Duke, J. R	UNIV OF UTAH	NAS 6-2498	Kao, S. K.	31	3726
WFC	Duke, J. R.	UNIV OF UTAH	NAS 6-2627	Staffanson, F. L.	31	3727
WFC	Huang, N. E.	UNIV OF WASHINGTON	NAS 6-2996	Katsaros, K. B	33	3925
WFC	Gray, J. W.	UTAH STATE UNIV	NSG 6027	Williamson, P. R.	19	3743
WFC	Scott, J. H., Jr.	VIRGINIA POLY INST	NAS 6-2388	Powell, N. L.	39	3873
WFC	Schmidlin, F. J.	VIRGINIA POLY INST	NGL 47-004-067	Tieleman, H. W	31	3881
WFC	Parker, L. C.	VIRGINIA POLY INST	NSG 6029	Powell, N. L.	19	3917
WFC	Parker, L. C.	VIRGINIA POLY INST	NSG 6030	Powell, N L.	19	3918
WFC	Parker, L. C.	VIRGINIA POLY INST	NSG 6031	Powell, N. L.	19	3919
HQ-BX	Weir, J. F.	UNIV OF HAWAII-MANOA	NASW 2801	Jefferies, J. T.	11	2032

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HQ-EB	Kakar, R. K.	FLORIDA STATE UNIV	NSG 7473	Hunt, R. H.	31	1919
HQ-EB	Seals, R. K., Jr.	UNIV CALIF-IRVINE	NSG 7208	Molina, M. J.	31	1498
HQ-EB	Dodge, J. C.	UNIV OF CHICAGO	NGR 14-001-008	Fujita, T. T.	31	2090
HQ-EB	Kakar, R. K.	UNIV MARYLAND-COL PK	NSG 7340	Ginter, M. L.	13	2410
HQ-EB	Seals, R. K., Jr.	U MINN-MNPLS-ST PAUL	NSG 7221	Mauersberger, K.	31	2724
HQ-EB	Kakar, R. K.	UNIV OF WYOMING	NSG 7349	Hofmann, D. J.	31	4021
HQ-EB	Kakar, R. K.	WASHINGTON ST UNIV	NSG 7214	Cronn, D.	31	3964
HQ-EB	Kakar, R. K.	OREGON GRADUATE CTR	NSG 7457	Rasmussen, R. A.	31	3317
HQ-ER	Flinn, E. A.	MASS INST OF TECH	NSG 7428	Counselman, C. C., III	32	2601
HQ-ER	Murphy, J. P.	OHIO STATE UNIV	NASW 3194	Mueller, I. I.	31	3214
HQ-ER	Murphy, J P.	OHIO STATE UNIV	NGR 36-008-204	Mueller, I. I.	32	3218
HQ-ER	Murphy, J. P.	UNIV COLORADO-BOLDR	NASW 3103	Wyss, M.	32	1753
HQ-ER	Flinn, E. A.	UNIV TEXAS-AUSTIN	NSG 7159	Dorman, J. H.	19	3678
HQ-ES	Flinn, E. A.	MASS INST OF TECH	NSG 7329	Soloman, S. C.	32	2596
HQ-ET	Vitale, J. A.	CALIF INST OF TECH	NSG 7610	Anderson, D L.	32	1231
HQ-ET	Vitale, J. A.	CORNELL UNIVERSITY	NGL 33-010-171	Liang, T.	39	2957
HQ-ET	Weinstein, R. H.	HUMBOLDT STATE UNIV	NSG 7525	Hankins, D. B.	39	1259
HQ-ET	Vitale, J. A.	LA ST U&A&M COL-BRGE	NGL 19-001-105	Whitehurst, C A.	39	2271
HQ-ET	Vitale, J. A.	MASS INST OF TECH	NSG 7331	Gatos, H. C.	47	2597
HQ-ET	Vitale, J. A.	MICHIGAN STATE UNIV	NGL 23-004-083	Boylan, M. G.	39	2625
HQ-ET	Vitale, J. A.	MISSISSIPPI STATE U	NGL 25-001-054	Miller, W. F.	39	2741
HQ-ET	Roberson, F. I.	NEW YORK UNIVERSITY	NSG 7636	Fusfeld, H. I.	99	3014
HQ-ET	Vitale, J. A.	OKLAHOMA STATE UNIV	NSG 7640	Walsh, S.	31	3304
HQ-ET	Vitale, J. A.	OREGON STATE UNIV	NGL 38-002-053	Schrumpf, B. J	39	3324
HQ-ET	Vitale, J. A.	PURDUE UNIVERSITY	NGL 15-005-186	Weismiller, R. A.	39	2156
HQ-ET	Vitale, J. A.	SO DAKOTA STATE UNIV	NGL 42-003-007	Myers, V. I.	39	3480
HQ-ET	Bivins, R. G.	SOUTHEASTN OKLA ST U	NASW 3007	Gold, C. H.	99	3305
HQ-ET	Bivins, R. G.	SOUTHEASTN OKLA ST U	NASW 3180	Oliver, R	49	3306
HQ-ET	Roberson, F. I.	STANFORD UNIVERSITY	NASW 3204	McAlister, J. F.	39	1323
HQ-ET	Dolby, W.	ST UNIV SYSTM OF FLA	NASW 3060	Unavailable	99	1921
HQ-ET	Vitale, J. A.	TEXAS A&M UNIVERSITY	NGL 44-001-001	Blanchard, B. J.	39	3591
HQ-ET	Vitale, J. A.	UNIV ALASKA-FAIRBNKS	NGL 02-001-092	Miller, J. M.	39	1063
HQ-ET	Vitale, J. A.	UNIV OF ARIZONA	NGL 03-002-313	Johnson, J. D.	39	1115
HQ-ET	Vitale, J. A.	UNIV OF ARIZONA	NSG 7333	Bier, M.	59	1145
HQ-ET	Vitale, J. A.	UNIV CALIF-BERKELEY	NGL 05-003-404	Colewell, R. N.	39	1442
HQ-ET	Vitale, J. A.	UNIV CALIF-BERKELEY	NSG 7220	Colwell, R. N.	39	1472
HQ-ET	Tuyahov, A. J.	UNIV CALIF-BERKELEY	NSG 7522	Colwell, R N.	79	1478
HQ-ET	Vitale, J. A	UNIV COLORADO-BOLDR	NGL 06-003-200	Ives, J. D	39	1756
HQ-ET	Bivins, R. G.	UNIV OF CONNECTICUT	NASW 3191	Unavailable	99	1815
HQ-ET	Ault, L. A.	UNIV OF DENVER	NASW 3113	Johnson, F. D.	99	1801
HQ-ET	Vitale, J. A.	UNIV OF FLORIDA	NSG 7236	Ruth, B. E.	39	1950
HQ-ET	Harrison, J. O.	UNIV OF GEORGIA	NASW 2948	Unavailable	99	2020
HQ-ET	Harrison, J. O.	UNIV OF GEORGIA	NASW 3247	Hale, H.	22	2021
HQ-ET	Vitale, J. A.	UNIV OF KANSAS	NGL 17-004-024	Barr, B. G.	39	2234
HQ-ET	Dolby, W.	UNIV OF KENTUCKY	NASW 3039	Unavailable	99	2260
HQ-ET	Vitale, J. A.	U MINN-MNPLS-ST PAUL	NGL 24-005-263	Shepherd, W G.	39	2708
HQ-ET	Vitale, J. A.	UNIV NEBRASKA-LINCLN	NGL 28-004-020	Carlson, M. P.	39	2797
HQ-ET	Bivins, R. G.	UNIV OF NEW MEXICO	NASW 2936	Unavailable	99	2894
HQ-ET	Vitale, J. A.	UNIV SO CAROLINA-COL	NSG 7504	Cooper, J. M.	39	3476
HQ-ET	Gilbert, R.	UNIV OF SOUTHERN CAL	NASW 3009	Unavailable	99	1692
HQ-ET	Bivins, R. G.	UNIV OF SOUTHERN CAL	NASW 3235	Mixer, R.	99	1693
HQ-ET	Vitale, J. A.	UNIV OF UTAH	NSG 7226	Ridd, M. K.	39	3732
HQ-ET	Vitale, J. A.	UNIV OF VERMONT	NSG 7453	John, H. H.	32	3753
HQ-ET	Vitale, J. A.	UNIV WISC-MADISON	NGL 50-002-127	Clapp, J. L.	39	3991
HQ-KT	Bivins, R. G.	UNIV OF PITTSBURGH	NASW 3042	Unavailable	99	3434
HQ-LF	Rich, W. B.	CAL STATE U-CHICO	NASW 2835	Unavailable	99	1239
HQ-LU	Pohly, J. G.	BOWIE STATE COLLEGE	NGT 21-027-012	Kirksey, C. H.	99	2298
HQ-LU	Carter, C. H.	CALIF INST OF TECH	NGT 05-003-790	Albee, A. L	49	1203

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HQ-LU	Pohly, J. G.	CAL STATE U-L ANGLES	NASW 3257	Manvi, R.	46	1245
HQ-LU	Pohly, J. G.	CAL STATE U-L ANGLES	NSG 7229	Maniv, R.	46	1247
HQ-LU	Pohly, J. G.	CAL STATE U-L ANGLES	NSG 7263	Gold, P. I.	46	1248
HQ-LU	Pohly, J. G.	CARNEGIE-MELLON UNIV	NGT 39-087-790	Cathie, W.	49	3342
HQ-LU	Carter, C. H.	CASE WESTERN RESERVE	NGT 36-027-011	Prahe, J. M.	49	3152
HQ-LU	Pohly, J. G.	CASE WESTERN RESERVE	NGT 36-027-790	Chenelle, D. W.	49	3153
HQ-LU	Pohly, J. G.	CLARK COLLEGE	NSG 7267	Sinha, O. P.	13	1970
HQ-LU	Pohly, J. G.	CLEVELAND STATE UNIV	NGT 36-025-780	Bennett, W. R.	49	3191
HQ-LU	Pohly, J. G.	FLORIDA A&M UNIV	NSG 901	Jones, H. J.	13	1909
HQ-LU	Pohly, J. G.	HOWARD UNIVERSITY	NGL 09-011-046	Ferguson, G. A.	39	1883
HQ-LU	Carter, C. H.	HOWARD UNIVERSITY	NGT 09-011-060	Fan, D. N.	99	1885
HQ-LU	Pohly, J. G.	MOREHOUSE COLLEGE	NGT 11-008-004	Hall, J. H.	99	2012
HQ-LU	Pohly, J. G.	MOREHOUSE COLLEGE	NSG 7652	Hall, J. H.	12	2013
HQ-LU	Pohly, J. G.	MORGAN STATE UNIV	NGT 21-025-006	Proctor, N. K.	19	2332
HQ-LU	Pohly, J. G.	NM HIGHLANDS UNIV	NGT 32-010-001	Zenick, H.	99	2881
HQ-LU	Pohly, J. G.	NORTHWESTERN UNIV	NGT 14-007-780	Ingersoll, D.	49	2067
HQ-LU	Nicogossian, A. E.	OHIO STATE UNIV	NGT 36-008-007	Keller, M. D.	56	3219
HQ-LU	Pohly, J. G.	OHIO STATE UNIV	NGT 36-008-780	Stranges, J.	49	3220
HQ-LU	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-028	McRee, G. J.	49	3794
HQ-LU	Carter, C. H.	OLD DOMINION UNIV	NGT 47-003-029	Goglia, G. L.	49	3795
HQ-LU	Pohly, J. G.	PURDUE UNIVERSITY	NGT 15-005-790	Holec, D. E.	49	2157
HQ-LU	Pohly, J. G.	SPELMAN COLLEGE	NGT 11-013-001	Falconer, E.	99	2019
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-409	Adams, J. L.	49	1367
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-412	Bershader, D.	49	1368
HQ-LU	Carter, C. H.	STANFORD UNIVERSITY	NGT 05-020-777	Beard, R. R.	59	1369
HQ-LU	Pohly, J. G.	TENNESSEE STATE UNIV	NGT 43-014-750	Malkani, M. J.	49	3488
HQ-LU	Pohly, J. G.	TENNESSEE STATE UNIV	NGT 43-014-790	Malkani, M. J.	49	3489
HQ-LU	Pohly, J. G.	TUSKEGEE INSTITUTE	NGT 01-005-750	Dybczak, Z. W.	49	1031
HQ-LU	Pohly, J. G.	TUSKEGEE INSTITUTE	NGT 01-005-780	Dybczak, Z. W.	49	1032
HQ-LU	Carter, C. H.	UNIV ALA-HUNTSVILLE	NGT 01-008-021	Karr, G. R.	49	1057
HQ-LU	Carter, C. H.	UNIV ALA-UNIVERSITY	NGT 01-002-099	Barfield, B. F.	49	1061
HQ-LU	Carter, C. H.	UNIV HOUSTON-HOUSTON	NGT 44-005-114	Huang, C. J.	49	3621
HQ-LU	Carter, C. H.	UNIV HOUSTON-HOUSTON	NGT 44-005-115	Huang, C. J.	49	3622
HQ-LU	Carter, C. H.	UNIV MARYLAND-COL PK	NGT 21-002-254	Emad, F. P.	49	2379
HQ-LU	Pohly, J. G.	UNIV OF NEW MEXICO	NGT 32-004-770	Etter, D. M	49	2901
HQ-LU	Pohly, J. G.	UNIV OKLAHOMA-NORMAN	NGT 37-003-760	Thomas, G.	49	3313
HQ-LU	Carter, C. H.	UNIV OF SANTA CLARA	NGT 05-017-998	Healy, T. J.	49	1685
HQ-LU	Pohly, J. G.	UNIV OF UTAH	NSG 7516	Guillory, W. A.	12	3734
HQ-ML	Mahon, J. B.	PENN STATE U-UNIV PK	NASW 3256	Unavailable	42	3386
HQ-MT	Puttkamer, J.	GEORGETOWN UNIV	NASW 3152	Cheston, P. S.	99	1874
HQ-RE	Gevarter, W. B.	RENSSELAER POLY-NY	NSG 7184	Shen, C. N.	19	3044
HQ-RE	Gevarter, W. B.	RENSSELAER POLY-NY	NSG 7369	Yerazunis, S. W.	49	3046
HQ-RE	Pontious, C. E.	STANFORD UNIVERSITY	NASW 2916	McCarthy, J.	45	1322
HQ-RE	Fitzmaurice, M. W.	STANFORD UNIVERSITY	NGL 05-020-103	Harris, S. E.	45	1348
HQ-RE	Gevarter, W. B.	UNIV MARYLAND-COL PK	NGR 21-002-270	Minker, J.	21	2371
HQ-RP	Henry, W.	CALIF INST OF TECH	NSG 7458	Ahrens, T. J.	13	1227
HQ-RP	Povinelli, F. P.	IMPERIAL C SCI & TEC	NASW 3258	Whitelow, J.	41	4028
HQ-RP	Lazar, J.	PRINCETON UNIVERSITY	NGL 31-001-005	Jahn, R. G.	42	2844
HQ-RR	Lundholm, J. G., Jr.	DREXEL UNIVERSITY	NSG 7491	Rosen, G. H.	13	3360
HQ-RR	Thom, K.	UNIV OF FLORIDA	NGL 10-005-089	Schneider, R. T.	13	1938
HQ-RR	Thom, K.	UNIV OF FLORIDA	NSG 7299	Schneider, R. T.	13	1951
HQ-RS	Lundholm, J. G., Jr.	CORNELL UNIVERSITY	NSG 7487	Ashcroft, N. W.	13	2987
HQ-RS	Lundholm, J. G., Jr.	CORNELL UNIVERSITY	NSG 7488	Ruoff, A. L.	47	2988
HQ-RS	Lundholm, J. G., Jr.	UNIV MARYLAND-COL PK	NSG 7496	Spain, I. L.	13	2415
HQ-RS	Lundholm, J. G., Jr.	U MINN-MNPLS-ST PAUL	NSG 7296	Scriven, L. E.	13	2726
HQ-RT	Schwenk, F. C.	CALIF INST OF TECH	NSG 7275	Vaughan, R.	13	1221
HQ-RT	Schwenk, F. C.	CALIF INST OF TECH	NSG 7508	Liepmann, H. W.	13	1229
HQ-RT	Schwenk, F. C.	COLORADO STATE UNIV	NGR 06-002-159	Etters, R. D.	13	1720

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-RT	Whiting, E. E.	HOWARD UNIVERSITY	NSG 7624	Choudhury, A. K.	45	1897
HQ-RT	Schwenk, F. C.	MASS INST OF TECH	NSG 7396	Mar, J. W.	42	2600
HQ-RT	Gevarter, W. B.	RENSSELAER POLY-NY	NASW 3279	Yerazunis, S. W.	31	3033
HQ-RT	McKenzie, R. L.	RICE UNIVERSITY	NSG 7490	Swain, P. H.	13	3564
HQ-RT	Schwenk, F. C.	STANFORD UNIVERSITY	NSG 7619	Harris, S. E.	13	1409
HQ-RT	Randolph, L. P.	STATE UNIV NY-ALBANY	NSG 7501	Ratcliff, K. F.	42	3060
HQ-RT	Whiting, E. E.	UNIV CALIF-IRVINE	NSG 7472	Wallis, R. F.	13	1500
HQ-RT	Randolph, L. P.	UNIV ILLINOIS-CHICGO	NSG 7247	Barcilon, V.	21	2111
HQ-RT	Schwenk, F. C.	UNIV OF IOWA	NSG 7471	Stwalley, W. C.	13	2219
HQ-RT	Whiting, E. E.	UNIV MARYLAND-COL PK	NSG 7196	Weber, J.	13	2405
HQ-RT	Whiting, E. E.	UNIV MARYLAND-COL PK	NSG 7253	Reiger, C. J.	22	2407
HQ-RT	Randolph, L. P.	UNIV OF UTAH	NASW 2967	Vali, V.	13	3728
HQ-RT	Schwenk, F. C.	UNIV OF WASHINGTON	NGL 48-002-044	Hertzberg, A.	13	3931
HQ-RW	Gilstad, D. A.	RENSSELAER POLY-NY	NGL 33-018-003	Wiberly, S. E.	47	3034
HQ-RW	Gangler, J. J.	UNIV OF WASHINGTON	NGL 48-002-004	Mueller, J. I.	47	3930
HQ-RX	Rollins, R. H.	UNIV OF VIRGINIA	NSG 7266	Kuhlthau, A. R.	72	3864
HQ-SB	Young, R. S.	ARIZONA STATE UNIV	NSG 7255	Cronin, J. R.	32	1082
HQ-SB	Larson, C. A.	BOSTON UNIVERSITY	NGR 22-004-018	Fulton, G. P.	59	2430
HQ-SB	Young, R. S.	BOSTON UNIVERSITY	NGR 22-004-025	Margulis, L.	32	2431
HQ-SB	Young, R. S.	BOSTON UNIVERSITY	NSG 7588	Golubic, S.	54	2437
HQ-SB	Young, R. S.	CALIF INST OF TECH	NGR 05-002-121	Horowitz, N. H.	51	1196
HQ-SB	Winter, D. L.	CALIF INST OF TECH	NSG 7387	Strumwasser, F.	51	1225
HQ-SB	Young, R. S.	CORNELL UNIVERSITY	NGR 33-010-101	Sagan, C. E.	12	2960
HQ-SB	Young, R. S.	CORNELL UNIVERSITY	NSG 7235	MacDonald, R E.	51	2982
HQ-SB	Young, R. S.	CORNELL UNIVERSITY	NSG 7529	Gibson, J.	51	2990
HQ-SB	Larson, C. A.	DREXEL UNIVERSITY	NSG 7494	Dubin, S.	59	3361
HQ-SB	Young, R. S.	FLORIDA STATE UNIV	NSG 7337	Friedmann, E. I.	54	1918
HQ-SB	Halstead, T. W.	GEORGE WASHINGTON U	NASW 3165	Waters, E.	59	1846
HQ-SB	Young, R. S.	GEORGIA INST OF TECH	NSG 7069	Hubbard, J. S.	51	2010
HQ-SB	Young, R. S.	HARDIN-SIMMONS UNIV	NGR 44-095-001	Foster, T. L.	51	3536
HQ-SB	Young, R. S.	HARVARD UNIVERSITY	NGL 22-007-069	Barghoorn, E S.	32	2453
HQ-SB	Young, R. S.	INDIANA U-BLOOMINGTN	NGR 15-003-118	Hayes, J M.	32	2138
HQ-SB	Young, R. S.	INDIANA U-BLOOMINGTN	NSG 7389	Ripley, E. M.	32	2139
HQ-SB	Young, R. S.	INDIANA U-BLOOMINGTN	NSG 7520	Ripley, E. M.	32	2140
HQ-SB	Young, R S.	MASS INST OF TECH	NGR 22-009-005	Biemann, K	51	2528
HQ-SB	Young, R. S.	MASS INST OF TECH	NGR 22-009-277	Rich, A.	12	2529
HQ-SB	Halstead, T. W.	OHIO UNIVERSITY	NSG 7352	Jaffe, M. J.	51	3243
HQ-SB	Young, R. S.	PENN STATE U-UNIV PK	NGR 39-009-180	Casida, L. E., Jr	51	3394
HQ-SB	Young, R. S.	PENN STATE U-UNIV PK	NSG 7515	Wedler, F. C	12	3420
HQ-SB	Young, R. S.	POLY INST OF NY	NGR 33-006-070	Eirich, F. R.	12	3017
HQ-SB	Halstead, T. W.	PRINCETON UNIVERSITY	NSG 7280	Jacobs, W. P	51	2865
HQ-SB	Halstead, T. W.	PURDUE UNIVERSITY	NSG 7278	Mitchell, C. A.	51	2174
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NGR 33-018-148	Ferris, J. P.	12	3036
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NSG 7065	Wedler, F. C	51	3043
HQ-SB	Young, R. S.	RENSSELAER POLY-NY	NSG 7345	Pope, D. H.	51	3045
HQ-SB	Halstead, T. W.	RICE UNIVERSITY	NASW 3164	Ward, C. H.	51	3551
HQ-SB	Young, R. S.	SAN FRAN STATE UNIV	NSG 7512	Orenberg, J. B.	51	1268
HQ-SB	Young, R. S.	SO ILL UNIV-CARBONDL	NSG 7394	Yopp, J. H.	51	2073
HQ-SB	Young, R. S.	STANFORD UNIVERSITY	NGL 05-020-582	Bonner, W. A.	59	1353
HQ-SB	Young, R. S.	STANFORD UNIVERSITY	NGR 05-020-004	Lederberg, J.	51	1355
HQ-SB	Halstead, T. W.	STATE U NY-STONY BRK	NSG 7270	Krikorian, A. D.	51	3084
HQ-SB	Young, R. S.	TEXAS A&M UNIVERSITY	NSG 7037	Fendler, J. H.	12	3603
HQ-SB	Halstead, T. W.	TEXAS TECH UNIV	NSG 7435	Hartman, H. B.	32	3609
HQ-SB	Young, R. S.	UNIV ALA-BIRMINGHAM	NGR 01-010-001	Lacey, J. C., Jr	12	1039
HQ-SB	Young, R. S.	UNIV OF ARIZONA	NGR 03-002-171	Nagy, B.	32	1117
HQ-SB	Young, R. S.	UNIV CALIF-BERKELEY	NGL 05-003-003	Calvin, M.	32	1438
HQ-SB	Young, R S.	UNIV CALIF-BERKELEY	NGR 05-003-460	Jukes, J. H.	12	1450
HQ-SB	Geib, D. S.	UNIV CALIF-BERKELEY	NSG 7262	Pace, N	51	1473

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SB	Halstead, T. W.	UNIV CALIF-BERKELEY	NSG 7336	Pace, N.	51	1475
HQ-SB	Halstead, T. W.	UNIV CALIF-DAVIS	NSG 7493	Smith, A. H.	51	1495
HQ-SB	Young, R. S.	UNIV CALIF-L ANGELES	NGR 05-007-221	Kaplan, I. R.	32	1519
HQ-SB	Young, R. S	UNIV CALIF-L ANGELES	NGR 05-007-407	Anderson, R. N.	32	1526
HQ-SB	Young, R. S.	UNIV CALIF-L ANGELES	NSG 7489	Schopf, J. W.	32	1560
HQ-SB	Young, R. S.	UNIV CALIF-SAN FRAN	NSG 7151	Stoeckenius, W.	51	1639
HQ-SB	Larson, C. A.	UNIV OF CHICAGO	NSG 7303	Moran, H. F.	51	2103
HQ-SB	Young, R. S.	UNIV OF CONNECTICUT	NSG 7450	Leadbetter, E. R.	51	1819
HQ-SB	Young, R. S.	UNIV OF HAWAII-MANOA	NGL 12-001-042	Siegel, S. M.	51	2035
HQ-SB	Young, R. S.	UNIV OF HAWAII-MANOA	NGR 12-001-109	Folsome, C. E.	12	2038
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NGR 44-005-002	Oro, J.	32	3619
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NGR 44-005-091	Becker, R. S.	12	3620
HQ-SB	Halstead, T. W.	UNIV HOUSTON-HOUSTON	NSG 7300	Hendrix, D. H.	51	3628
HQ-SB	Young, R. S.	UNIV HOUSTON-HOUSTON	NSG 7440	Fox, G. E.	51	3630
HQ-SB	Halstead, T. W.	UNIV HOUSTON-HOUSTON	NSG 9042	Coules, J. R.	51	3634
HQ-SB	Young, R. S.	UNIV ILLINOIS-URBANA	NSG 7044	Woese, C. R	12	2133
HQ-SB	Halstead, T. W.	UNIV OF LOUISVILLE	NSG 7441	Fuller, P M.	51	2268
HQ-SB	Young, R. S.	UNIV MARYLAND-COL PK	NGR 21-002-317	Ponnamperuma, C. A.	12	2374
HQ-SB	Young, R. S.	UNIV MARYLAND-COL PK	NSG 7469	Ponnamperuma, C	12	2413
HQ-SB	Young, R. S.	UNIV MD-EASTRN SHORE	NSG 7470	Joshi, J. M.	55	2425
HQ-SB	Young, R. S.	UNIV OF MASS-AMHERST	NSG 7397	Huguenin, R. L.	12	2616
HQ-SB	Young, R. S.	UNIV OF MIAMI	NGR 10-007-008	Fox, S. W.	12	1959
HQ-SB	Young, R. S.	UNIV MICH-ANN ARBOR	NSG 7308	Kuhn, W. R.	31	2687
HQ-SB	Young, R. S.	UNIV MICH-ANN ARBOR	NSG 7452	Rich, A.	51	2689
HQ-SB	Halstead, T. W.	UNIV MICH-ANN ARBOR	NSG 9047	Ross, M. D.	51	2693
HQ-SB	Halstead, T. W.	UNIV OF PENNSYLVANIA	NGR 39-010-149	Brown, A. H.	51	3429
HQ-SB	Young, R. S.	UNIV SO CAROLINA-COL	NSG 7096	Rohlfing, D. L.	51	3475
HQ-SB	Young, R. S.	UNIV OF SOUTHERN CAL	NSG 7367	Strehler, B. L.	51	1705
HQ-SB	Halstead, T. W.	UNIV TEXAS-AUSTIN	NSG 7480	Roux, S. J.	51	3687
HQ-SB	Geib, D. S.	UNIV OF TOLEDO	NSG 7424	Diehn, B.	51	3287
HQ-SB	Young, R. S.	UNIV WISC-MADISON	NSG 7521	Fitch, W. M	51	4009
HQ-SB	Young, R. S.	UTAH STATE UNIV	NSG 7038	Smith, G. G.	32	3744
HQ-SB	Halstead, T. W.	UTAH STATE UNIV	NSG 7567	Salisbury, F. B.	51	3749
HQ-SB	Young, R. S.	WORCESTER POLY INST	NSG 7154	Danielli, J F.	51	2623
HQ-SB	Young, R. S.	WORCESTER POLY INST	NSG 7392	Plumb, R. C	12	2624
HQ-SB	Nicogossian, A. E.	WRIGHT STATE UNIV	NGT 36-024-790	Mohler, S. R	59	3293
HQ-SB	Halstead, T. W.	YALE UNIVERSITY	NSG 7290	Galston, A. W.	51	1828
HQ-SC	Roman, N. G.	BOWLING GRN STATE U	NSG 7022	Ptak, R. L	11	3139
HQ-SC	Roman, N. G.	CALIF INST OF TECH	NGL 05-002-134	Oke, J. B.	11	1189
HQ-SC	Boggess, N. W.	CALIF INST OF TECH	NGL 05-002-207	Neugebauer, G.	11	1193
HQ-SC	Kaluzienski, L. J.	CALIF INST OF TECH	NGR 05-002-160	Vogt, R. E.	11	1197
HQ-SC	Roman, N. G.	CALIF INST OF TECH	NGR 05-002-256	Thorne, K. S.	11	1198
HQ-SC	Roman, N. G.	CALIF INST OF TECH	NSG 7495	Mashhoon, B.	11	1228
HQ-SC	Boggess, N. W.	COLUMBIA UNIVERSITY	NSG 7105	Flynn, G. W.	11	2944
HQ-SC	Sofia, S.	COLUMBIA UNIVERSITY	NSG 7248	Weisskopf, M. C.	11	2947
HQ-SC	Boggess, N. W.	CORNELL UNIVERSITY	NSG 7324	Houck, J. R.	11	2984
HQ-SC	Boggess, N. W.	HARVARD UNIVERSITY	NGR 22-007-270	Fazio, G. G.	11	2458
HQ-SC	Kaluzienski, L. J.	HARVARD UNIVERSITY	NGR 22-007-272	Cameron, A. G.	11	2459
HQ-SC	Roman, N. G.	HARVARD UNIVERSITY	NSG 7304	Parkinson, W. H.	31	2477
HQ-SC	Kaluzienski, L. J.	JOHNS HOPKINS UNIV	NSG 7449	Davidsen, A. F.	11	2327
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NGR 22-009-526	Weiss, R.	11	2531
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NSG 7186	Kleinman, S. G.	11	2593
HQ-SC	Boggess, N. W.	MASS INST OF TECH	NSG 7328	Weiss, R.	11	2595
HQ-SC	Opp, A. G.	MASS INST OF TECH	NSG 7339	Lewin, W. H.	11	2599
HQ-SC	Roman, N. G.	MONTANA STATE UNIV	NGR 27-001-040	Nordtvedt, K., Jr.	11	2794
HQ-SC	Roman, N. G.	NEW YORK UNIVERSITY	NGR 33-016-196	Glassgold, A. E.	13	3001
HQ-SC	Roman, N. G.	NORTHWESTERN UNIV	NGL 14-007-041	Huang, S. S.	11	2066
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NGL 31-001-007	Spitzer, L., Jr.	11	2845

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HQ-SC	Boggess, N. W.	PRINCETON UNIVERSITY	NGR 31-001-202	Dicke, R. H.	13	2847
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NSG 7256	Bahcall, N. A.	11	2864
HQ-SC	Boggess, N. W.	PRINCETON UNIVERSITY	NSG 7302	Wilkinson, D. T.	11	2867
HQ-SC	Rosendhal, J. D.	PRINCETON UNIVERSITY	NSG 7379	Schwarzschild, M.	11	2868
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NSG 7600	Spitzer, L., Jr.	11	2870
HQ-SC	Roman, N. G.	PRINCETON UNIVERSITY	NSG 7618	Jenkins, E. B.	11	2872
HQ-SC	Rosendhal, J. D.	PURDUE UNIVERSITY	NSG 7167	Moffett, T. J.	11	2173
HQ-SC	Kaluzienski, L. J.	STANFORD UNIVERSITY	NGR 05-020-452	Hofstadter, R.	11	1357
HQ-SC	Kaluzienski, L. J.	STANFORD UNIVERSITY	NGR 05-020-668	Sturrock, P. A.	11	1364
HQ-SC	Roman, N. G.	STANFORD UNIVERSITY	NSG 7204	Will, C. M.	11	1403
HQ-SC	Kaluzienski, L. J.	STANFORD UNIVERSITY	NSG 7476	Walker, A. B., Jr.	11	1405
HQ-SC	Weiler, E. J.	STATE UNIV NY-ALBANY	NSG 7241	Weinberg, J. L.	11	3059
HQ-SC	Fishman, G. J.	STATE U NY-STONY BRK	NGR 33-015-180	Forman, M. A.	11	3076
HQ-SC	Boggess, N. W.	UNIV OF ARIZONA	NGR 03-002-269	Low, F. J.	11	1119
HQ-SC	Boggess, N. W.	UNIV OF ARIZONA	NGR 03-002-371	Hoffman, W. F.	11	1122
HQ-SC	Opp, A. G.	UNIV OF ARIZONA	NSG 7101	Jokipii, J. R.	11	1139
HQ-SC	Roman, N. G.	UNIV OF ARIZONA	NSG 7358	Gehrels, A. M.	11	1146
HQ-SC	Boggess, N. W.	UNIV OF ARIZONA	NSG 7368	Craine, E. R.	11	1147
HQ-SC	Weiler, E. J.	UNIV OF ARIZONA	NSG 7574	Tapia, S. F.	11	1156
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NGL 05-003-272	Townes, C. H.	11	1440
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-BERKELEY	NGR 05-003-376	Price, P. B.	11	1446
HQ-SC	Opp, A. G.	UNIV CALIF-BERKELEY	NGR 05-003-513	Heckman, H. H.	11	1453
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-BERKELEY	NGR 05-003-553	Buffington, A.	11	1454
HQ-SC	Weiler, E. J.	UNIV CALIF-BERKELEY	NGR 05-003-578	Silk, J. I.	11	1455
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NSG 7205	Richards, P. L.	11	1471
HQ-SC	Boggess, N. W.	UNIV CALIF-BERKELEY	NSG 7455	Smoot, G.	11	1477
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-BERKELEY	NSG 7592	Anderson, K. A.	11	1480
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-L ANGELES	NSG 7341	Kennel, C. F.	11	1557
HQ-SC	Weiler, E. J.	UNIV CALIF-L ANGELES	NSG 7621	Jura, M. A.	11	1566
HQ-SC	Kaluzienski, L. J.	UNIV CALIF RIVERSIDE	NGR 05-008-022	White, R. S.	11	1567
HQ-SC	Aucremanne, M. J.	UNIV CALIF-SAN DIEGO	NASW 2996	McIlwain, C. E.	31	1582
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-SAN DIEGO	NGL 05-005-003	Peterson, L. E.	13	1583
HQ-SC	Opp, A. G.	UNIV CALIF-SAN DIEGO	NGL 05-005-004	Gould, R. J.	11	1584
HQ-SC	Rosendhal, J. D.	UNIV CALIF-SAN DIEGO	NGR 05-009-188	McIlwain, C. E.	11	1595
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-SAN DIEGO	NSG 7294	Rothschild, R E.	11	1616
HQ-SC	Burbidge, E.	UNIV CALIF-SAN DIEGO	NSG 7377	Burbidge, M.	11	1617
HQ-SC	Kaluzienski, L. J.	UNIV CALIF-SAN DIEGO	NSG 7541	Lingenfelter, R. E.	11	1620
HQ-SC	Boggess, N. W.	UNIV CALIF-S CRUZ	NGR 05-061-015	Rank, D. M.	11	1660
HQ-SC	Roman, N. G.	UNIV CALIF-S CRUZ	NSG 7503	Miller, J. S.	11	1662
HQ-SC	Kaluzienski, L. J.	UNIV OF CHICAGO	NGL 14-001-001	Parker, E. N.	11	2082
HQ-SC	Opp, A. G.	UNIV OF CHICAGO	NGL 14-001-005	Meyer, P.	11	2083
HQ-SC	Rosendhal, J. D.	UNIV OF CHICAGO	NGR 14-001-147	Hobbs, L. M.	11	2092
HQ-SC	Kaluzienski, L. J.	UNIV OF CHICAGO	NSG 7464	Muller, D.	31	2105
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NGR 06-003-179	Lillie, C. F.	11	1759
HQ-SC	Kaluzienski, L. J.	UNIV COLORADO-BOLDR	NSG 7128	McCray, R.	11	1775
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7430	Conti, P. S.	11	1783
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7459	Timothy, J. G.	13	1784
HQ-SC	Rosendhal, J. D.	UNIV COLORADO-BOLDR	NSG 7460	Thomas, R.	13	1785
HQ-SC	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7477	Snow, T. P., Jr.	11	1786
HQ-SC	Weiler, E. J.	UNIV COLORADO-BOLDR	NSG 7626	Snow, T. P., Jr.	11	1791
HQ-SC	Roman, N. G.	UNIV OF FLORIDA	NSG 7143	Carr, T. D.	11	1949
HQ-SC	Opp, A. G.	UNIV ILLINOIS-URBANA	NSG 7598	Pines, D.	11	2135
HQ-SC	Roman, N. G.	UNIV MARYLAND-BALT	NGR 21-002-010	Misner, C. W.	11	2335
HQ-SC	Kaluzienski, L. J.	UNIV MARYLAND-COL PK	NGR 21-002-066	Earl, J. A.	11	2366
HQ-SC	Roman, N. G.	UNIV MARYLAND-COL PK	NGR 21-002-073	Griem, H. R.	11	2367
HQ-SC	Kaluzienski, L. J.	UNIV MARYLAND-COL PK	NGR 21-002-224	Gloeckler, G.	11	2370
HQ-SC	Opp, A. G.	UNIV MARYLAND-COL PK	NSG 7252	Rose, W. K.	11	2406
HQ-SC	Rosendhal, J. D.	UNIV MARYLAND-COL PK	NSG 7284	Currie, D. G.	11	2408

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SC	Kaluzienski, L. J.	UNIV MARYLAND-COL PK	NSG 7555	Scott, J. S.	11	2416
HQ-SC	Rosendhal, J. D.	UNIV MICH-ANN ARBOR	NGR 23-005-464	Hiltner, W. A.	11	2662
HQ-SC	Weiler, E. J.	UNIV MICH-ANN ARBOR	NSG 7608	Hegyi, D. J.	11	2692
HQ-SC	Kaluzienski, L. J.	U MINN-MNPLS-ST PAUL	NGR 24-005-050	Waddington, C. J.	11	2709
HQ-SC	Boggess, N. W.	U MINN-MNPLS-ST PAUL	NSG 2014	Ney, E.	11	2712
HQ-SC	Kaluzienski, L. J.	UNIV NEW HAMP-DURHAM	NGL 30-002-021	Chupp, E. L.	11	2826
HQ-SC	Fishman, G. J.	UNIV NEW HAMP-DURHAM	NGR 30-002-052	Webber, W. R.	11	2827
HQ-SC	Kaluzienski, L. J.	UNIV NEW HAMP-DURHAM	NSG 7481	Lockwood, J. A.	11	2831
HQ-SC	Roman, N. G.	UNIV OREGON-EUGENE	NSG 7639	Zimmerman, R. L.	11	3335
HQ-SC	Roman, N. G.	UNIV TEXAS-AUSTIN	NSG 7232	Shield, G. A.	11	3680
HQ-SC	Rosendhal, J. D.	UNIV TEXAS-AUSTIN	NSG 7347	Bengtson, R. D.	11	3682
HQ-SC	Roman, N. G.	UNIV TEXAS-AUSTIN	NSG 7371	Henize, K. G.	11	3684
HQ-SC	Boggess, N. W.	UNIV TEXAS-AUSTIN	NSG 7381	Evans, N. J., II	11	3685
HQ-SC	Rosendhal, J. D.	UNIV OF TOLEDO	NSG 7041	Witt, A. N.	11	3284
HQ-SC	Roman, N. G.	UNIV OF TOLEDO	NSG 7138	Molnar, M. R.	11	3285
HQ-SC	Rosendhal, J. D.	UNIV OF TOLEDO	NSG 7431	Witt, A. N.	11	3288
HQ-SC	Roman, N. G.	UNIV OF TOLEDO	NSG 7475	Molnar, M. R.	11	3289
HQ-SC	Weiler, E. J.	UNIV OF TOLEDO	NSG 7620	Witt, A. N.	11	3290
HQ-SC	Roman, N. G.	UNIV OF VIRGINIA	NGL 47-005-066	Frederick, L. W.	11	3850
HQ-SC	Kaluzienski, L. J.	UNIV OF WASHINGTON	NSG 7318	Lord, J. J.	11	3955
HQ-SC	Weiler, E. J.	UNIV WISC-MADISON	NSG 7050	Williamson, P. R.	11	4007
HQ-SC	Roman, N. G.	VANDERBILT UNIVERSTY	NSG 7343	Weedman, D. W.	11	3523
HQ-SC	Roman, N. G.	VANDERBILT UNIVERSTY	NSG 7463	Hall, D.	11	3524
HQ-SC	Roman, N. G.	VANDERBILT UNIVERSTY	NSG 7543	Hall, D.	11	3525
HQ-SC	Kaluzienski, L. J.	WASHINGTON UNIVERSTY	NGR 26-008-001	Israel, M. H.	11	2782
HQ-SC	Weiler, E. J.	WASHINGTON UNIVERSTY	NSG 7372	Smith, W. H.	11	2789
HQ-SL	French, B. M.	ARIZONA STATE UNIV	NGL 03-001-001	Moore, C. B.	32	1078
HQ-SL	French, B M	ARIZONA STATE UNIV	NSG 7040	Larimer, J. W.	32	1081
HQ-SL	Dwornik, S. E.	ARIZONA STATE UNIV	NSG 7415	Greeley, R.	32	1083
HQ-SL	Quaide, W. L.	ARIZONA STATE UNIV	NSG 7429	Greeley, R.	32	1084
HQ-SL	Dwornik, S. E.	ARIZONA STATE UNIV	NSG 7548	Greeley, R.	31	1085
HQ-SL	Dwornik, S. E.	ARIZONA STATE UNIV	NSG 7630	Rankin, R. L.	32	1086
HQ-SL	Dwornik, S. E.	ARIZONA STATE UNIV	NSG 7642	Sheridan, M.	32	1087
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NASW 3285	Mutch, T. A.	32	3453
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NGR 40-002-088	Head, J. W.	32	3454
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NGR 40-002-116	Head, J. W.	32	3455
HQ-SL	Dwornik, S. E.	BROWN UNIVERSITY	NSG 7569	Mutch, T. A.	32	3459
HQ-SL	Dwornik, S. E	BROWN UNIVERSITY	NSG 7570	Head, J. W.	32	3460
HQ-SL	Quaide, W. L.	BROWN UNIVERSITY	NSG 7589	Rutherford, M. J.	32	3461
HQ-SL	Quaide, W. L.	BROWN UNIVERSITY	NSG 7605	Parmentier, E. M.	32	3462
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-003	Muhleman, D. O.	11	1185
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NGL 05-002-069	Anderson, D. L.	32	1187
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NGL 05-002-105	Ahrens, T. J.	32	1188
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGL 05-002-140	Goldreich, P.	11	1190
HQ-SL	Brunk, W. E.	CALIF INST OF TECH	NGR 05-002-114	Muhleman, D. O.	11	1195
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NGR 05-002-303	Shoemaker, E. M.	32	1201
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7129	Ahrens, T. J.	32	1219
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7202	Burnett, D. S.	32	1220
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7316	Melosh, H. J.	32	1222
HQ-SL	Mitz, M. A.	CALIF INST OF TECH	NSG 7376	Yung, Y. L.	31	1224
HQ-SL	Dwornik, S. E.	CALIF INST OF TECH	NSG 7442	Albee, A. L.	32	1226
HQ-SL	Quaide, W. L.	CALIF INST OF TECH	NSG 7565	Muhleman, D. O.	32	1230
HQ-SL	French, B. M.	CAL STATE U-FULLERTN	NSG 7314	Woolum, D. S.	32	1242
HQ-SL	Murphy, R. E.	CAL STATE U-FULLERTN	NSG 7614	Ryan, J. A.	31	1243
HQ-SL	French, B. M.	CARNEGIE-MELLON UNIV	NSG 7585	Kohman, T. P.	32	3345
HQ-SL	Quaide, W. L.	COLUMBIA UNIVERSITY	NSG 7194	Keihm, S. J.	32	2945
HQ-SL	French, B. M.	COLUMBIA UNIVERSITY	NSG 7200	Onions, R. K.	32	2946
HQ-SL	Quaide, W. L.	COLUMBIA UNIVERSITY	NSG 7434	Takahashi, T.	32	2948

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HQ-SL	French, B. E.	COLUMBIA UNIVERSITY	NSG 7466	Onions, R. K.	32	2949
HQ-SL	Murphy, R. E.	CORNELL UNIVERSITY	NGL 33-010-082	Sagan, C. E.	31	2956
HQ-SL	Murphy, R. E.	CORNELL UNIVERSITY	NGL 33-010-186	Gierasch, P. J.	31	2958
HQ-SL	Quaide, W. L.	CORNELL UNIVERSITY	NGR 33-010-108	Turcotte, D. L.	32	2961
HQ-SL	Dwornik, S. E.	CORNELL UNIVERSITY	NGR 33-010-220	Sagan, C. E.	32	2967
HQ-SL	Brunk, W. E.	CORNELL UNIVERSITY	NSG 7126	Veverka, J.	11	2980
HQ-SL	Boyce, J. M.	CORNELL UNIVERSITY	NSG 7156	Veverka, J.	32	2981
HQ-SL	Kochendorfer, F. D.	CORNELL UNIVERSITY	NSG 7268	Harwit, M. O.	32	2983
HQ-SL	Goldstein, B. E.	CORNELL UNIVERSITY	NSG 7348	Gold, T.	32	2985
HQ-SL	Quaide, W. E.	CORNELL UNIVERSITY	NSG 7445	Burns, J. A.	31	2986
HQ-SL	Boyce, J. M.	CORNELL UNIVERSITY	NSG 7498	Veverka, J.	32	2989
HQ-SL	Boyce, J. M.	CORNELL UNIVERSITY	NSG 7546	Veverka, J.	32	2991
HQ-SL	Boyce, J. M.	CORNELL UNIVERSITY	NSG 7547	Veverka, J.	32	2992
HQ-SL	Quaide, W. L.	CORNELL UNIVERSITY	NSG 7593	Burns, J. A.	32	2993
HQ-SL	Quaide, W. L.	CORNELL UNIVERSITY	NSG 7606	Veverka, J.	32	2994
HQ-SL	Murphy, R. E.	CORNELL UNIVERSITY	NSG 7612	Gierasch, P. J.	31	2995
HQ-SL	Brunk, W. E.	FLORIDA STATE UNIV	NGR 10-004-056	Hunt, R. H.	11	1917
HQ-SL	Murphy, R. E.	FLORIDA STATE UNIV	NSG 7629	Hess, S. K.	31	1920
HQ-SL	Fellows, R. F.	GEORGIA INST OF TECH	NGL 11-002-004	Edwards, H. D.	31	1992
HQ-SL	Murphy, R. E.	HARVARD UNIVERSITY	NGL 22-007-228	Goody, R. M.	31	2454
HQ-SL	Quaide, W. L.	HARVARD UNIVERSITY	NGR 22-007-269	Cameron, A. G.	32	2457
HQ-SL	Murphy, R. E.	HARVARD UNIVERSITY	NSG 7095	Pipkin, F. M.	31	2475
HQ-SL	Brunk, W. E.	HARVARD UNIVERSITY	NSG 7332	Goody, R. M.	11	2478
HQ-SL	Dwornik, S. E.	HARVARD UNIVERSITY	NSG 7398	Goody, R. M.	32	2479
HQ-SL	Quaide, W. L.	HARVARD UNIVERSITY	NSG 7513	O'Connell, R. J.	32	2482
HQ-SL	Murphy, R. E.	HOWARD UNIVERSITY	NSG 5071	Jackson, W. M.	12	1888
HQ-SL	Donn, B.	HOWARD UNIVERSITY	NSG 7378	Jackson, W. M.	12	1896
HQ-SL	Murphy, R. E.	JOHNS HOPKINS UNIV	NSG 7382	Feldman, P. D.	11	2326
HQ-SL	Murphy, R. E.	KANSAS STATE UNIV	NGL 17-001-026	Williams, D.	31	2223
HQ-SL	Dwornik, S. E.	KANSAS STATE UNIV	NSG 7478	Underwood, J. R., Jr.	32	2224
HQ-SL	Quaide, W. L.	KANSAS STATE UNIV	NSG 7580	Underwood, J. R., Jr.	32	2225
HQ-SL	Dwornik, S. E.	KANSAS STATE UNIV	NSG 7613	Underwood, J. R., Jr.	32	2226
HQ-SL	French, B. M.	LEHIGH UNIVERSITY	NGR 39-007-043	Goldstein, J. I.	32	3365
HQ-SL	Dwornik, S. E.	LA STATE U-SHREVEPT	NSG 7542	Nummedal, D.	32	2274
HQ-SL	Murphy, R. E.	MASS INST OF TECH	NGL 22-009-521	Lewis, J. S.	31	2525
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NGR 22-009-672	Pettengill, G. H.	11	2536
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7010	Counselman, C. C., III	32	2590
HQ-SL	Williams, R.	MASS INST OF TECH	NSG 7077	Suomi, V. E.	32	2591
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7081	Toksoz, M. N.	32	2592
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7297	Solomon, S. C.	32	2594
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7338	Burns, R. G.	32	2598
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7432	Biemann, K.	32	2602
HQ-SL	Dwornik, S. E.	MASS INST OF TECH	NSG 7438	Solomon, S. C.	32	2603
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7467	Pinson, W.	32	2604
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NSG 7526	Elliot, J. L.	11	2605
HQ-SL	Brunk, W. E.	MASS INST OF TECH	NSG 7556	Shapiro, I. I.	11	2606
HQ-SL	Quaide, W. L.	MASS INST OF TECH	NSG 7604	Burns, R. G.	32	2607
HQ-SL	Murphy, R. E.	MASS INST OF TECH	NSG 7638	McCord, T. B.	31	2608
HQ-SL	Brunk, W. E.	NEW MEX ST U-LAS CR	NGL 32-003-001	Beebe, R. F.	11	2890
HQ-SL	Donn, B. D.	NEW MEX ST U-LAS CR	NSG 7346	Beebe, H. A.	11	2891
HQ-SL	Murphy, R. E.	NEW YORK UNIVERSITY	NSG 7591	Hoffert, M. I.	31	3013
HQ-SL	Dwornik, S. E.	NE LOUISIANA UNIV	NSG 7357	Dehon, R. A.	32	2275
HQ-SL	Quaide, W. L.	NE LOUISIANA UNIV	NSG 7420	Dehon, R. A.	32	2276
HQ-SL	Dwornik, S. E.	NE LOUISIANA UNIV	NSG 7534	Dehon, R. A.	32	2277
HQ-SL	Dwornik, S. E.	NE LOUISIANA UNIV	NSG 7628	Dehon, R. A.	32	2278
HQ-SL	Bryson, R. P.	OREGON STATE UNIV	NGL 38-002-020	Schmitt, R. A.	32	3322
HQ-SL	Dwornik, S. E.	OREGON STATE UNIV	NSG 7178	Komar, P. D.	32	3329
HQ-SL	Quaide, W. L.	PENN STATE U-UNIV PK	NGL 39-009-010	Gold, D. P.	32	3391

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HQ-SL	Goldstein, B. E.	PENN STATE U-UNIV PK	NSG 7120	Muan, A.	32	3416
HQ-SL	Goldstein, B. E.	PENN STATE U-UNIV PK	NSG 7193	Alexander, S. S.	32	3417
HQ-SL	Quaide, W. E.	PENN STATE U-UNIV PK	NSG 7465	Eggler, D.	32	3419
HQ-SL	Murphy, R. E.	POLY INST OF NY	NGR 33-006-068	Gross, S. H.	31	3016
HQ-SL	Quaide, W. L.	POMONA COLLEGE	NSG 7566	Baird, A. K.	32	1261
HQ-SL	Quaide, W. L.	PRINCETON UNIVERSITY	NSG 7080	Phinney, R. A.	32	2863
HQ-SL	Dwornik, S. E.	PRINCETON UNIVERSITY	NSG 7283	Smoluchowski, R.	32	2866
HQ-SL	Dwornik, S. E.	PRINCETON UNIVERSITY	NSG 7568	Judson, S.	32	2869
HQ-SL	French, B. M.	PRINCETON UNIVERSITY	NSG 7602	Hargraves, R. B.	32	2871
HQ-SL	French, B. M.	PURDUE UNIVERSITY	NGL 15-005-140	Lipschutz, M. E.	32	2155
HQ-SL	Quaide, W. L.	QUEENS COLLEGE	NSG 7321	Takahashi, T.	32	3025
HQ-SL	Fellows, R. F.	RENSSELAER POLY-NY	NGL 33-018-007	Harteck, P.	31	3035
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7032	Michel, F. C.	31	3558
HQ-SL	Fellows, R. F.	RICE UNIVERSITY	NSG 7043	Chamberlain, J. W.	31	3559
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7361	Clayton, D. D.	32	3561
HQ-SL	Quaide, W. L.	RICE UNIVERSITY	NSG 7362	Debremaecker, J. C.	32	3562
HQ-SL	Murphy, R. E.	RICE UNIVERSITY	NSG 7386	Stebbings, R. F.	31	3563
HQ-SL	French, B. M.	RUTGERS U-N BRUNSWK	NSG 7327	Hewins, R. H.	32	2876
HQ-SL	Dwornik, S. E.	RUTGERS U-N BRUNSWK	NSG 7601	Zebib, A.	32	2877
HQ-SL	Murphy, R. E.	STANFORD UNIVERSITY	NGL 05-020-014	Eshleman, V. R.	31	1347
HQ-SL	Dwornik, S. E.	STANFORD UNIVERSITY	NGR 05-020-649	Howard, H. T.	32	1363
HQ-SL	Brunk, W. E.	STANFORD UNIVERSITY	NSG 7395	Tyler, G. L.	11	1404
HQ-SL	Dwornik, S. E.	STANFORD UNIVERSITY	NSG 7538	Levinthal, E. C.	32	1406
HQ-SL	Brunk, W. E	STANFORD UNIVERSITY	NSG 7561	Tyler, G. L.	11	1408
HQ-SL	Murphy, R. E.	STATE UNIV NY-ALBANY	NSG 7093	Weinberg, J. L.	31	3057
HQ-SL	Dwornik, S. E.	STATE UNIV NY-BUFFAL	NGR 33-015-108	King, J. S.	32	3062
HQ-SL	Murphy, R. E.	STATE U NY-STONY BRK	NGR 33-015-139	Varanasi, P.	31	3073
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NGR 33-015-141	Owen, T.	11	3074
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NSG 7286	Knacke, R. F.	11	3085
HQ-SL	Brunk, W. E.	STATE U NY-STONY BRK	NSG 7320	Caldwell, J. J.	11	3086
HQ-SL	Dwornik, S. E.	STATE U NY-STONY BRK	NSG 7553	Owen, T.	32	3087
HQ-SL	Fellows, R. F.	TEXAS A&M UNIVERSITY	NGR 44-001-117	Plass, G. N.	31	3592
HQ-SL	Goldstein, B. E.	TEXAS A&M UNIVERSITY	NSG 7189	Gangi, A. F.	32	3604
HQ-SL	Murphy, R. E.	TEXAS A&M UNIVERSITY	NSG 7370	Young, A. T.	32	3605
HQ-SL	Quaide, W. L.	TEXAS A&M UNIVERSITY	NSG 7417	Gangi, A. F.	32	3606
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NASW 3262	Unavailable	11	1105
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-002	Smith, B. A.	11	1110
HQ-SL	Fellows, R. F.	UNIV OF ARIZONA	NGL 03-002-019	Hoenig, S. A.	31	1111
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-081	Gehrels, A.	11	1112
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NGL 03-002-122	Cox, E. L.	11	1113
HQ-SL	Bohlin, J. M.	UNIV OF ARIZONA	NGL 03-002-191	Strom, R. G.	32	1114
HQ-SL	Brunk, W. F.	UNIV OF ARIZONA	NGR 03-002-219	Gehrels, A. M.	11	1118
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NGR 03-002-370	Sonett, C. P.	32	1121
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7011	Wilkening, L. L.	32	1134
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7020	Sonett, C. P.	32	1135
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7045	Hubbard, W. B.	11	1137
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7070	Fink, U. W.	11	1138
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7114	Rieke, G. H.	11	1140
HQ-SL	Boyce, J. M.	UNIV OF ARIZONA	NSG 7146	Strom, R. G.	32	1141
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7246	Gehrels, A. M.	32	1143
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7249	Zellner, B. H.	32	1144
HQ-SL	Murphy, R. E.	UNIV OF ARIZONA	NSG 7374	Hsieh, K. C.	11	1148
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7419	Levy, E. H.	32	1149
HQ-SL	French, B. M.	UNIV OF ARIZONA	NSG 7436	Boynton, W. V.	32	1150
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7502	Zellner, B. H.	11	1152
HQ-SL	Dwornik, S. E.	UNIV OF ARIZONA	NSG 7544	Woronow, A.	32	1153
HQ-SL	Murphy, R. E.	UNIV OF ARIZONA	NSG 7558	Hunten, D. M.	31	1154
HQ-SL	Murphy, R. E.	UNIV OF ARIZONA	NSG 7573	Tomasko, M. G.	31	1155

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7576	Drake, M. J.	32	1157
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7577	Drake, M. J.	32	1158
HQ-SL	Quaide, W. L.	UNIV OF ARIZONA	NSG 7607	Lebofsky, L.	32	1159
HQ-SL	Brunk, W. E.	UNIV OF ARIZONA	NSG 7634	Brown, R. A.	11	1160
HQ-SL	Roman, N. G.	UNIV ARKANSAS-FAYETV	NSG 7106	Hughes, R. H.	11	1166
HQ-SL	Fellows, R. F.	UNIV CALIF-BERKELEY	NGL 05-003-286	Pimental, G. C.	31	1441
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NGR 05-003-452	Townes, C. H.	11	1449
HQ-SL	Quaide, W. L.	UNIV CALIF-BERKELEY	NSG 7127	Anderson, K. A.	39	1469
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NSG 7152	Welch, W. J.	11	1470
HQ-SL	Smith, M. J.	UNIV CALIF-BERKELEY	NSG 7277	Lin, R. P.	31	1474
HQ-SL	Brunk, W. E.	UNIV CALIF-BERKELEY	NSG 7635	Townes, C. H.	11	1481
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NGL 05-007-002	Kaula, W. M.	32	1515
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NGR 05-007-317	Schubert, G.	32	1522
HQ-SL	French, B. M.	UNIV CALIF-L ANGELES	NGR 05-007-329	Wasson, J. T.	32	1524
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NGR 05-007-351	Coleman, P. J., Jr.	32	1525
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7052	Oertel, G.	32	1548
HQ-SL	Murphy, R. E.	UNIV CALIF-L ANGELES	NSG 7164	Schubert, G.	31	1550
HQ-SL	Murphy, R. E.	UNIV CALIF-L ANGELES	NSG 7239	Swinson, W. F.	31	1552
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7282	Kieffer, H. H.	32	1553
HQ-SL	Dwornik, S. E.	UNIV CALIF-L ANGELES	NSG 7295	Coleman, P. J., Jr.	31	1554
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7315	Schubert, G.	32	1555
HQ-SL	French, B. M.	UNIV CALIF-L ANGELES	NSG 7335	Boynton, W. V	32	1556
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7484	Busse, F. W.	32	1559
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7581	Kieffer, H. H.	32	1561
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7582	Kieffer, H. H.	32	1562
HQ-SL	Quaide, W. L.	UNIV CALIF-L ANGELES	NSG 7583	Shubert, G.	32	1563
HQ-SL	Murphy, R. E.	UNIV CALIF-L ANGELES	NSG 7594	Martin, T. Z.	31	1564
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGL 05-009-002	Arrhenius, G.	32	1586
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NGL 05-009-004	Arnold, J. R.	32	1587
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGL 05-009-005	Suess, H. E.	19	1588
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NGR 05-005-005	Arnold, J. R.	32	1592
HQ-SL	Murphy, R. E.	UNIV CALIF-SAN DIEGO	NGR 05-009-110	Alfven, H.	11	1594
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NSG 7027	Arnold, J. R.	32	1612
HQ-SL	Quaide, W. L.	UNIV CALIF-SAN DIEGO	NSG 7102	Alfven, H.	32	1613
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NSG 7121	MacDougall, J. D.	32	1614
HQ-SL	French, B. M.	UNIV CALIF-SAN DIEGO	NSG 7474	Rudee, M. L.	32	1619
HQ-SL	Quaide, W. L.	UNIV CALIF-S BARBARA	NGR 05-010-062	Peale, S. J.	32	1647
HQ-SL	Quaide, W. L.	UNIV CALIF-S BARBARA	NSG 7586	Fuller, M. D.	32	1657
HQ-SL	Kaluzienski, L. J.	UNIV OF CHICAGO	NGL 14-001-006	Simpson, J. A.	11	2084
HQ-SL	French, B. M.	UNIV OF CHICAGO	NGL 14-001-010	Anders, E.	32	2085
HQ-SL	Quaide, W. L.	UNIV OF CHICAGO	NGR 14-001-135	Turkevich, A. L.	32	2091
HQ-SL	Fellows, R. F.	UNIV OF CHICAGO	NGR 14-001-194	Clayton, R. N.	31	2093
HQ-SL	French, B. M.	UNIV OF CHICAGO	NGR 14-001-249	Grossman, L.	32	2096
HQ-SL	Quaide, W. L.	UNIV OF CHICAGO	NSG 7212	Schramm, D. N.	32	2102
HQ-SL	Quaide, W. L.	UNIV OF CHICAGO	NSG 7532	Turkevich, A. L.	32	2106
HQ-SL	French, B. M.	UNIV OF CHICAGO	NSG 7550	Smith, J. V.	32	2107
HQ-SL	Brunk, W. E.	UNIV COLORADO-BOLDR	NGL 06-003-052	Barth, C. A.	31	1754
HQ-SL	Murphy, R. E.	UNIV COLORADO-BOLDR	NGR 06-003-127	Barth, C. A.	31	1757
HQ-SL	Flinn, E. A.	UNIV COLORADO-BOLDR	NSG 7319	Smith, M. L.	32	1781
HQ-SL	Strickland, A. T.	UNIV COLORADO-BOLDR	NSG 7344	Levine, J.	13	1782
HQ-SL	Quaide, W. L.	UNIV COLORADO-BOLDR	NSG 7584	Spetzler, H. A.	32	1790
HQ-SL	Roman, N. G.	UNIV COLORADO-BOLDR	NSG 7637	Ashby, N.	11	1792
HQ-SL	Quaide, W. L.	UNIV OF DAYTON	NSG 7444	Piekutowski, A. J.	32	3270
HQ-SL	Donn, B.	UNIV OF FLORIDA	NGL 10-005-008	Green, A. S.	31	1937
HQ-SL	Boyce, J. M.	UNIV OF GEORGIA	NGR 11-003-037	Howard, J. H.	32	2024
HQ-SL	Quaide, W. L.	UNIV OF GEORGIA	NSG 7433	Wenner, D. B.	32	2025
HQ-SL	Dwornik, S. E.	UNIV OF GEORGIA	NSG 7539	Brook, G.	32	2026
HQ-SL	Strickland, A. T.	UNIV OF HAWAII-MANOA	NASW 2326	Jefferies, J. T.	11	2031

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HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NASW 3159	Jefferies, J. T.	11	2033
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NGL 12-001-057	Jefferies, J. T.	11	2036
HQ-SL	Finley, C. J.	UNIV OF HAWAII-MANOA	NSG 7179	Berg, E.	19	2045
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NSG 7310	McCord, T. B.	11	2046
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7312	McCord, T. B.	32	2047
HQ-SL	Brunk, W. E.	UNIV OF HAWAII-MANOA	NSG 7323	McCord, T. B.	11	2048
HQ-SL	Dwornik, S. E.	UNIV OF HAWAII-MANOA	NSG 7403	Kafotos, M.	32	2049
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7423	Russ, G. P.	32	2050
HQ-SL	Dwornik, S. E.	UNIV OF HAWAII-MANOA	NSG 7443	McCord, T. B.	32	2051
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7462	Gaffey, M. J.	32	2052
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7590	McCord, T. B.	31	2054
HQ-SL	Quaide, W. L.	UNIV OF HAWAII-MANOA	NSG 7597	Gaffey, M. J.	32	2055
HQ-SL	Dwornik, S. E.	UNIV OF HAWAII-MANOA	NSG 7633	Morrison, D.	13	2056
HQ-SL	Dwornik, S. E.	UNIV HOUSTON-HOUSTON	NSG 7228	King, E. A.	32	3627
HQ-SL	Dwornik, S. E.	UNIV HOUSTON-HOUSTON	NSG 7410	Smith, R. S.	32	3629
HQ-SL	Dwornik, S. E.	UNIV HOUSTON-HOUSTON	NSG 7551	Smith, R.	32	3631
HQ-SL	French, B. M.	UNIV HOUSTON-HOUSTON	NSG 7617	King, E. A.	32	3633
HQ-SL	Brunk, W. E.	UNIV ILLINOIS-URBANA	NGR 14-005-176	Dickel, J. R.	11	2117
HQ-SL	Brunk, W. E.	UNIV OF IOWA	NSG 7412	Neff, J. S.	11	2218
HQ-SL	Goldstein, B. E.	UNIV OF KANSAS	NSG 7351	VanSchmus, W. R.	32	2251
HQ-SL	Quaide, W. L.	UNIV MARYLAND-COL PK	NSG 7046	Adler, I.	32	2404
HQ-SL	Brunk, W. E.	UNIV MARYLAND-COL PK	NSG 7322	A'Hearn, M. F.	11	2409
HQ-SL	Quaide, W. L.	UNIV MARYLAND-COL PK	NSG 7365	Pai, S. I.	32	2411
HQ-SL	Quaide, W. L.	UNIV MARYLAND-COL PK	NSG 7482	Tossell, J.	32	2414
HQ-SL	Brunk, W. E.	UNIV OF MASS-AMHERST	NGL 22-010-023	Irvine, W. M.	11	2613
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NGR 22-010-076	McGill, G. E.	32	2615
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NSG 7405	Huguenin, R. L.	32	2617
HQ-SL	Dwornik, S. E.	UNIV OF MASS-AMHERST	NSG 7571	Wise, D.	32	2618
HQ-SL	French, B. M.	UNIV OF MIAMI	NSG 7309	Fisher, D. E.	32	1964
HQ-SL	Quaide, W. L.	UNIV OF MIAMI	NSG 7510	Brass, G. B.	32	1965
HQ-SL	Murphy, R. E.	UNIV MICH-ANN ARBOR	NGR 23-005-094	Liu, V. C.	31	2659
HQ-SL	Murphy, R. E.	UNIV MICH-ANN ARBOR	NSG 7404	Atreya, S. K.	31	2688
HQ-SL	Murphy, R. E.	UNIV MICH-ANN ARBOR	NSG 7587	Carignan, G. R.	31	2691
HQ-SL	Murphy, R. E.	U MINN-MNPLS-ST PAUL	NGL 24-005-009	Nier, A. O.	31	2706
HQ-SL	Murphy, R. E.	U MINN-MNPLS-ST PAUL	NSG 7575	Nier, A. O.	31	2727
HQ-SL	Quaide, W. L.	UNIV MO-ST LOUIS	NSG 7563	James, P. B.	32	2776
HQ-SL	Fellows, R. F.	UNIV NEBRASKA-LINCLN	NGR 28-004-021	Samson, J. A.	31	2798
HQ-SL	Dwornik, S. E.	UNIV OF NEW MEXICO	NGL 32-004-011	Elston, W. E.	32	2897
HQ-SL	French, B. M.	UNIV OF NEW MEXICO	NGL 32-004-064	Keil, K.	32	2899
HQ-SL	Dwornik, S. E.	UNIV OF NEW MEXICO	NGR 32-004-062	Elston, W. E.	32	2900
HQ-SL	Quaide, W. L.	UNIV OF NEW MEXICO	NSG 7579	Keil, K.	31	2902
HQ-SL	Quaide, W. L.	UNIV OREGON-EUGENE	NGR 38-003-020	Weill, D. F.	32	3332
HQ-SL	Brunk, W. E.	UNIV OREGON-EUGENE	NSG 7531	Kemp, J. C.	11	3334
HQ-SL	Murphy, R. E.	UNIV OF PITTSBURGH	NGL 39-011-013	Fite, W. L.	31	3436
HQ-SL	Murphy, R. E.	UNIV OF PITTSBURGH	NGL 39-011-030	Zipf, E. C.	31	3437
HQ-SL	Quaide, W. L.	UNIV OF PITTSBURGH	NGL 39-011-085	Cassidy, W. A.	32	3438
HQ-SL	Murphy, R. E.	UNIV OF PITTSBURGH	NGR 39-011-137	Biondi, M. A.	31	3439
HQ-SL	Dwornik, S. E.	UNIV OF PITTSBURGH	NSG 7147	Hapke, B. W.	11	3449
HQ-SL	Quaide, W. L.	UNIV OF PITTSBURGH	NSG 7631	Hapke, B. W.	32	3450
HQ-SL	Dwornik, S. E.	UNIV OF RHODE ISLAND	NSG 7414	Boothroyd, J. C.	32	3465
HQ-SL	Quaide, W. L.	UNIV OF SANTA CLARA	NSG 7330	Aggarwal, H. R.	32	1688
HQ-SL	Fellows, R. F.	UNIV SO CAROLINA-COL	NGL 41-002-003	Durig, J. R.	31	3473
HQ-SL	Dwornik, S. E.	UNIV SO CAROLINA-COL	NSG 7076	Nummedal, D.	32	3474
HQ-SL	Murphy, R. E.	UNIV OF SOUTHERN CAL	NGR 05-018-178	Maxworthy, T.	31	1694
HQ-SL	Murphy, R. E.	UNIV OF SOUTHERN CAL	NGR 05-018-180	Judge, D. L.	31	1695
HQ-SL	Quaide, W. L.	UNIV OF SOUTHERN CAL	NSG 7535	Huth, G. C.	32	1706
HQ-SL	Murphy, R. E.	UNIV OF SOUTHERN CAL	NSG 7595	Shemansky, D. E.	31	1707
HQ-SL	Fellows, R. F.	UNIV TENNESSEE-KNOXV	NGL 43-001-006	Gaflar, N. M.	31	3510

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HQ-SL	French, B. M.	UNIV TENNESSEE-KNOXV	NSG 7413	McSween, H. Y.	32	3517
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-006	Wilson, W. J.	11	3653
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGL 44-012-055	Douglas, J. N.	11	3654
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-152	Smith, H. J.	11	3655
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NGR 44-012-282	Mulholland, J. D.	11	3657
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NSG 7326	Baker, V. R.	32	3681
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NSG 7363	Muehlberger, W. R.	32	3683
HQ-SL	Brunk, W. E.	UNIV TEXAS-AUSTIN	NSG 7408	Jefferys, W. H.	11	3686
HQ-SL	Quaide, W. L.	UNIV TEXAS-AUSTIN	NSG 7505	Smoluchowski, R.	32	3688
HQ-SL	Dwornik, S. E.	UNIV TEXAS-AUSTIN	NSG 7557	Baker, V. R.	32	3689
HQ-SL	Murphy, R. E.	UNIV TEXAS-DALLAS	NGL 44-004-026	Johnson, F. S.	31	3701
HQ-SL	Quaide, W. L.	UNIV TEXAS-DALLAS	NSG 7034	Hodges, R. R., Jr.	31	3709
HQ-SL	Murphy, R. E.	UNIV TEXAS-DALLAS	NSG 7599	Hanson, W. B.	31	3710
HQ-SL	Quaide, W. L.	UNIV TEXAS-GALVESTON	NSG 7418	Makamura, Y.	32	3716
HQ-SL	Murphy, R. E.	UNIV OF TOLEDO	NSG 7301	Delsemme, A. H.	11	3286
HQ-SL	Fellows, R. F.	UNIV OF TOLEDO	W-14168	Delsemme, A. H.	19	3291
HQ-SL	Quaide, W. L.	UNIV OF UTAH	NSG 7425	Shorthill, R. W.	32	3733
HQ-SL	Dwornik, S. E.	UNIV OF VIRGINIA	NGR 47-005-172	Howard, A.	32	3851
HQ-SL	Brunk, W. E.	UNIV OF VIRGINIA	NSG 7364	Ianna, P. A.	11	3865
HQ-SL	Dwornik, S. E.	UNIV OF VIRGINIA	NSG 7572	Howard, A.	32	3866
HQ-SL	Brunk, W. E.	UNIV OF WASHINGTON	NGR 48-002-142	Greene, T. F.	11	3934
HQ-SL	Murphy, R. E.	UNIV OF WASHINGTON	NSG 7085	Leovy, C. B	31	3951
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7173	Adams, J. B.	32	3952
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7174	Adams, J. B.	32	3953
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7313	McCallum, I. S.	32	3954
HQ-SL	Quaide, W. L.	UNIV OF WASHINGTON	NSG 7448	Adams, J. B.	32	3956
HQ-SL	Murphy, R. E.	UNIV OF WASHINGTON	NSG 7611	Leovy, C. B	31	3957
HQ-SL	Murphy, R. E.	UNIV WISC-MADISON	NGR 50-002-189	Suomi, V. E.	31	3994
HQ-SL	Quaide, W. L.	UNIV WISC-MADISON	NSG 7215	Taylor, J. W.	32	4008
HQ-SL	Dwornik, S. E.	UNIV WISC-PARKSIDE	NGR 50-009-001	Smith, E. I.	32	4011
HQ-SL	Quaide, W. L.	VA MILITARY INSTITUT	NSG 7355	Gates, W. L.	32	3868
HQ-SL	Brunk, W. E.	VIRGINIA POLY INST	NGL 47-004-080	McGee, H. A.	11	3882
HQ-SL	Quaide, W. L.	WASHINGTON UNIVERSTY	NSG 7016	Hohenberg, C. M.	32	2786
HQ-SL	Dwornik, S. E.	WASHINGTON UNIVERSTY	NSG 7087	Arvidson, R. E.	32	2787
HQ-SL	Brunk, W. E.	WASHINGTON UNIVERSTY	NSG 7334	Smith, W. H.	11	2788
HQ-SL	Dwornik, S. E.	WASHINGTON UNIVERSTY	NSG 7545	Arvidson, R. E.	32	2790
HQ-SL	Quaide, W. L.	WASHINGTON UNIVERSTY	NSG 7578	Goettal, K. A.	32	2791
HQ-SL	Murphy, R. E.	YALE UNIVERSITY	NGL 07-004-043	Cross, R. J., Jr.	31	1823
HQ-SL	Quaide, W. L.	YORK COLLEGE NY	NSG 7454	Spergel, M. S.	13	3103
HQ-SM	Shirey, W. H.	UNIV TEXAS-AUSTIN	NASW 2974	Silverberg, E. C.	19	3652
HQ-SP	Tate, F.	HARVARD UNIVERSITY	NSG 7176	Field, G. B.	19	2476
HQ-SP	Tate, F.	MASS INST OF TECH	NGL 22-009-638	Bridge, H. S.	99	2526
HQ-SP	Tate, F.	UNIV CALIF-BERKELEY	NGL 05-003-497	Tole, J. R.	99	1444
HQ-SP	Tate, F.	UNIV OF CHICAGO	NGL 14-001-258	Simpson, J. A.	99	2089
HQ-SP	Tate, F.	UNIV TEXAS-DALLAS	NGL 44-004-130	Johnson, F. S.	99	3702
HQ-ST	Taylor, W. W.	BOSTON COLLEGE	NSG 7385	Eather, R. H.	39	2426
HQ-ST	Tomayko, D. W.	BOSTON COLLEGE	NSG 7468	Carovillano, R. L.	39	2427
HQ-ST	Taylor, W. W.	BOSTON UNIVERSITY	NSG 7254	Mendillo, M.	19	2436
HQ-ST	Bohlin, J. D.	CALIF INST OF TECH	NGL 05-002-034	Zirin, H.	11	1186
HQ-ST	Bohlin, J. D.	CALIF INST OF TECH	NSG 7342	Goldreich, P.	13	1223
HQ-ST	Bohlin, J. D.	CAL STATE U-NRTHRDGE	NSG 7456	Chapman, G. A.	13	1254
HQ-ST	Wiskerchen, M. J.	CATHOLIC UNIVERSITY	NGR 09-005-063	Whang, Y. C.	13	1839
HQ-ST	Bohlin, J. D.	CATHOLIC UNIVERSITY	NSG 7422	Whang, Y. C.	13	1843
HQ-ST	Cauffman, D. P.	COLLEGE OF WM & MARY	NSG 7416	Montgomery, D. C.	19	3771
HQ-ST	Kaiser, M. L.	CORNELL UNIVERSITY	NGR 33-010-161	Farley, D. T.	13	2963
HQ-ST	King, J. H.	DARTMOUTH COLLEGE	NSG 7292	Sonnerup, B. U.	39	2818
HQ-ST	Kakar, R. K.	DUKE UNIVERSITY	NSG 7540	DeLucia, F. C.	31	3109
HQ-ST	King, J. H.	HARVARD UNIVERSITY	NASW 2952	McElroy, M. B.	33	2450

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TECH OFF LOC	TECHNICAL OFFICER	INSTITUTION	AGREEMENT NUMBER	FIRST PRINCIPAL INVESTIGATOR	FIELD CODE	ACC NO.
HQ-ST	Seals, R. K., Jr.	HARVARD UNIVERSITY	NASW 3242	Anderson, J.	31	2451
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NGL 22-007-006	Parkinson, W. H.	13	2452
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NGR 22-007-202	Parkinson, W. H.	11	2456
HQ-ST	Kakar, K. K.	HARVARD UNIVERSITY	NSG 2031	McElroy, M. B.	31	2460
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 5128	Parkinson, W. H.	13	2462
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 7461	Parkinson, W. H.	11	2480
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 7497	Vaiana, G. S.	13	2481
HQ-ST	Bohlin, J. D.	HARVARD UNIVERSITY	NSG 7537	Vaiana, G. S.	13	2483
HQ-ST	Hedin, A. E.	JOHNS HOPKINS UNIV	NSG 7055	Krimigis, S. M.	13	2325
HQ-ST	Cauffman, D. P.	MASS INST OF TECH	NGL 22-009-015	Bridge, H. S.	13	2521
HQ-ST	Bohlin, J. D.	MICHIGAN STATE UNIV	NSG 7293	Stein, R. F.	13	2627
HQ-ST	Hedin, A. E.	NEW MEX ST U-LAS CR	NSG 7622	Theimer, O. H.	19	2892
HQ-ST	Simon, N. K.	OHIO STATE UNIV	NASW 3149	Seliga, T. A.	31	3213
HQ-ST	Kakar, R. K.	OHIO STATE UNIV	NSG 7479	Shaw, J. H.	31	3241
HQ-ST	Kaiser, M. L.	PENN STATE U-UNIV PK	NGL 39-009-003	Nisbet, J. S.	13	3389
HQ-ST	Tilford, S. G.	PENN STATE U-UNIV PK	NSG 7350	Hale, L. C.	31	3418
HQ-ST	Cauffman, D. P.	RICE UNIVERSITY	NGL 44-006-012	Michel, F. C.	13	3553
HQ-ST	Cauffman, D. P.	RICE UNIVERSITY	NGR 44-006-137	Dessler, A. J.	13	3555
HQ-ST	Quaide, W. L.	RICE UNIVERSITY	NSG 7157	Freeman, J. W., Jr.	32	3560
HQ-ST	Wiskerchen, M. J.	STANFORD UNIVERSITY	NGL 05-020-008	Helliwell, R. A.	13	1346
HQ-ST	Kaiser, M. L.	STANFORD UNIVERSITY	NGL 05-020-176	Crawford, F. W.	19	1349
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NGL 05-020-272	Sturrock, P. A.	13	1351
HQ-ST	Kaiser, M. L.	STANFORD UNIVERSITY	NGR 05-020-001	DaRosa, A. V.	19	1354
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NGR 05-020-559	Wilcox, J. M.	11	1359
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NSG 7092	Petrosian, V.	11	1402
HQ-ST	Bohlin, J. D.	STANFORD UNIVERSITY	NSG 7552	Tyler, G. L.	13	1407
HQ-ST	Greenwood, L. R.	STATE UNIV NY-ALBANY	NSG 7222	Kiang, C. S.	31	3058
HQ-ST	Timothy, A. F.	STATE U NY-STONY BRK	NSG 7003	Stroke, G. W.	11	3083
HQ-ST	King, J. H.	UNIV ALASKA-FAIRBNKS	NSG 7447	Akasofu, S.	31	1068
HQ-ST	Hedin, A. E.	UNIV ALASKA-FAIRBNKS	NSG 7625	Swift, O. W.	19	1069
HQ-ST	Kaiser, M. L.	UNIV OF ARIZONA	NGR 03-002-107	Hsieh, K. C.	13	1116
HQ-ST	Hedin, A. E.	UNIV OF ARIZONA	NSG 7024	Sonett, C. P.	13	1136
HQ-ST	Bohlin, J. D.	UNIV OF ARIZONA	NSG 7168	Levy, E. H.	13	1142
HQ-ST	Newton, G. P.	UNIV OF ARIZONA	NSG 7485	Hunter, D. M.	31	1151
HQ-ST	King, J. H.	UNIV CALIF-BERKELEY	NGL 05-003-017	Anderson, K. A.	19	1439
HQ-ST	Kaiser, M. L.	UNIV CALIF-BERKELEY	NSG 7401	Mozer, F. S.	19	1476
HQ-ST	Bohlin, J. D.	UNIV CALIF-BERKELEY	NSG 7527	Anderson, K. A.	13	1479
HQ-ST	Bohlin, J. D.	UNIV CALIF-IRVINE	NSG 7375	VanHoven, G.	13	1499
HQ-ST	Cauffman, D. P.	UNIV CALIF-L ANGELES	NGL 05-007-004	Coleman, P. J., Jr.	39	1516
HQ-ST	Wiskerchen, M. J.	UNIV CALIF-L ANGELES	NGL 05-007-190	Kennel, C. F.	19	1517
HQ-ST	Taylor, W. W.	UNIV CALIF-L ANGELES	NGR 05-007-276	Holzer, R. E.	13	1520
HQ-ST	Timothy, A. F.	UNIV CALIF-L ANGELES	NSG 7158	Ulrich, R. K.	13	1549
HQ-ST	Cauffman, D. P.	UNIV CALIF-L ANGELES	NSG 7180	Siscoe, G. L.	39	1551
HQ-ST	Bohlin, J. D.	UNIV CALIF-L ANGELES	NSG 7407	Ulrich, R. K.	13	1558
HQ-ST	Schmerling, E. R.	UNIV CALIF-L ANGELES	NSG 7616	Stenzel, R. L.	19	1565
HQ-ST	Hedin, A. E.	UNIV CALIF-SAN DIEGO	NGL 05-005-007	McIlwain, C. E.	13	1585
HQ-ST	Bohlin, J. D.	UNIV CALIF-SAN DIEGO	NSG 7161	Peterson, L. E.	13	1615
HQ-ST	Bohlin, J. D.	UNIV CALIF-SAN DIEGO	NSG 7406	Canfield, R. C.	13	1618
HQ-ST	Schmerling, E. R.	UNIV CALIF-SAN DIEGO	NSG 7623	Alfven, H.	19	1621
HQ-ST	Seals, R. K., Jr.	UNIV OF CHICAGO	NSG 7356	Kaplan, L. D.	31	2104
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NGL 06-003-057	Linsky, J. L.	13	1755
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7130	Hansen, E. R.	13	1776
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7165	Chipman, E. G.	13	1777
HQ-ST	Kakar, R. K.	UNIV COLORADO-BOLDR	NSG 7231	Thomas, R. J.	31	1778
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7287	Dulk, G. A.	13	1779
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7291	Thomas, R. N.	13	1780
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7507	Smith, D. F.	13	1787
HQ-ST	Bohlin, J. D.	UNIV COLORADO-BOLDR	NSG 7511	Gebbie, K. B.	13	1788

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HQ-ST	Kakar, R. K.	UNIV COLORADO-BOLDR	NSG 7559	Timothy, J. G.	31	1789
HQ-ST	Kakar, R. K.	UNIV OF DENVER	NSG 7271	Murcray, D. G.	31	1809
HQ-ST	Bohlin, J. D.	UNIV OF HAWAII-MANOA	NGL 12-001-011	Jefferies, J. T.	11	2034
HQ-ST	Bohlin, J. D.	UNIV OF HAWAII-MANOA	NSG 7536	Jefferies, J. T.	13	2053
HQ-ST	Wiskerchen, M. J.	UNIV HOUSTON-HOUSTON	NSG 7609	Sheldon, W. R	19	3632
HQ-ST	Seals, R. K., Jr.	UNIV ILLINOIS-URBANA	NSG 7506	Bowhill, S. A.	31	2134
HQ-ST	Wiskerchen, M. J.	UNIV OF IOWA	NGL 16-001-002	VanAllen, J A.	13	2211
HQ-ST	Kaiser, M. L.	UNIV OF IOWA	NGL 16-001-043	Gurnett, D. A.	13	2212
HQ-ST	Hedin, A. E.	UNIV OF IOWA	NSG 7632	Joyce, G.	19	2220
HQ-ST	Hedin, A. E.	UNIV MARYLAND-COL PK	NGL 21-002-005	Wu, C S.	19	2364
HQ-ST	Bohlin, J. D.	UNIV MARYLAND-COL PK	NGR 21-002-199	Kundu, M. R	13	2369
HQ-ST	Bohlin, J. D.	UNIV MARYLAND-COL PK	NSG 7427	Spicer, D. S.	13	2412
HQ-ST	Bohlin, J. D.	UNIV MICH-ANN ARBOR	NGL 23-005-275	Mohler, O. C.	11	2657
HQ-ST	Cauffman, D. P.	UNIV MICH-ANN ARBOR	NGR 23-005-015	Nagy, A F.	31	2658
HQ-ST	Hedin, A. E.	UNIV MICH-ANN ARBOR	NGR 23-005-320	Samir, U.	13	2660
HQ-ST	Newton, G. P.	UNIV MICH-ANN ARBOR	NSG 7209	Donahue, T. M.	31	2686
HQ-ST	Cauffman, D. P.	UNIV MICH-ANN ARBOR	NSG 7492	Hays, P. B.	31	2690
HQ-ST	King, J. H.	U MINN-MNPLS-ST PAUL	NSG 7005	Winckler, J. R	39	2722
HQ-ST	Taylor, W. H.	U MINN-MNPLS-ST PAUL	NSG 7108	Kellogg, P. J.	19	2723
HQ-ST	Cauffman, D. P.	U MINN-MNPLS-ST PAUL	NSG 7237	Cahill, L. J , Jr.	19	2725
HQ-ST	Bohlin, J. D.	UNIV NEW HAMP-DURHAM	NGL 30-002-018	Chupp, E. L.	13	2825
HQ-ST	Bohlin, J. D.	UNIV NEW HAMP-DURHAM	NSG 7411	Fisk, L. A	13	2830
HQ-ST	Kakar, R. K.	UNIV OREGON-EUGENE	NSG 7360	Nolt, I G	31	3333
HQ-ST	Kakar, R. K.	UNIV OF PITTSBURGH	NGR 39-011-161	Kaufman, F	12	3440
HQ-ST	Bohlin, J. D.	UNIV OF ROCHESTER	NSG 7562	Thomas, J H.	13	3101
HQ-ST	Schmerling, E. R.	UNIV OF SOUTHERN CAL	NGR 05-018-181	Intriligator, D S.	13	1696
HQ-ST	Cauffman, D. P.	UNIV OF SOUTHERN CAL	NGR 05-018-185	Intriligator, D. S	13	1697
HQ-ST	Wiskerchen, M J.	UNIV TEXAS-DALLAS	NGR 44-004-120	Hanson, W B	31	3703
HQ-ST	King, J. H.	UNIV WISC-MADISON	NGR 50-002-162	Scherb F.	13	3993
HQ-ST	Kakar, R. K.	UTAH STATE UNIV	NSG 7206	Megill, L. R.	12	3745
HQ-ST	Tilford, S. G.	UTAH STATE UNIV	NSG 7210	Baker, K D	31	3746
HQ-ST	Hedin, A. E.	UTAH STATE UNIV	NSG 7289	Banks, P M	31	3747
HQ-ST	Kakar, R. K.	UTAH STATE UNIV	NSG 7388	Megill, L. R	31	3748
HQ-ST	Newton, G. P.	YORK UNIVERSITY	NGR 52-134-005	Schiff, H. I.	31	4025
HQ-U	Ludi, A. J.	UNIV OF NEW MEXICO	NASW 3243	Sanchez, R S	41	2895
HQ-	Corsiglia, V. R.	IOWA STATE UNIV	NCC 2 22	Nogel, J	41	2189
ARC	Zill, L. P.	PURDUE UNIVERSITY	NSG 2404	Mitchell, C. A	59	2161