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A Catalog of NASA Special Publications



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A Catalog of NASA Special Publications



Scientific and Technical Information Branch 1981
National Aeronautics and Space Administration
Washington, DC

Introduction

THIS booklet attempts to list all Special Publications that have been released by NASA since the series was begun in 1961. It is an effort to still cries from those who have asked for a comprehensive listing. The Special Publication series, which has included some of NASA's most ambitious scientific or technical books, has covered a broad range of topics, including much of the agency's research and development work, its full range of space-exploration programs, its work in advancing aeronautics technology, and many associated historical and managerial efforts. In the nearly two decades that the series has existed, some 1200 titles have borne the SP identifier.

How NASA Special Publications came about may be instructive. Along with several predecessor agencies, NASA research laboratories were accustomed to publishing reports, using a formal structure of four or five separate series, with the characteristics of each series carefully defined. Inevitably this raised the question, how do you categorize reports that don't fit existing patterns? The answer, obviously, is that you put them in another series labeled "special." The backroom gnomes who invented this solution had no knowledge that they were inventing a bushy tail that would soon wag the dog. By the mid-1960s the new series was becoming preeminent among NASA publications, and beginning to win worldwide recognition.

The reason of course is that these were exciting years. It was the time of Mercury, Gemini, and the foundation work for Apollo in manned spaceflight; of Ranger, Mariner, and Surveyor in unmanned probes; of dozens of scientific and applications satellites. It was a time when weather satellites first gave early hurricane warnings, and when relay stations in the sky made intercontinental television an everyday affair. It was a time when spacecraft began to capture and return exciting images from space, of steadily improving resolution and quality, providing insights long denied to terrestrial eyes. The editors producing NASA SPs worked long and hard at obtaining the best reproduction quality that could be managed with the constraints imposed by time and available funds, and the quirks of Government printing regulations.

So the series flourished and grew beyond precedent and dreams. Subsets appeared within the numbering scheme, with special blocks of numbers for handbooks, for histories, for technology-utilization books, for bibliographies, and for spacecraft design criteria. The SP General series bloomed with mission reports, scientific results, aerodynamic treatises, atmospheric models, structural analyses, and planetary atlases. By the mid-1970s it was evident that increasing selectivity and the invention of subsets were not effective in checking the overbalancing growth of the series, and a reorganization took place. Analysis showed that more and more proceedings of conferences were being published, for nowadays research and exploration are almost invariably collective activities, and the practitioners are intensely interactive people. So these publications were split off and given a series of their own, Conference Publications. Handbooks, data compilations, and computer printouts became Reference Publications. Administrative and ephemeral studies were relegated to other crevices of the publishing system. But so wide-ranging are NASA's goals and missions, that the flow of forthcoming SPs remains scarcely abated.

As this booklet goes to press, there are about 450 titles in the General SP series alone. Many have been very popular, often publicized by word of mouth; but promotion and distribution have perhaps never been adequate, and so visibility is somewhat limited. NASA's policy has been to recognize that it can provide copies only to its "extended family"—itself, its contractors and grantees, and the various academic, scientific, and industrial communities involved in space exploration and aeronautics. The general public has been expected to turn to the Government Printing Office or to the National Technical Information Service for publications. Both organizations have recently been displaying talent in book merchandising, but for most of the life of the SP series it has been sadly true that a

would-be buyer had to want a book pretty badly to get it. Nevertheless, several dozen Special Publications have become best sellers, including *EXPLORING SPACE WITH A CAMERA*, *THIS ISLAND EARTH*, *APOLLO EXPEDITIONS TO THE MOON*, *MISSION TO EARTH*, and *THE MARTIAN LANDSCAPE*. The popularity of the richly illustrated books came as no surprise to the backroom editors who produce SPs, but who would have foreseen the success of such unassuming titles as *CLARITY IN TECHNICAL REPORTING*, or *SOLDERING ELECTRICAL CONNECTIONS*?

Special Publications produced in the last twenty years cover a range of subjects. Many of NASA's glorious moments are found in this series. Some of the SPs are scientific and are distributed mainly within a discipline; others present a popular discussion of NASA's programs and are heavily illustrated with color imagery from space.

Those Special Publications thought to have a wide interest or which were disciplinary classics were printed at GPO, and those published within the last few years or which have been good sellers are still available from GPO.

Copies of all books listed as available from NTIS as well as books allowed to go out of print at GPO are available from NTIS. A note of caution: if you order a book from GPO and a reply indicates that it is out of print, you should reconsider your order. If you have ordered a book primarily for the photography or imagery, a subsequent order from NTIS will not be satisfactory. If, however, your interest is in the text, the black and white photocopy supplied from NTIS will be suitable. NTIS is the sales source for public documents produced by the government agencies. A few printed copies are available initially, but once that supply is depleted, NTIS supplies photocopies.

In the list of publications that follows, a brief description is given together with the original sales source and the publication date. The prices are not listed because they change. Phone or write GPO or NTIS for prices of publications that interest you. GPO will want to know the NASA SP number; NTIS will want to know the seven-digit NASA accession number.

As you browse through this list, and you find an attractive title, take care to notice the date of publication. Many books are out of date, and are of historical value only. For example, some books on Mars predate the 1976 Viking mission.

This capsule account of the growth of NASA SPs is necessarily abbreviated, and omits many tales of the lurches, false starts, and dead ends that accompany many human enterprises. It does suggest, though, that as long as bright people devote their lives to exciting research and exploration, energetic and devoted backroom editors will remain to try to capture their results, and a little of their spirit, on paper.—Kay E. Voglewede.

Addresses for ordering publications

GPO:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

(202) 783-3238 or (202) 783-3311 Price information; orders

NTIS:

National Technical Information Service
5285 Port Royal Rd.
Springfield, VA 22161

(703) 487-4780 Information or document accession number

(703) 487-4650 Sales Desk; price information

(703) 487-4630 Subscription information for bibliographies (SP-7000 series)

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Athens, GA 30601

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General

NASA-Industry Program Plans Conference, July 28-29, 1960

*I. H. Abbott, M. B. Ames,
H. L. Dryden, et al.*

N63-90346 126 pp
Avail NTIS 1960

Proceedings of a Conference on Results of the First U.S. Manned Suborbital Space Flight

H. L. Dryden

N64-80458 76 pp
Avail GPO 1961

Proceedings of First National Conference on the Peaceful Uses of Space

N64-81182 179 pp
Avail NTIS 1961

Results of the Second U.S. Manned Suborbital Space Flight, July 21, 1961

N64-84681 58 pp
Avail GPO 1961

Proceedings of the International Meteorological Satellite Workshop, November 13-22, 1961

NASA meteorological satellite program, Tiros satellites, cloud studies, NASA meteorological satellite plans for the future.

N62-11221 233 pp
Avail GPO 1962

NASA Project Names

A listing of names and code words associated with NASA programs.

N62-11673 20 pp
Avail NTIS 1962

Results of the First United States Manned Orbital Space Flight, February 20, 1962

N62-10229 204 pp
Avail GPO 1962

U.S. Standard Atmosphere, 1962

Tables of atmospheric properties, systematic variations in the atmosphere, gravity, geopotential.

N63-13176 5 pp
Avail NTIS 1963

The United States in Space

Activities in the United States space program.

N64-12818 227 pp
Avail NTIS 1963

Proceedings of the Experimenters' Information Meeting on the Apollo Applications Program in Bioscience

D. R. Beem, S. J. Gerathewohl

N66-31806 137 pp
Avail NTIS 1966

U.S. Standard Atmosphere Supplements, 1966

Tables and models depicting conditions other than mid-latitude mean.

N67-37900 304 pp
Avail NTIS 1966

Short Glossary of Space Terms

Glossary of technical terms in frequent use by aerospace technologists.

NASA SP-1
N66-25785 55 pp
Avail NTIS 1962

Proceedings of the Second Image Intensifier Symposium

Advances in science, technology, and application of image tubes. Symposium, October 1961.

NASA SP-2
N62-14873 252 pp
Avail NTIS 1961

List of Selected References on NASA Programs

Technical reports, technical notes, technical translations, journal articles, speeches, Congressional documents.

NASA SP-3
N62-14103 263 pp
Avail NTIS 1962

NASA Day, April 27, 1962: Western Space Age Industries and Engineering Exposition and Conference

Space science, applications, tracking and data acquisition.

NASA SP-4
N62-14863 66 pp
Avail NTIS 1962

Space Scientists and Engineers: Selected Biographical and Bibliographical Listing, 1957-1961

NASA SP-5
N63-90035 336 pp
Avail NTIS 1962

Results of the Second United States Manned Orbital Space Flight, May 24, 1962

Spacecraft and launch systems, modified Mercury network, space phenomena, medical aspects.

NASA SP-6
N62-14691 107 pp
Avail NTIS 1962

Dictionary of Technical Terms for Aerospace Use

W. H. Allen

NASA SP-7
N66-10413 310 pp
Avail NTIS 1965

Proceedings of the Second National Conference on the Peaceful Uses of Space

Mercury, Apollo, Gemini projects; meteorological and communication satellites. Conference, May 1962.

NASA SP-8
N63-11137 272 pp
Avail GPO 1962

Index of NASA Technical Publications With Abstracts

July 1960 to December 1961.

NASA SP-9
N63-90006 432 pp
Avail NTIS 1961

Launch Vehicles of the National Launch Vehicle Program

J. E. Webb

Technical descriptions of Scout, Delta, Titan, Atlas, Thor-Agena, Centaur, Saturn, advanced Saturn, and Nova launch vehicles.

NASA SP-10
N63-10712 34 pp
Avail NTIS 1962

Proceedings of the NASA-University Conference on the Science and Technology of Space Exploration

*H. R. Anderson, W. R. Bandeen,
G. W. Beadle, et al.*

Rockets, geophysics, astronomy, celestial mechanics, bioastronautics. Conference, November 1962.

NASA SP-11
N63-11501 412 pp
Avail GPO 1962

Results of the Third U.S. Manned Orbital Space Flight, October 3, 1962

Spacecraft and launch vehicle performance, aeromedical analysis, pilot's flight report.

NASA SP-12
N63-11990 122 pp
Avail GPO 1962

Geophysics and Astronomy in Space Exploration

*R. E. Bourdeau, J. K. Kupperian, Jr.,
G. H. Ludwig, et al.*

Sounding rockets, space flight ionosphere studies, particles and fields research in space, astronomical research in space, aeronomy research.

NASA SP-13
N63-11503 45 pp
Avail NTIS 1962

Lunar and Planetary Sciences in Space Exploration

*H. R. Anderson, J. E. Conel,
M. Eimer, et al.*

Radar astronomy, exploration of deep space, interplanetary space physics, astrophysics, geological exploration of the Moon and planets.

NASA SP-14
N63-11504 84 pp
Avail NTIS 1962

Celestial Mechanics and Space Flight Analysis

*C. R. Gates, T. W. Hamilton,
W. M. Kaula, et al.*

Computer techniques, satellite orbits, spacecraft flight, space flight optimization.

NASA SP-15
N63-11505 42 pp
Avail NTIS 1962

Data Acquisition From Spacecraft

*W. R. Bandeen, A. G. Ferris,
C. C. Kirsten, et al.*

Role of data processing in orbit determination, scientific and meteorological satellites, data acquisition at planetary ranges.

NASA SP-16
N63-11506 58 pp
Avail NTIS 1962

Control, Guidance, and Navigation of Spacecraft

*J. C. Bird, B. F. Doolin,
J. V. Foster, et al.*

Space rendezvous, atmosphere entry, space vehicle attitude control.

NASA SP-17
N63-11507 56 pp
Avail NTIS 1962

Bioastronautics

*S. J. Gerathewobl, B. E. Gernandt,
R. S. Johnston, et al.*

Bioengineering, exobiology, environmental biology, physiological and behavioral sciences.

NASA SP-18
N63-11508 36 pp
Avail NTIS 1962

Chemical Rocket Propulsion

*C. L. Ball, M. J. Hartmann,
E. R. Jonash, et al.*

Physics of liquid propellants, pumps, turbines, chemical rockets, research on rocket combustion and thrust chambers.

NASA SP-19
N63-11509 55 pp
Avail NTIS 1962

Nuclear Rocket Propulsion

*D. Bogart, H. H. Ellerbrock,
D. S. Gabriel, et al.*

Fluid flow, heat transfer, reactors, dynamics and control of nuclear rockets.

NASA SP-20
N63-11510 62 pp
Avail NTIS 1962

Power for Spacecraft

*C. A. Barrett, D. T. Bernatowicz,
T. P. Moffitt, et al.*

Interrelation of power requirements, energy sources, conversion techniques.

NASA SP-21
N63-11511 27 pp
Avail NTIS 1962

Electric Propulsion for Spacecraft

*E. E. Callaghan, J. R. Jack,
S. Lieblein, et al.*

Power generation systems, electrothermal thrusters.

NASA SP-22
N63-11512 37 pp
Avail NTIS 1962

Aerodynamics of Space Vehicles

*M. H. Bertram, R. W. Boswinkle, Jr.,
J. P. Campbell, et al.*

Launch vehicles, space vehicle landing, hypersonic cruising, advanced reentry vehicles.

NASA SP-23
N63-11513 57 pp
Avail NTIS 1962

Gas Dynamics in Space Exploration

*H. J. Allen, T. N. Canning,
G. Goodwin, et al.*

Hypersonic flow fields, gases at hypervelocities.

NASA SP-24
N63-11514 52 pp
Avail NTIS 1962

Plasma Physics and Magnetohydrodynamics in Space Exploration

*A. Busemann, M. C. Ellis, Jr.,
R. V. Hess, et al.*

Drag forces in the Earth's upper atmosphere, plasma frequency and radio attenuation, plasma accelerator research.

NASA SP-25
N63-11515 78 pp
Avail NTIS 1962

Laboratory Techniques in Space Environment Research

*D. D. Elleman, F. B. Humphrey,
H. E. Martens, et al.*

High-vacuum research techniques, modern magnetism, magnetic field generation.

NASA SP-26
N63-11516 52 pp
Avail NTIS 1962

Materials for Space Operations

*D. D. Davis, Jr., R. H. Kemp,
G. F. Pezdirtz, et al.*

Nonmetallic materials for spacecraft, ablation materials for atmospheric entry, flow and fracture problems, high-strength materials research.

NASA SP-27
N63-11517 47 pp
Avail NTIS 1962

Structures for Space Operations

*R. A. Anderson, G. W. Brooks,
R. W. Leonard, et al.*

Winged vehicle and planetary entry vehicle configuration and design.

NASA SP-28
N63-11518 48 pp
Avail NTIS 1962

Proceedings of the Second NASA-Industry Program Plans Conference

W. L. Lingle, Jr.,

NASA missions, future trends, space sciences program, lunar and planetary programs, biological problems related to space, launch vehicles and propulsion, meteorological and communication systems. Conference, February 1963.

NASA SP-29
N63-15357 221 pp
Avail GPO 1963

The Observatory Generation of Satellites

Orbiting solar, geophysical, and astronomical observations. Symposium, December 1962.

NASA SP-30
N63-15166 62 pp
Avail GPO 1963

Measurement of Thermal Radiation Properties of Solids

J. C. Richmond

Measurement of thermal radiation properties of solids over a wide range of temperatures; emittance studies. Symposium, September 1962.

NASA SP-31
N64-10937 596 pp
Avail GPO 1963

Telstar I

Volume 1. Design, construction, ground facilities uses.

NASA SP-32
N64-10868 400 pp
Avail NTIS 1963

Volume 2. Antennas, results of Telstar tests and experiments.

NASA SP-32
N64-10882 525 pp
Avail NTIS 1963

Volume 3. Components and systems.

NASA SP-32
N64-11079 283 pp
Avail NTIS 1963

Volume 4. Operations, characteristics, performance.

NASA SP-32
N67-12301 448 pp
Avail NTIS 1965

Space Flight Handbooks. Volume 1: Orbital Flight Handbook

D. Kraft, G. Townsend

Part 1. Basic Techniques and Data

NASA SP-33
N63-21101 323 pp
Avail NTIS 1963

Space Flight Handbooks. Volume I: Orbital Flight Handbook (cont.)

Part 2. Mission Sequencing Problems

NASA SP-33
N63-21102 443 pp
Avail NTIS 1963

Part 3. Requirements

NASA SP-33
N63-21103 384 pp
Avail NTIS 1963

Space Flight Handbooks. Volume II: Lunar Flight Handbook

F. Martikan, F. Santora

Part 1. Background Material

NASA SP-34
N63-21104 143 pp
Avail NTIS 1963

Part 2. Lunar Mission Phases

NASA SP-34
N63-21105 444 pp
Avail NTIS 1963

Part 3. Mission Planning

NASA SP-34
N63-21106 156 pp
Avail NTIS 1963

Space Flight Handbooks. Volume III: Planetary Flight Handbook

S. Ross

Part 1. Speed Contours and Auxiliary Graphs for Manned Missions to Mars and Venus

NASA SP-35
N64-14175 280 pp
Avail NTIS 1963

Part 2. Supplementary Trajectory Data: Earth to Venus and Earth to Mars

NASA SP-35
N64-14176 522 pp
Avail NTIS 1963

Part 3. Supplementary Trajectory Data: Venus to Earth and Mars to Earth

NASA SP-35
N64-14177 530 pp
Avail NTIS 1963

Part 5. Trajectories to Jupiter, Ceres, and Vesta

NASA SP-35
N66-21045 541 pp
Avail NTIS 1966

Part 6. Mars Stopover Missions Using Venus Swingbys

NASA SP-35
N68-30098 98 pp
Avail NTIS 1968

Part 7. Direct Trajectories to Jupiter, Saturn, Uranus, and Neptune

NASA SP-35
N69-33490 105 pp
Avail GPO 1969

**Space Flight Handbooks. Volume III:
Planetary Flight Handbook (cont.)**

Part 8. Jupiter Swingby Missions to Saturn,
Uranus, Neptune, and Pluto

NASA SP-35
N69-34850 131 pp
Avail GPO 1969

Part 9. Direct and Venus Swingby Trajec-
tories

NASA SP-35
N70-28534 238 pp
Avail GPO 1970

**Aerodynamic Design of Axial-Flow
Compressors**

R. O. Bullock, I. A. Johnsen

Aerodynamic systems design of axial flow
compressors.

NASA SP-36
N65-23345 524 pp
Avail NTIS 1965

**Conference on Space, Science, and
Urban Life**

W. E. Thompson

Use of space age science and technology to
solve socioeconomic problems of metropoli-
tan areas resulting from industrial growth.
Conference, March 1963.

NASA SP-37
N64-11502 265 pp
Avail GPO 1963

Advanced Bearing Technology

W. J. Anderson, E. E. Bisson

Fundamentals of friction and wear on fluid
film and rolling-element bearings.

NASA SP-38
N64-15226 517 pp
Avail GPO 1964

**Results of the Project Mercury Ballistic
and Orbital Chimpanzee Flights**

J. P. Henry, J. D. Moseley

NASA SP-39
N64-12915 77 pp
Avail GPO 1963

**Proceedings of the Conference on
Space-Age Planning**

Space-age planning and the peaceful uses of
space. Conference, May 1963.

NASA SP-40
N63-21126 272 pp
Avail GPO 1963

**Proceedings of the NASA-AEC Liquid-
Metals Corrosion Meeting, Volume 1**

Liquid metal corrosion processes.

NASA SP-41
N64-20783 292 pp
Avail NTIS 1964

**Proceedings of the NASA-AEC Liquid-
Metals Corrosion Meeting, Volume 2**

NASA SP-42
N73-70372 54 pp
Avail NTIS 1963

Ariel I: The First International Satellite

R. C. Baumann

Development of Ariel I ionosphere satellite.

NASA SP-43
N64-10332 84 pp
Avail NTIS 1963

**Proceedings of the Conference on the
Law of Space and of Satellite
Communications**

Space law and communications satellites, free
space lower boundary, control of space, or-
bital regulation, and international coopera-
tion. Conference, May 1963.

NASA SP-44
N64-21136 212 pp
Avail GPO 1964

**Mercury Project Summary, Including
Results of the Fourth Manned Orbital
Flight, May 15-16, 1963**

Space vehicle development, mission support,
flight operations, mission results.

NASA SP-45
N63-21951 435 pp
Avail GPO 1963

Physics of Nonthermal Radio Sources

A. G. W. Cameron, S. P. Maran

Spectra, polarization, and optical properties
of galactic and extragalactic light sources.
Conference, December 1962.

NASA SP-46
N65-13251 159 pp
Avail NTIS 1964

**Space Cabin Atmospheres. Part I:
Oxygen Toxicity**

E. M. Roth

High oxygen tension in animals and humans,
oxygen toxicity, and drug therapy.

NASA SP-47
N64-31219 59 pp
Avail GPO 1964

Space Cabin Atmospheres. Part II: Fire and Blast Hazards

E. M. Roth

Fire and blast hazards in space cabin atmospheres.

NASA SP-48
N64-20744 126 pp
Avail GPO 1964

Meteorological Observations Above 30 Kilometers

Meteorological rocket soundings in stratosphere and mesosphere. Conference, July 1963.

NASA SP-49
N64-23869 61 pp
Avail GPO 1964

AAS-NASA Symposium on the Physics of Solar Flares

W. N. Hess

Spectrographic and magnetic observations of flares, x-ray and gamma ray bursts, radio bursts, energetic particles, theory of flares. Symposium, October 1963.

NASA SP-50
N64-30251 433 pp
Avail GPO 1964

Proceedings of the Fourth National Conference on the Peaceful Uses of Space

Exploration of space, discoveries from space exploration, uses of weather and communication satellites. Conference, April 1964.

NASA SP-51
N64-30326 205 pp
Avail GPO 1964

Proceedings of the NASA Conference on Communicating Through Plasmas of Atmospheric Entry and Rocket Exhaust

Reentry communication problems, studies using simulated reentry plasma, flight experiments. Conference, January 1964.

NASA SP-52
N71-70451 231 pp
Avail NTIS 1964

A Quasi-Global Presentation of Tiros III Radiation Data

*L. J. Allison, T. I. Gray, Jr.,
G. Warnecke*

Tiros III worldwide radiation map, synoptic application of infrared data.

NASA SP-53
N65-10301 16 pp
Avail GPO 1964

Scientific Findings From Explorer VI

H. E. Newell

Scientific data acquired by Explorer satellite measurements; astronomy and celestial mechanics, ionospheric physics, and energetic particles in Van Allen belt and magnetic fields.

NASA SP-54
N65-21965 377 pp
Avail NTIS 1965

Symposium on Thermal Radiation of Solids

S. Katzoff

Fundamentals, surface effects, measurement techniques, space environment effects, and applications of thermal radiation of solids. Conference, March 1964.

NASA SP-55
N65-26855 590 pp
Avail NTIS 1965

Concepts for Detection of Extra- terrestrial Life

F. H. Quimby

NASA SP-56
N65-12268 52 pp
Avail NTIS 1964

Orbiting Solar Observatory Satellite OSO-1: The Project Summary

OSO-1 spacecraft dynamics, structural design and fabrication, control systems, data acquisition and command system, power supply, thermal control, experiments, and test program.

NASA SP-57
N66-29482 308 pp
Avail NTIS 1965

Effect of Ionizing Radiation on a Series of Saturated Polyesters

*G. F. Dalelio, R. Haberli,
G. F. Pezdirtz*

NASA SP-58
N65-11059 68 pp
Avail NTIS 1964

Mariner-Venus 1962: Final Project Report

Project organization and management, space vehicle system, trajectory and orbit, tracking and data acquisition, scientific results.

NASA SP-59
N66-14702 380 pp
Avail NTIS 1965

X-15 Research Results, With a Selected Bibliography

W. H. Stillwell

X-15 aircraft development concept, flight research, aerodynamic characteristics of supersonic-hypersonic flight, hypersonic structure, flying laboratory, and bibliography.

NASA SP-60
N65-20162 135 pp
Avail NTIS 1965

Ranger VII Photographs of the Moon. Part I: Camera "A" Series

Lunar surface closeup pictures.

NASA SP-61
N64-31723 226 pp
Avail GPO 1964

Ranger VII Photographs of the Moon. Part II: Camera "B" Series

NASA SP-62
N65-17866 226 pp
Avail GPO 1965

Ranger VII Photographs of the Moon. Part III: Camera "P" Series

Lunar photographs taken by four partial-scan cameras aboard Ranger VII.

NASA SP-63
N65-33848 235 pp
Avail NTIS 1965

Progress in Development of Methods in Bone Densitometry

*D. W. Jenkins, W. F. Neumann,
G. D. Whedon*

Determining thickness and mineral content in vertebra and other bones by x-ray and other densitometry, application of techniques to human studies. Conference, March 1965.

NASA SP-64
N66-17666 199 pp
Avail NTIS 1966

Space Technology. Volume I: Spacecraft Systems

L. H. Abraham

Spacecraft systems, aerodynamics, power plants, loads, propellant tank design.

NASA SP-65
N65-24625 82 pp
Avail NTIS 1965

Space Technology. Volume II: Spacecraft Mechanical Engineering

J. L. Adams

Spacecraft design and mechanical engineering.

NASA SP-66
N65-24626 169 pp
Avail NTIS 1965

Space Technology. Volume IV: Spacecraft Guidance and Control

J. R. Scull

Spacecraft control, navigation, and guidance.

NASA SP-68
N67-16059 140 pp
Avail NTIS 1966

Space Technology. Volume V: Telecommunications

J. J. Stiffler

Improved data handling and pulse modulation systems for space telecommunication.

NASA SP-69
N67-16555 148 pp
Avail NTIS 1966

Proceedings of the Conference on Space Nutrition and Related Waste Problems

T. C. Helvey

Conference, April 1964.

NASA SP-70
N65-18566 408 pp
Avail NTIS 1964

Proceedings of Second Symposium on Protection Against Radiation in Space

A. Reetz, Jr.

Symposium, October 1964.

NASA SP-71
N65-34575 519 pp
Avail NTIS 1965

Symposium on the Analysis of Central Nervous System and Cardiovascular Data Using Computer Methods

W. R. Adey, L. D. Proctor

Symposium, October 1964.

NASA SP-72
N65-28750 492 pp
Avail NTIS 1965

The Nature and Scope of the NASA University Program

T. L. K. Smull

NASA SP-73
N65-28332 41 pp
Avail NTIS 1965

Survey of the Literature of the Solar Constant and the Spectral Distribution of Solar Radiant Flux

M. P. Tbeakaekara

Solar constant, spectral distribution of solar radiant flux, solar radiation laws and simulation, spacecraft thermal balance, and radiation measurement scale.

NASA SP-74
N65-22362 47 pp
Avail NTIS 1965

An Analysis of the Extraterrestrial Life Detection Problem

*R. D. Johnson, R. B. Painter,
R. S. Young*

NASA SP-75
N65-34227 36 pp
Avail NTIS 1965

Final Report on the Relay I Program

Relay I satellite program to carry out communications experiments with spacecraft, to detect radiation particles in Van Allen belt, and to determine radiation damage to components.

NASA SP-76
N66-10226 749 pp
Avail NTIS 1965

First Conference on the Role of the Vestibular Organs in the Exploration of Space

Role of vestibular apparatus, semicircular canals, and otolith organs in space explorations. Symposium, January 1965.

NASA SP-77
N66-16106 376 pp
Avail NTIS 1965

The Meteoroid Environment and Its Effects on Materials and Equipment

W. A. Cosby, R. G. Lyle

Hypervelocity impact phenomena.

NASA SP-78
N66-14158 119 pp
Avail NTIS 1965

Electrical Power Generation Systems for Space Applications

Current and predicted state of the art of solar, chemical, and nuclear systems.

NASA SP-79
N65-25272 42 pp
Avail NTIS 1965

Short-Term Frequency Stability

Panel discussion on frequency stability measurement techniques. Symposium, November 1964.

NASA SP-80
N66-10381 296 pp
Avail NTIS 1965

Summary Report on the NASA University Program Review Conference

D. J. Montgomery

Nature, conduct, results, and impact of the program. Conference, March 1965.

NASA SP-81
N65-28249 42 pp
Avail NTIS 1965

Proceedings of the Fifth National Conference on the Peaceful Uses of Space

Space research impact on national economy and industry, communications, education, and science and technology. Conference, May 1965.

NASA SP-82
N66-30366 212 pp
Avail NTIS 1966

Conference on Aircraft Operating Problems

Conference on aircraft operational problems of general, supersonic, V/STOL and STOL aircraft. May 1965.

NASA SP-83
N65-31100 335 pp
Avail NTIS 1965

Bioenergetics of Space Suits for Lunar Exploration

E. M. Roth

Literature review.

NASA SP-84
N66-27235 145 pp
Avail NTIS 1966

NASA University Program Review Conference

Training, research, space flight, technology, facilities, and experimentation. Conference, March 1965.

NASA SP-85
N66-12401 375 pp
Avail NTIS 1965

Medical Aspects of an Orbiting Research Laboratory

S. P. Vinograd

Life support system recommendations, human reaction to medical experiments for orbital research laboratory. Space Medicine Advisory Group Study, August 1964.

NASA SP-86
N66-33199 152 pp
Avail NTIS 1966

Proceedings of the Apollo Unified S-Band Technical Conference

Tracking and communications system for Apollo spacecraft at lunar distances using S-band. Conference, July 1965.

NASA SP-87
N65-35476 277 pp
Avail NTIS 1965

NASA 1965 Summer Conference on Lunar Exploration and Science

Overall program for lunar exploration missions, role of various scientific disciplines in early Apollo missions, manned lunar orbiter and surface expeditions, post-Apollo programs. Conference, July 1965.

NASA SP-88
N66-14826 448 pp
Avail NTIS 1965

Observations From the Nimbus I Meteorological Satellite

NASA SP-89
N66-12130 92 pp
Avail NTIS 1965

Progress of the X-15 Research Airplane Program

Conference, October 1965.

NASA SP-90
N73-71303 133 pp
Avail NTIS 1965

Significant Achievements in Space Astronomy, 1958-1964

Space astronomy developments in x-ray, gamma-ray, ultraviolet, infrared, and low-frequency radio spectra.

NASA SP-91
N66-34786 71 pp
Avail NTIS 1966

Significant Achievements in Space Bioscience, 1958-1964

Research in exobiology, environmental biology, behavioral biology, molecular biology and bioinstrumentation, space flight programs, and manned space flight.

NASA SP-92
N66-17778 142 pp
Avail NTIS 1966

Significant Achievements in Space Communications and Navigation, 1958-1964

Reasons for and advantages of communications and navigation satellites.

NASA SP-93
N66-18458 73 pp
Avail NTIS 1966

Significant Achievements in Satellite Geodesy, 1958-1964

Satellite observations in geodetic surveying.

NASA SP-94
N66-37346 178 pp
Avail NTIS 1966

Significant Achievements in Ionospheres and Radio Physics, 1958-1964

E. R. Schmerling

NASA SP-95
N66-22936 68 pp
Avail NTIS 1966

Significant Achievements in Satellite Meteorology, 1958-1964

Meteorological satellite and sounding rocket configurations and instrumentation, cloud photography, radiometry, data acquisition and processing.

NASA SP-96
N66-19523 148 pp
Avail NTIS 1966

Significant Achievements in Particles and Fields, 1958-1964

Explorer satellite and Mariner space probe data on solar wind, radiation belts, trapped particles, geomagnetic field, cosmic rays, and neutrons.

NASA SP-97
N66-19524 99 pp
Avail NTIS 1966

Significant Achievements in Planetary Atmospheres, 1958-1964

Planetary and Earth atmospheric composition, temperature, and activity data from satellites and sounding rockets.

NASA SP-98
N66-19525 65 pp
Avail NTIS 1966

Significant Achievements in Planetology, 1958-1964

Terrestrial observations of lunar and planetary electromagnetic radiation and chemical-mineralogical composition, and space probe data and instrumentation.

NASA SP-99
N66-23475 81 pp
Avail NTIS 1964

Significant Achievements in Solar Physics, 1958-1964

Solar soft x-ray and ultraviolet mapping, hard x-ray emission, corona, satellite monitored radiation, and instrumentation study summaries for solar physics.

NASA SP-100
N66-25003 106 pp
Avail NTIS 1966

**Conference on Langley Research
Related to Apollo Mission**

Heating and thermal protection, landing dynamics, spacecraft simulation. Conference, June 1965.

NASA SP-101
N72-71553 413 pp
Avail NTIS 1965

**Philosophy of Simulation in a Man-
Machine Space Mission System**

T. M. Fraser

Nature of simulation; prerequisites for simulation; fidelity, realism, and transfer of training; use of manned simulators.

NASA SP-102
N66-27236 116 pp
Avail NTIS 1966

**Human Responses to Sustained
Acceleration**

T. M. Fraser

Review and bibliography of human response to sustained acceleration.

NASA SP-103
N66-27319 137 pp
Avail NTIS 1966

**Proceedings of a Conference on
Theoretical Biology**

G. J. Jacobs

Cell synthesis and ecology. Conference, November 1963.

NASA SP-104
N66-30395 211 pp
Avail NTIS 1966

**Vacuum Technology and Space
Simulation**

*D. H. Holkeboer, D. W. Jones,
F. Pagano, et al.*

Nomenclature, pressure, pressure gauges, pumping speed and systems, cryogenic pumping, gas load, outgassing of materials, leak detection, gas flow in components and systems, space simulation and vacuum systems.

NASA SP-105
N66-36129 331 pp
Avail GPO 1966

**The Dynamic Behavior of Liquids in
Moving Containers**

H. N. Abramson

Dynamic behavior of liquids in moving containers with applications to propellants in space vehicle fuel tanks.

NASA SP-106
N67-15884 479 pp
Avail NTIS 1966

**Proceedings of a Symposium on Passive
Gravity-Gradient Stabilization**

Passive gravity-gradient stabilization systems for satellites. Symposium, May 1965.

NASA SP-107
N66-36326 291 pp
Avail NTIS 1966

Spacecraft Sterilization Technology

Spacecraft sterilization requirements, microbiological contamination control, sterilization techniques. Conference, November 1965.

NASA SP-108
N67-14761 601 pp
Avail NTIS 1966

**Development of Small Animal Payload
and Integration with a Sounding
Rocket**

L. J. Early

NASA SP-109
N66-33540 110 pp
Avail NTIS 1966

**Involuntary Hypohydration in Man and
Animals: A Review**

J. E. Greenleaf

NASA SP-110
N66-23622 38 pp
Avail NTIS 1966

**Ranger VIII Photographs of the Moon:
Cameras "A," "B," and "P"**

Lunar photographs taken by Ranger VIII and photographic data tables.

NASA SP-111
N66-25366 478 pp
Avail GPO 1966

**Ranger IX Photographs of the Moon:
Cameras "A," "B," and "P"**

Ranger IX photographs of crater Alphonsus on lunar surface.

NASA SP-112
N66-26555 193 pp
Avail NTIS 1966

**Dynamic Stability of Rotor-Bearing
Systems**

E. J. Gunter, Jr.

NASA SP-113
N67-11942 234 pp
Avail NTIS 1966

Space Technology. Volume VI: Space Sciences

T. A. Farley

Geomagnetism, solar and galactic cosmic rays, comets, influence on Earth environment.

NASA SP-114
N67-18141 90 pp
Avail NTIS 1966

Second Symposium on the Role of the Vestibular Organs in Space Exploration

Vestibular changes, human equilibrium and orientation, adaptation of gravito-inertial receptor mechanisms during space missions. Symposium, January 1966.

NASA SP-115
N67-15121 315 pp
Avail NTIS 1966

Conference on V/STOL and STOL Aircraft

Aerodynamic and performance characteristics, handling qualities, and propulsion systems for STOL, VTOL, and V/STOL aircraft. Conference, April 1966.

NASA SP-116
N66-24606 461 pp
Avail NTIS 1966

Space Cabin Atmospheres. Part III: Physiological Factors of Inert Gases

E. M. Roth

NASA SP-117
N67-22878 135 pp
Avail NTIS 1967

Space Cabin Atmospheres. Part IV: One- Versus Multiple-Gas Systems

E. M. Roth

Physiological factors, hardware, and environmental control tradeoffs for one and two gas systems of space cabin atmospheres.

NASA SP-118
N67-29998 138 pp
Avail NTIS 1967

Ariel I: The First International Satellite. Experimental Results

Structural design, experimental data, tracking.

NASA SP-119
N67-16514 163 pp
Avail NTIS 1966

Fuel Cells

L. G. Austin

Review of government-sponsored fuel cell research, 1950-1964.

NASA SP-120
N67-40137 451 pp
Avail NTIS 1967

Gemini Midprogram Conference

Spacecraft and launch vehicle development and performance, flight operations, mission results, physical science and biomedical experiments. Conference, February 1966.

NASA SP-121
N66-29626 417 pp
Avail NTIS 1966

Summary Report on the NASA-Western University Conference

D. E. Cunningham

Conference, November 1965.

NASA SP-122
N67-11943 55 pp
Avail NTIS 1966

Nuclear Rocket Technology Conference

Graphite nuclear rocket and tungsten water-moderated nuclear rocket. Conference, April 1966.

NASA SP-123
N73-70969 325 pp
Avail NTIS 1966

Conference on Aircraft Aerodynamics

Experimental techniques; stability and control; propulsion aerodynamics; subsonic, supersonic, and transonic aerodynamics. Conference, May 1966.

NASA SP-124
N75-71754 611 pp
Avail NTIS 1966

Design of Liquid Propellant Rocket Engines

D. H. Huang, D. K. Huzel

Parameters for design of rocket engines and systems.

NASA SP-125
N71-29405 461 pp
Avail NTIS 1971

Surveyor I: A Preliminary Report

Surveyor I preliminary data on lunar surface mechanical, thermal, and electrical properties, topography, and geology.

NASA SP-126
N66-29481 50 pp
Avail NTIS 1966

Astronomy in Space

*G. E. Mueller, H. E. Newell,
N. G. Roman, et al.*

NASA space science astronomy program: orbiting satellite experiments for solar, stellar, and galactic observations.

NASA SP-127
N67-18730 67 pp
Avail NTIS 1967

Second Annual NASA-University Conference on Manual Control

Discrete and continuous models, multi-variable and adaptive control, information theory, design methods. Conference, March 1966.

NASA SP-128
N67-15850 422 pp
Avail NTIS 1966

Earth Photographs From Gemini III, IV, and V

Earth color photographs from Gemini III, IV, and V indicating terrain features and cloud systems.

NASA SP-129
N67-26641 262 pp
Avail GPO 1967

A Review of the Mariner IV Results

O. W. Nicks

Data on Mars, solar system, and interplanetary space flight.

NASA SP-130
N67-31356 42 pp
Avail NTIS 1967

Space Power Systems Advanced Technology Conference

Chemical and nuclear power, reactor heat sources, and power conversion. Conference, August 1966.

NASA SP-131
N67-10261 295 pp
Avail NTIS 1966

Aerospace Measurement Techniques

G. G. Mannella

Advanced aerospace technology measurement techniques and instrumentation. Symposium, July 1966.

NASA SP-132
N67-17781 280 pp
Avail NTIS 1967

Scientific Satellites

Equipment, instrumentation, communications, design, launch vehicles, and guidance of scientific satellites.

NASA SP-133
N68-14965 828 pp
Avail GPO 1967

Conference on the Closed Life Support System

Water purification, waste disposal, and food synthesis for space flights. Conference, April 1966.

NASA SP-134
N67-34583 231 pp
Avail NTIS 1967

Meteor Orbits and Dust: Proceedings of a Symposium

G. S. Hawkins

Concentrations and orbital calculations of meteors and meteoritic and extraterrestrial dust particles. Symposium, August 1965.

NASA SP-135
N67-32038 437 pp
Avail NTIS 1967

Significant Achievements in Space Science, 1965

H. E. Newell

NASA SP-136
N67-19022 222 pp
Avail NTIS 1967

Significant Achievements in Space Applications, 1965

Space satellite application in communications, navigation, geodesy, and meteorology.

NASA SP-137
N67-18724 91 pp
Avail NTIS 1966

Gemini Summary Conference

Rendezvous, docking, extravehicular activity, experiment results. Conference, February 1967.

NASA SP-138
N68-14941 335 pp
Avail NTIS 1967

Mariner-Mars 1964: Final Project Report

Mariner-Mars 1964 mission accomplishments.

NASA SP-139
N68-18743 356 pp
Avail NTIS 1967

Interstellar Grains

J. M. Greenberg, T. P. Roark

Observational and theoretical interpretations of interstellar grains. Conference, August 1965.

NASA SP-140
N68-11456 275 pp
Avail GPO 1967

First Compilation of Papers on Trajectory Analysis and Guidance Theory

Mathematical models to approximate functions, bounds and power series for three-body problems, satellite orbit theories, and other aspects of trajectory analysis and guidance theory.

NASA SP-141
N67-29370 227 pp
Avail NTIS 1967

A Survey of Space Applications

NASA program for application of space science and technology to public sector.

NASA SP-142
N67-23338 140 pp
Avail GPO 1967

Oxide Dispersion Strengthened Alloys

N. J. Grant, R. W. Hall, H. J. Siegel

State-of-the-art survey on oxide dispersion strengthened alloys for use as high temperature materials.

NASA SP-143
N67-37477 30 pp
Avail NTIS 1967

Third Annual NASA-University Conference on Manual Control

Display devices, function models, decision processes, physiological modeling, computer processing of manual control records. Conference, March 1967.

NASA SP-144
N68-15901 435 pp
Avail NTIS 1967

A Survey of Attitude Sensors for Spacecraft

N. M. Hatcher

Spacecraft attitude sensors design and operational features, horizon scanners, solar sensors, star trackers, space sextants, and map matchers.

NASA SP-145
N67-31296 21 pp
Avail NTIS 1967

Surveyor III: A Preliminary Report

Preliminary observations from Surveyor III soft Moon landing, telemetered pictures and data on mechanical soil sampler, lunar surface properties.

NASA SP-146
N67-32582 170 pp
Avail NTIS 1967

Sonic Boom Research

A. R. Seebass

Conference, April 1967.

NASA SP-147
N68-21413 115 pp
Avail NTIS 1967

Conference on Hypersonic Aircraft Technology

Mission studies, configuration aerodynamics, hypersonic viscous flow, propulsion, structures and materials. Conference, May 1967.

NASA SP-148
N74-73049 591 pp
Avail NTIS 1967

Summary of Gemini Extravehicular Activity

R. M. Macbell

NASA SP-149
N68-15891 336 pp
Avail NTIS 1967

The Zodiacal Light and the Interplanetary Medium

J. L. Weinberg

Photometric and meteor observations, scattering properties, particle collection and impact, solar wind, and origin and evolution of zodiacal light in interplanetary medium. Conference, February 1967.

NASA SP-150
N68-27475 395 pp
Avail NTIS 1967

Relay Program Final Report

Summary of operation, communications, and other experiments of Relay II satellite.

NASA SP-151
N69-21065 368 pp
Avail GPO 1968

Third Symposium on the Role of the Vestibular Organs in Space Exploration

Symposium, January 1967.

NASA SP-152
N68-29128 437 pp
Avail NTIS 1968

Symposium on Computer Simulation of Plasma and Many-Body Problems

Plasma physics, Vlasov theory, astrophysics, magnetohydrodynamics, many-body problems, and computer simulation. Symposium, April 1967.

NASA SP-153
N67-37737 465 pp
Avail NTIS 1967

Aerospace Electronic Systems Technology: A Briefing for Industry

Conference, May 1967.

NASA SP-154
N68-33169 319 pp
Avail NTIS 1967

Significant Achievements in Space Science, 1966

Advances in astronomy, exobiology, ionospheric sciences, radio and solar physics, planetary atmospheres, and planetology.

NASA SP-155
N68-15748 224 pp
Avail GPO 1967

Significant Achievements in Space Applications, 1966

R. H. McQuain

Achievements of application technology satellites, communication satellites, navigation and traffic control satellite program, weather satellites, and satellite geodesy.

NASA SP-156
N68-16015 97 pp
Avail NTIS 1967

1967 Summer Study of Lunar Science and Exploration

W. N. Hess

Future of lunar manned and unmanned exploration and Apollo applications program.

NASA SP-157
N67-40564 405 pp
Avail NTIS 1967

The Potential Applications of Satellite Geodetic Techniques to Geosciences

Potential applications of geodetic satellites to geology, oceanography, glaciology, and atmospheric physics.

NASA SP-158
N68-18902 26 pp
Avail NTIS 1968

Recent Advances in Display Media

Properties and imaging techniques of various display devices: computer-directed visual flight control boards, integrated optical machine systems, and electro-optical methods. Symposium, September 1967.

NASA SP-159
N68-22302 129 pp
Avail NTIS 1963

Vibration of Plates

A. W. Leissa

Tabulated numerical results of theories of plate vibration.

NASA SP-160
N70-18461 360 pp
Avail GPO 1969

Biology of Hard Tissue: Proceedings of the Second Conference

A. M. Budy

Bone diseases and regeneration, cellular differentiation, and homeostasis of calcium. Conference, March 1966.

NASA SP-161
N69-10444 399 pp
Avail GPO 1968

Objectives and Goals in Space Science and Applications, 1968

J. E. Naugle

Objectives, current programs, and future mission options in space sciences and applications.

NASA SP-162
N69-13844 97 pp
Avail GPO 1968

Surveyor V: A Preliminary Report

Configuration, television picture transmission, and experiments on measuring chemical elements in lunar surface.

NASA SP-163
N68-17844 162 pp
Avail NTIS 1967

Thermal Radiation Heat Transfer

J. R. Howell, R. Siegel

Volume 1. The Blackbody, Electromagnetic Theory, and Material Properties

NASA SP-164
N68-28530 194 pp
Avail NTIS 1968

Volume II. Radiation Exchange Between Surfaces and in Enclosures

NASA SP-164
N69-30317 290 pp
Avail GPO 1969

Volume III. Radiation Transfer With Absorbing, Emitting, and Scattering Media

NASA SP-164
N71-30941 362 pp
Avail GPO 1971

Bioregenerative Systems

Bioregenerative life support systems for long duration space flights; hydrogenomonas biosynthesis and algae photosynthesis processes. Conference, November 1966.

NASA SP-165
N68-26207 152 pp
Avail NTIS 1968

Surveyor VI: A Preliminary Report

Surveyor VI scientific data analysis.

NASA SP-166
N68-21443 173 pp
Avail NTIS 1968

Significant Achievements in Space Science, 1967

Stellar astronomy, bioscience, ionospheres, planetology, particles and fields, solar physics, and planetary atmospheres.

NASA SP-167
N69-25460 548 pp
Avail GPO 1968

Exploring Space With a Camera

E. M. Cortright

Spaceborne photography of cloud cover and other meteorological phenomena, Surveyor and Orbiter lunar shots, and Gemini space walk and target docking.

NASA SP-168
N68-34870 227 pp
Avail GPO 1968

Protection Against Space Radiation

K. O'Brien, A. Reetz, Jr.

Space radiation transport, spacecraft shielding design and advanced concepts, and methods for calculating radiation penetration through protective shields. Conference, June 1967.

NASA SP-169
N68-26128 627 pp
Avail NTIS 1968

Numerical Analysis

R. H. Wilson, Jr.

Numerical analysis applications to aerospace and related problems. Conference, January 1968.

NASA SP-170
N68-33245 46 pp
Avail NTIS 1968

Earth Photographs From Gemini VI Through XII

Color photographs of Earth taken during Gemini flights VI through XII.

NASA SP-171
N69-28909 335 pp
Avail GPO 1968

Batteries for Space Power Systems

P. Bauer

NASA development work on high efficiency batteries for space electric power systems.

NASA SP-172
N69-18042 314 pp
Avail NTIS 1968

Surveyor VII: A Preliminary Report

Principal scientific results on Surveyor VII lunar mission.

NASA SP-173
N68-33553 304 pp
Avail NTIS 1968

Conference on Electromagnetic Exploration of the Moon: June 11-13, 1968. Report of the Program Evaluation Committee

Proposed electromagnetic exploration of Moon. Conference, June 1968.

NASA SP-174
N69-33595 27 pp
Avail NTIS 1969

EXAMETNET Data Report Series Annual Report, 1966

Rocket sounding meteorological data of EXAMETNET for 1966.

NASA SP-175
N69-16214 190 pp
Avail NTIS 1968

EXAMETNET Data Report Series Annual Report, 1967

EXAMETNET meteorological rocket launchings and data dissemination, with tables.

NASA SP-176
N69-22570 188 pp
Avail NTIS 1969

Proceedings of the Working Group on Extraterrestrial Resources

Lunar environment, bases, exploration, and extraterrestrial resources. Conference, February 1968.

NASA SP-177
N69-22226 247 pp
Avail NTIS 1968

Langley, Ames, Lewis, and Flight Research Center Support of DOD VFAX/FX Projects Progress Report

NASA SP-178
X70-11968 186 pp
1968

The Book of Mars

S. Glasstone

Observations and theoretical studies of Mars properties.

NASA SP-179
N69-16571 307 pp
Avail GPO 1968

Second Conference on Sonic Boom Research

I. R. Schwartz

Sonic boom reduction in supersonic transport flight. Shock wave propagation and refraction, prediction methods for acoustic attenuation, aerodynamic engineering aspects. Conference, May 1968.

NASA SP-180
N68-34907 218 pp
Avail NTIS 1968

Interdisciplinary Approach to Friction and Wear

P. M. Ku

Structure, interactions, and topography of solid surfaces, sliding friction, adhesion, wear, and boundary lubrication. Conference, November 1967.

NASA SP-181
N69-30401 489 pp
Avail GPO 1968

Problems and Programs on the Use of Submillimeter Waves in Space

M. R. Nagel

Uses of submillimeter waves in aerospace technology, with bibliography.

NASA SP-182
N68-35522 49 pp
Avail NTIS 1968

Some Fluid Mechanical Problems Related to Subsonic and Supersonic Aircraft

J. T. Howe

NASA SP-183
N69-10693 24 pp
Avail NTIS 1968

Surveyor: Program Results

Summary of lunar data and scientific observations generated by Surveyor landings on Moon.

NASA SP-184
N69-36451 432 pp
Avail GPO 1969

A Study of NASA University Programs

NASA university programs in personnel training, aeronautics and space research, and laboratories and research centers.

NASA SP-185
N68-35564 85 pp
Avail NTIS 1968

Theories of Equilibrium Figures of a Rotating Homogeneous Fluid Mass

Y. Hagibara

Theory of equilibrium figures of rotating, homogeneous, incompressible fluid mass as applied to cosmology.

NASA SP-186
N71-33591 174 pp
Avail GPO 1970

Fourth Symposium on the Role of the Vestibular Organs in Space Exploration

Etiology, symptomatology, and treatment of motion sickness with respect to vestibular organ and related neurological functions. Symposium, September 1968.

NASA SP-187
N70-30699 393 pp
Avail GPO 1970

CO₂: Chemical, Biological, and Physiological Aspects

*J. T. Edsall, R. E. Forster,
A. B. Otis, et al.*

Molecular structure of carbonic anhydrase, enzymatic carboxylation, and respiratory gas exchange.

NASA SP-188
N70-23290 242 pp
Avail GPO 1969

Progress of NASA Research Relating to Noise Alleviation of Large Subsonic Jet Aircraft

Nacelle acoustic linings, sound generation in jet engines, operational noise effects on humans. Conference, October 1968.

NASA SP-189
N69-11542 691 pp
Avail NTIS 1968

Mariner-Venus, 1967: Final Project Report

Results and tracking and data acquisition for Mariner-Venus 1967 and Mariner-Venus 1967 extension projects.

NASA SP-190
N72-20809 310 pp
Avail GPO 1971

Average Evoked Potentials: Methods, Results, and Evaluations

E. Donchin, D. B. Lindsay

Methods, results, and evaluation of research in average evoked potentials. Conference, September 1968.

NASA SP-191
N70-16876 410 pp
Avail GPO 1969

Fourth Annual NASA-University Conference on Manual Control

Mathematical models of human performance in manual control of man-machine systems. Conference, March 1968.

NASA SP-192
N70-14876 573 pp
Avail NTIS 1969

Evaluation of Motion-Degraded Images

Optical filters and digital methods for blurring removal from photographic imagery. Conference, December 1968.

NASA SP-193
N69-33322 178 pp
Avail GPO 1969

Liquid Propellant Rocket Combustion Instability

D. T. Harrie

Combustion instability in liquid propellant rocket engines.

NASA SP-194
N72-33729 659 pp
Avail GPO 1972

Significant Accomplishments in Science: Goddard Space Flight Center, 1968

Investigation of Earth atmospheric composition, geomagnetism, extraterrestrial radiation, solar activity, and planetary atmospheres by satellite experiment and astronomical observations. Symposium, January 1969.

NASA SP-195
N69-38951 196 pp
Avail NTIS 1969

NASA Science and Technology Advisory Committee for Manned Space Flight: Proceedings of the Winter Study on Uses of Manned Space Flight 1975-1985

Manned space flight capabilities for lunar and planetary explorations and Earth orbiting stations.

Volume I. Proceedings
NASA SP-196
N69-22510 45 pp
Avail NTIS 1969

Volume II. Appendixes
NASA SP-196
N70-17026 177 pp
Avail NTIS 1969

Lunar Orbiter I, Preliminary Results: Lunar Terrain Assessment and Selenodesy, Micrometeoroid, and Radiation Data

G. W. Brewer, J. K. Hughes

Lunar Orbiter I terrain assessment photographs and preliminary selenodesy, micrometeoroid, and radiation data.

NASA SP-197
N69-39213 147 pp
Avail NTIS 1969

Atlas of Cometary Forms: Structures Near the Nucleus

B. Donn, J. Rahe, K. Wurm

Atlas of drawings and photographs of comets.
NASA SP-198
N70-12260 135 pp
Avail GPO 1969

Lectures in High-Energy Astrophysics

H. B. Oegelmann, J. R. Wayland, Jr.

High-energy cosmic radiation problems.
NASA SP-199
N69-29652 170 pp
Avail NTIS 1969

The Moon as Viewed by Lunar Orbiter

F. El-Baz, L. J. Kosofsky

Selected compilation of Lunar Orbiter photographs showing salient features of lunar surface.

NASA SP-200
N70-30817 156 pp
Avail GPO 1970

Analysis of Apollo 8 Photography and Visual Observations

Apollo 8 observations of lunar topography.
NASA SP-201
N70-14366 403 pp
Avail GPO 1969

Aerospace Food Technology

Operational and technological problems of improvement in space flight feeding for future manned space missions. Conference, April 1969.

NASA SP-202
N70-33835 215 pp
Avail NTIS 1970

Introduction to Abstract Analysis

M. E. Goldstein, B. M. Rosenbaum

Introduction to abstract analysis by definitions and proofs.

NASA SP-203
N70-21801 257 pp
Avail GPO 1969

The Experiments of Biosatellite II

J. F. Saunders

Experiments with invertebrates, plants, and cellular systems on Biosatellite II flight.

NASA SP-204
N72-20048 358 pp
Avail GPO 1971

Biotechnology

Biotechnological problems on man-machine systems required for long duration space flights. Conference, August 1967.

NASA SP-205
N71-28526 283 pp
Avail GPO 1971

Lunar Orbiter Photographic Atlas of the Moon

D. E. Bowker, J. K. Hughes

Atlas of reconstructed lunar photographs taken by Lunar Orbiters during 1966 and 1967.

NASA SP-206
N73-13879 723 pp
Avail GPO 1971

Basic Aerodynamic Noise Research

I. R. Schwartz

Aerodynamic noise related to aircraft propulsion systems. Conference, July 1969.

NASA SP-207
N70-22850 540 pp
Avail GPO 1969

The Prevention of Electrical Breakdown in Spacecraft

D. Burrowbridge, F. W. Paul

NASA SP-208
N70-18656 103 pp
Avail NTIS 1969

Applications of Research on Human Decision Making

*R. M. Patton, J. A. Swets,
T. A. Tanner, Jr.*

Human decision making in manned space flight including topics of memory models, signal detection, and pilot performance. Symposium, February 1968.

NASA SP-209
N70-22743 198 pp
Avail GPO 1970

Electric Propulsion Mission Analysis Nomenclature and Terminology

Terminology for establishing system parameters of electric propulsion mission analysis.

NASA SP-210
N70-11179 15 pp
Avail NTIS 1969

Future Fields of Control Application

Application of control theory to production engineering, transportation systems, urban development, biological oceanography, mass communications, and socio-economic problems. Conference, February 1969.

NASA SP-211
N69-39957 144 pp
Avail NTIS 1969

Progress of NASA Research on Warm Fog Properties and Modification Concepts

Research on warm fog properties and dispersal concepts. Symposium, February 1969.

NASA SP-212
N69-39526 127 pp
Avail NTIS 1969

A Long-Range Program in Space Astronomy: Position Paper of the Astronomy Missions Board

R. O. Doyle

Potential for advancement of astronomy by space programs.

NASA SP-213
N69-41150 316 pp
Avail GPO 1969

Apollo 11: Preliminary Science Report

Preliminary scientific observations of Apollo 11 mission.

NASA SP-214
N70-10030 209 pp
Avail NTIS 1969

Fifth Annual NASA-University Conference on Manual Control

Studies on display systems, optimal control methods, human performance theory, and neuromuscular models. Conference, March 1969.

NASA SP-215
N70-30877 720 pp
Avail NTIS 1970

Compressible Turbulent Boundary Layers

Compressibility of turbulent boundary layers: skin friction, heat transfer, flow velocity, temperature distribution, pressure gradients, and aerodynamic drag prediction methods. Conference, December 1968.

NASA SP-216
N70-10426 572 pp
Avail NTIS 1969

Optical Space Communication

S. Karp, R. S. Kennedy

Results of workshop on optical communication systems for space applications.

NASA SP-217
N70-18087 154 pp
Avail NTIS 1969

Analysis of a Jet in a Subsonic Crosswind

Jet exhaust flow effects on aerodynamic characteristics of V/STOL aircraft during transition flight. Conference, September 1969.

NASA SP-218
N70-11826 242 pp
Avail NTIS 1969

Status of Passive Inflatable Falling-Sphere Technology for Atmospheric Sensing to 100 km

Symposium, September 1969.

NASA SP-219
N70-18570 307 pp
Avail NTIS 1969

NASA Acoustically Treated Nacelle Program

Program to reduce jet aircraft noise. Conference, October 1969.

NASA SP-220
N70-13901 160 pp
Avail NTIS 1969

The NASTRAN Theoretical Manual

R. H. MacNeal

Finite element computer program for structural analysis.

NASA SP-221
N70-42934 480 pp
Avail COSMIC 1970

The NASTRAN Theoretical Manual (Level 15.0)

NASA SP-221 (01)
N72-29920 601 pp
Avail COSMIC 1972

The NASTRAN Theoretical Manual (Level 16)

NASA SP-221 (03)
N76-73931 751 pp
Avail COSMIC 1976

The NASTRAN Theoretical Manual (Level 17)

NASA SP-221 (04)
Avail COSMIC 1979

The NASTRAN User's Manual

C. W. McCormick

User manual for NASA structural analysis program to describe structural modeling techniques and computer programming operations.

NASA SP-222
N70-41755 812 pp
Avail COSMIC 1970

The NASTRAN User's Manual (Level 15.0)

NASA SP-222 (01)
N72-29921 1540 pp
Avail COSMIC 1973

The NASTRAN User's Manual (cont.)

The NASTRAN User's Manual (Level 16)

NASA SP-222 (03)
N76-73933 1240 pp
Avail COSMIC 1976

The NASTRAN User's Manual (Level 17)

NASA SP-222 (04)
N80-26694 867 pp
Avail COSMIC 1979

The NASTRAN User's Manual (Level 17.5)

NASA SP-222 (05)
Avail COSMIC 1980

The NASTRAN Programmer's Manual

F. J. Douglas

Digital computer programs for analysis of large complex structures.

NASA SP-223
N70-43143 1514 pp
Avail COSMIC 1970

The NASTRAN Programmer's Manual (Level 15.0)

NASA SP-223 (01)
N73-17892 2309 pp
Avail COSMIC 1972

The NASTRAN Programmer's Manual (Level 16)

NASA SP-223 (03)
N78-29505 3444 pp
Avail COSMIC 1976

The NASTRAN Demonstration Problem Manual

NASA SP-224
N70-41756 134 pp
Avail COSMIC 1970

The NASTRAN Demonstration Problem Manual (Level 15.0)

NASA SP-224 (01)
N72-29919 187 pp
Avail COSMIC 1972

The NASTRAN Demonstration Problem Manual (Level 16)

NASA SP-224 (03)
N76-74317 259 pp
Avail COSMIC 1976

The NASTRAN Demonstration Problem Manual (Level 17.5)

NASA SP-224 (05)
Avail COSMIC 1980

Mariner-Mars 1969: A Preliminary Report

Scientific data from Mariners 6 and 7 Mars flyby missions during 1969.

NASA SP-225
N70-18343 148 pp
Avail NTIS 1969

Plasmas and Magnetic Fields in Propulsion and Power Research

Conference, October 1969.

NASA SP-226
N70-18726 253 pp
Avail NTIS 1970

Aerospace Structural Materials

Development of aerospace structural materials: heat-resistant alloys, refractory materials, transition metals, and composite materials. Conference, November 1969.

NASA SP-227
N70-20860 334 pp
Avail NTIS 1970

Analytic Methods in Aircraft Aerodynamics

Analysis of aircraft aerodynamic characteristics. Symposium, October 1969.

NASA SP-228
N70-21351 750 pp
Avail NTIS 1970

Proceedings of the 7th Annual Meeting of the Working Group on Extraterrestrial Resources

Lunar water detection and removal, soil adhesion and friction, and other lunar and planetary resources recovery. Conference, July 1969.

NASA SP-229
N70-39276 148 pp
Avail GPO 1970

Ecological Surveys from Space

Spaceborne photography using different combinations of film and filters for Earth resources surveys.

NASA SP-230
N70-26981 80 pp
Avail GPO 1970

EXAMETNET Data Report Series Annual Report, 1968

Meteorological rocket launchings and data dissemination for 1968 from EXAMETNET.

NASA SP-231
N70-29741 184 pp
Avail NTIS 1970

Analysis of Apollo 10 Photography and Visual Observations

Lunar geology, crater, and volcanic feature analysis from Apollo 10 visual observations and photo interpretations.

NASA SP-232
N71-27871 231 pp
Avail GPO 1971

Optical Telescope Technology

Design optics and technology for large spaceborne astronomical telescopes. Workshop, May 1969.

NASA SP-233
N70-36676 795 pp
Avail NTIS 1970

Portable Life Support Systems

Portable life support and environmental control systems. Conference, May 1969.

NASA SP-234
N70-28501 380 pp
Avail NTIS 1970

Apollo 12: Preliminary Science Report

Preliminary scientific analyses of Apollo 12 ALSEP data, lunar photographs, and returned materials.

NASA SP-235
N70-35271 235 pp
Avail NTIS 1970

Research on Uranium Plasmas and Their Technological Applications

R. T. Schneider, K. Thom

Uranium plasmas applied to nuclear rocket engines, MHD generators, nuclear lasers, and plasma stability and flow. Symposium, January 1970.

NASA SP-236
N71-33626 503 pp
Avail GPO 1971

Interdisciplinary Approach to the Lubrication of Concentrated Contacts

P. M. Ku

Lubrication, wear, and design aspects of rolling contact bearings. Symposium, July 1969.

NASA SP-237
N71-26826 595 pp
Avail GPO 1970

Apollo 11 Mission Report

Apollo 11 postflight analysis and mission report.

NASA SP-238
N71-25042 228 pp
Avail NTIS 1970

Kinetics and Thermodynamics in High-Temperature Gases

Conference on kinetics and thermodynamics of combustion and high-temperature gases. Conference, March 1970.

NASA SP-239
N70-32106 150 pp
Avail NTIS 1970

The Mixed State of Superconductors

W. R. Hudson

Mathematical models for mixed state of superconductors.

NASA SP-240
N71-10415 73 pp
Avail GPO 1970

Atlas and Gazetteer of the Near Side of the Moon

*G. L. Gutschewski, D. C. Kinsler,
E. Whitaker*

Atlas of annotated Lunar Orbiter 4 photographs of near side of Moon, with gazeteer.

NASA SP-241
N72-18820 539 pp
Avail GPO 1971

Guide to Lunar Orbiter Photographs

T. P. Hansen

Lunar Orbiter photographs and maps, missions 1 through 5.

NASA SP-242
N71-36179 254 pp
Avail GPO 1970

Introduction to Experimental Techniques of High-Energy Astrophysics

H. Oegelman, J. R. Wayland

Measurements of cosmic rays and high-energy extraterrestrial particles.

NASA SP-243
N71-11415 259 pp
Avail NTIS 1970

Power Processing

F. C. Schwarz

Electrical engineering aspects of electric power processing and component technology.

NASA SP-244
N72-15229 53 pp
Avail GPO 1971

Recent Advances in Refractory Alloys for Space Power Systems Conference Papers

Evaluation of refractory tantalum-, tungsten-, niobium-, and molybdenum-based alloys for space power systems applications. Conference, June 1969.

NASA SP-245
N71-13301 299 pp
Avail NTIS 1970

Lunar Photographs From Apollos 8, 10, and 11

R. G. Musgrove

A catalog.
NASA SP-246
N71-29260 24 pp
Avail GPO 1971

The Development of Cryogenic Storage Systems for Space Flight

*R. K. Allgeier, Jr., M. L. Davis,
T. G. Rogers, et al.*

Development of cryogenic storage systems for manned space flight.

NASA SP-247
N71-30910 132 pp
Avail GPO 1970

Holographic Instrumentation Applications

R. M. Brown, B. Ragent

Investigating possibilities and limitations of applying holographic techniques to aerospace technology. Conference, January 1970.

NASA SP-248
N71-12776 249 pp
Avail NTIS 1970

Cosmic Gamma Rays

F. W. Stecker

Cosmic gamma ray production processes, galactic and extragalactic gamma rays, and cosmology.

NASA SP-249
N71-24764 231 pp
Avail GPO 1971

This Island Earth

O. W. Nicks

Spaceborne photographs of Earth atmosphere, lands, and waters with photographs of Sun, Moon, and planets.

NASA SP-250
N71-12566 192 pp
Avail GPO 1970

Significant Accomplishments in Science and Technology: Goddard Space Flight Center, 1969

Aerospace scientific and technological studies in 1969 for satellite systems and spacecraft missions.

NASA SP-251
N71-25256 376 pp
Avail NTIS 1970

The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems. Volume I

Plasma sheath diagnostics and reduction for improved reentry communication. Symposium, October 1970.

NASA SP-252
N71-21101 614 pp
Avail NTIS 1970

The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems. Volume 2

Conference on entry plasma sheath and effects on space vehicle electromagnetic systems.

NASA SP-253 132 pp
X71-10400 1970

The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems.

Classified document.

NASA SP-254 122 pp
X71-76576 1971

Third Conference on Sonic Boom Research

I. R. Schwartz

Prediction methods for sonic boom generation and propagation with overpressure minimization in supersonic transport design and operation. Conference, October 1970.

NASA SP-255 431 pp
N71-28363 1971
Avail GPO

Astronomical Use of Television-Type Image Sensors

V. R. Boscarino

Use of TV-type image sensors in astronomical photometry. Symposium, May 1970.

NASA SP-256 217 pp
N71-28509 1971
Avail NTIS

A Search for Carbon and Its Compounds in Lunar Samples From Mare Tranquillitatis

K. A. Kvenvolden, C. Ponnampuruma

Determination of carbon content of lunar samples from Apollo 11 flight.

NASA SP-257 127 pp
N71-17964 1970
Avail NTIS

Performance and Dynamics of Aerospace Vehicles

Performance, dynamics, and design of aeronautical and space vehicles.

NASA SP-258 670 pp
N71-24701 1971
Avail NTIS

Aircraft Propulsion

Conference, November 1970.

NASA SP-259 463 pp
N71-19451 1971
Avail NTIS

NASTRAN: A Summary of the Functions and Capabilities of the NASA Structural Analysis Computer System

T. G. Butler, D. Michel

Description of general purpose digital computer program for analysis of elastic structures under various loading conditions using finite element method approach.

NASA SP-260 27 pp
N71-21559 1971
Avail NTIS

Preliminary Results From an Operational 90-Day Manned Test of a Regenerative Life Support System

D. C. Grana, A. O. Pearson

Data from 90-day manned test of regenerative life support system in space station simulator. Symposium, November 1970.

NASA SP-261 579 pp
N71-20951 1971
Avail NTIS

Animal Orientation and Navigation

S. R. Galler, K. Schmidt-Koenig, G. J. Jacobs, et al.

Animal orientation and navigation capabilities. Symposium, September 1970.

NASA SP-262 586 pp
N72-25062 1972
Avail GPO

The Mariner 6 and 7 Pictures of Mars

S. A. Collins, Jr.

Mariner 6 and 7 imagery photographs of Mars.

NASA SP-263 168 pp
N73-13878 1971
Avail GPO

Barium Releases at Altitudes Between 200 and 1000 Kilometers: A Joint MPI-NASA Experiment

D. Adamson, H. T. Baber, Jr., K. H. Crumbly

Barium releases from Javelin and Nike-Tomahawk sounding rockets for ion cloud study of Earth electric and magnetic fields.

NASA SP-264 145 pp
N71-29671 1971
Avail NTIS

Report of the Joint DOT-NASA Civil Aviation R&D Policy Study, March 1971

Review of policies affecting civil aviation, problems confronting it, and potential for future contributions to national benefit.

NASA SP-265 104 pp
N71-30506 1971
Avail NTIS

Joint DOT-NASA Civil Aviation Policy Study (Supporting Papers)

Civil aviation research and development projects noting characteristics and growth to date, current problems, future requirements, potential solutions, and recommendations.

NASA SP-266
N71-30507 248 pp
Avail NTIS 1971

Physical Studies of the Minor Planets

T. Gebrels

Astronomical observations of asteroids. Conference, March 1971.

NASA SP-267
N72-25753 713 pp
Avail GPO 1971

The Pioneer Mission to Jupiter

Planning for Pioneer interplanetary missions with Jupiter flyby.

NASA SP-268
N71-32366 48 pp
Avail GPO 1971

Hypogravic and Hypodynamic Environments

M. McCally, R. H. Murray

Aerospace environments, manned space flight, weightlessness simulation, musculo-skeletal and cardiovascular systems, bone loss, mineral metabolism, and hematology. Conference, July 1969.

NASA SP-269
N71-33251 380 pp
Avail NTIS 1971

NASA Aircraft Safety and Operating Problems. Volume 1

Conference, May 1971.

NASA SP-270
N71-30756 444 pp
Avail NTIS 1971

NASA Aircraft Safety and Operating Problems. Volume 2

NASA aircraft safety and operational problems of high altitude supersonic cruise aircraft. Conference, May 1971.

NASA SP-271 50 pp
X71-10673 1971

Apollo 14 Preliminary Science Report

Lunar topographic, geologic, magnetic field, gravitation, and atmospheric data from Apollo 14 experiments and photography.

NASA SP-272
N71-30953 313 pp
Avail GPO 1971

Computer Program for Calculation of Complex Chemical Equilibrium Composition, Rocket Performance, Incident and Reflected Shocks, and Chapman-Jouguet Detonations

S. Gordon, B. J. McBride

Equations and computer program for calculating chemical equilibria in thermodynamic states of complex systems.

NASA SP-273
N71-37775 250 pp
Avail NTIS 1971

A Compilation of Nondimensional Numbers

N. S. Land

Identification and compilation of named nondimensional numbers used in technical areas.

NASA SP-274
N72-23982 126 pp
Avail GPO 1972

Monitoring Earth Resources from Aircraft and Spacecraft

R. N. Colwell

Procedures and techniques for determining Earth resources from high altitude aircraft and Apollo 9 photographs.

NASA SP-275
N72-18331 203 pp
Avail GPO 1971

Spacecraft Charge Buildup Analysis

*H. W. Bilsky, J. V. Gore,
M. A. Kasha, et al.*

Design and characteristics of spacecraft propulsion system using charge buildup and electric propulsion techniques.

NASA SP-276
N71-32812 40 pp
Avail NTIS 1971

Friction, Wear, and Lubrication in Vacuum

D. H. Buckley

Friction, wear, and lubrication of metals, nonmetal compounds, and polymers in vacuum environment.

NASA SP-277
N72-20451 192 pp
Avail NTIS 1971

The Interplanetary Pioneers. Volume I. Summary

W. R. Cortless

Pioneer space probe project to show history, design, development, flight operations, and results accomplished.

NASA SP-278
N73-14864 135 pp
Avail GPO 1972

**The Interplanetary Pioneers.
Volume II. System Design and
Development**

W. R. Corliss

Pioneer space probe system design and development, ground support system, tracking and communication, and data processing.

NASA SP-279
N73-17882 312 pp
Avail GPO 1972

**The Interplanetary Pioneers.
Volume III. Operations**

W. R. Corliss

Operational aspects of Pioneer program.

NASA SP-280
N73-20882 157 pp
Avail GPO 1972

**Seventh Annual Conference on Manual
Control**

Manual control systems for human operator modeling and display systems in man-machine environments. Conference, June 1971.

NASA SP-281
N73-10104 354 pp
Avail GPO 1972

**The Fifth Aerospace Mechanisms
Symposium**

Structural design principles and mechanical engineering methods for aerospace mechanisms used in orbital and space flights. Conference, June 1970.

NASA SP-282
N72-13391 196 pp
Avail NTIS 1971

Earth Resources Survey Systems

Applications of remote sensing to agriculture, forestry, oceanography, urban development. Workshop, May 1971.

NASA SP-283
N73-16348 359 pp
Avail GPO 1972

**Analysis of Surveyor 3 Material and
Photographs Returned by Apollo 12**

Postflight analysis of parts from Surveyor 3 spacecraft, lunar material, and photographs brought back on Apollo 12 flight.

NASA SP-284
N72-26731 302 pp
Avail GPO 1972

Remote Measurement of Pollution

Remote sensing techniques for measuring gaseous air pollution, water pollution, and particulate air pollution.

NASA SP-285
N72-18324 261 pp
Avail NTIS 1971

**Significant Accomplishments in Science:
Goddard Space Flight Center, 1970**

Research in Earth resources, meteorology, and interplanetary physics. Symposium, January 1971.

NASA SP-286
N72-23324 253 pp
Avail NTIS 1972

What Made Apollo a Success?

Apollo spacecraft development, mission planning, and flight operations.

NASA SP-287
N72-12892 87 pp
Avail NTIS 1971

Vibration of Shells

A. W. Leissa

Vibrational characteristics, mechanical properties, and stress analysis of thin shell structures of various cross sections.

NASA SP-288
N73-26924 435 pp
Avail GPO 1973

Apollo 15: Preliminary Science Report

Apollo 15 flight accomplishments, lunar surface activities, lunar orbital activities, and photographic coverage.

NASA SP-289
N72-22814 502 pp
Avail GPO 1972

Turbine Design and Application

A. J. Glassman

Review of turbine technology including thermodynamics, compressible fluid mechanics, fundamental turbine concepts, and velocity diagram design.

Volume I
NASA SP-290
N72-26685 101 pp
Avail GPO 1972

Volume II
NASA SP-290
N74-33476 152 pp
Avail GPO 1973

Volume III
NASA SP-290
N75-24741 141 pp
Avail GPO 1975

The Transformation of Scientists and Engineers Into Managers

J. A. Bayton, R. L. Chapman

Principal problems and obstacles faced by specialists during the transition period when they are becoming managers.

NASA SP-291
N72-27986 135 pp
Avail GPO 1972

Vehicle Technology for Civil Aviation: The Seventies and Beyond

Technological concepts for future transport aircraft developments in civil aviation. Conference, November 1971.

NASA SP-292
N72-12995 452 pp
Avail NTIS 1971

Experimental InterAmerican Meteorological Rocket Network (EXAMETNET): The First Five Years, 1966-1970

Five-year assessment of EXAMETNET, meteorological rocket network of Argentina, Brazil, and United States for stratospheric soundings.

NASA SP-293
N72-17558 58 pp
Avail NTIS 1972

Remote Sensing of the Chesapeake Bay

Remote sensing of resources contained in Chesapeake Bay to determine effects of environmental pollution. Conference, April 1971.

NASA SP-294
N72-26272 176 pp
Avail GPO 1972

Significant Accomplishments in Technology: Goddard Space Flight Center, 1970

J. M. Bridger

Technological developments in satellite communications, tracking, antenna arrays, attitude control, orbit calculations, and instrumentation. Symposium, January 1971.

NASA SP-295
N72-25755 214 pp
Avail NTIS 1972

Rocket/Nimbus Sounder Comparison (RNSC)

Radiance and temperature differences between rocket and Nimbus satellite systems.

NASA SP-296
N72-19892 46 pp
Avail NTIS 1972

Numerical Marching Techniques for Fluid Flows With Heat Transfer

R. W. Hornbeck

Formulations and solutions for fluid flow problems with associated heat transfer.

NASA SP-297
N74-12992 349 pp
Avail GPO 1973

Space Simulation

Symposium, May 1972.

NASA SP-298
N72-22250 1093 pp
Avail GPO 1972

Holography and Optical Filtering

Holography and optical filtering techniques for structural analysis, material tests, and astronomical observation. Conference, May 1971.

NASA SP-299
N73-25540 195 pp
Avail GPO 1973

Physics of the Solar System

S. I. Rasool

Solar system, solar physics, planetary atmospheres and structure, and origin of planets and Moon.

NASA SP-300
N72-25810 519 pp
Avail GPO 1972

Supercritical Wing Technology: A Progress Report on Flight Evaluations

Supercritical wing development and results of F-8 and T-2C test programs. Symposium, February 1972.

NASA SP-301
X72-10196 141 pp
1972

Second Conference on Portable Life Support Systems

Portable life support systems for human protection. Conference, May 1971.

NASA SP-302
N72-27106 350 pp
Avail NTIS 1972

The Quiet Sun

E. G. Gibson

Textbook of solar physics.

NASA SP-303
N73-25846 344 pp
Avail GPO 1973

Fluid Mechanics, Acoustics, and Design of Turbomachinery

*B. Lakshminarayana, W. R. Britsch,
W. S. Gearhart*

Part 1

NASA SP-304
N75-11174 419 pp
Avail GPO 1974

Part 2

NASA SP-304
N75-11191 447 pp
Avail GPO 1974

Physics of the Space Environment

R. E. Smith, S. T. Wu

Upper atmospheric physics and chemistry, auroras, and solar flare forecasting. Colloquium, 1971.

NASA SP-305
N72-31384 176 pp
Avail NTIS 1972

Compositions of Major and Minor Minerals in Five Apollo 12 Crystalline Rocks

*B. M. French, K. F. J. Heinrich,
P. D. Loman, Jr., et al.*

Mineral analysis of lunar samples of crystalline rocks from Apollo 12 flight.

NASA SP-306
N73-16837 145 pp
Avail NTIS 1972

Report of the Tape Recorder Action Plan Committee, March 13, 1972

Failure analysis of tape recorders for spacecraft applications.

NASA SP-307
N73-15225 52 pp
Avail NTIS 1972

Solar Wind

*C. P. Sonett, P. J. Coleman, Jr.,
J. M. Wilcox*

Magnetic structure of interplanetary and solar magnetic fields and solar wind. Conference, March 1971.

NASA SP-308
N73-10760 728 pp
Avail GPO 1972

Advanced Approaches to Fatigue Evaluation

Fatigue test evaluation for aircraft structures. Symposium, May 1971.

NASA SP-309
N72-29895 675 pp
Avail NTIS 1972

The Scientific Results From the Orbiting Astronomical Observatory (OAO-2)

A. D. Code

Scientific observations by OAO of solar system, interstellar matter, stellar atmospheres, and galactic and extragalactic systems. Conference, August 1971.

NASA SP-310
N72-31810 597 pp
Avail NTIS 1972

Aircraft Engine Noise Reduction

Conference, May 1972.

NASA SP-311
N73-12012 321 pp
Avail NTIS 1972

Significant Accomplishments in Sciences: Goddard Space Flight Center, 1971

Research on remote sensing applications and satellite observation data. Symposium, November 1971.

NASA SP-312
N73-17934 220 pp
Avail NTIS 1972

Space for Mankind's Benefit

J. Vonputtkamer, T. J. McCullough

Conference, November 1971.

NASA SP-313
N73-13829 415 pp
Avail GPO 1972

Fifth Symposium on the Role of the Vestibular Organs in Space Exploration

Vestibular problems of manned space flight for weightlessness and reduced gravity conditions with emphasis on space station development, including morphological studies. Symposium, August 1970.

NASA SP-314
N74-18754 275 pp
Avail GPO 1972

Apollo 16 Preliminary Science Report

Preliminary results of Apollo 16 investigations.

NASA SP-315
N73-21729 636 pp
Avail GPO 1972

Advanced Methods for the Solution of Differential Equations

M. E. Goldstein, W. H. Braun

NASA SP-316
N74-10569 359 pp
Avail GPO 1972

Stellar Chromospheres

S. D. Jordan, E. H. Avrett

Stellar chromospheres and their compositions. Colloquium, February 1972.

NASA SP-317
N73-13792 318 pp
Avail GPO 1973

Interdisciplinary Approach to Liquid Lubricant Technology

P. M. Ku

Requirements and functions of liquid lubricants, mineral oils, greases, theory of rheology, mechanics and thermodynamics in lubrication, environmental capability of liquid lubricants, wear corrosion and erosion. Symposium, January 1972.

NASA SP-318
N74-12219 569 pp
Avail GPO 1973

Evolutionary and Physical Properties of Meteoroids

*C. L. Hemenway, P. M. Millman,
A. F. Cook*

Astrophysical models for meteoroid formation and stellar and planetary evolutions developed from simulation composition studies. Colloquium, June 1971.

NASA SP-319
N74-19436 361 pp
Avail GPO 1973

STOL Technology

Aerodynamic characteristics and short haul transportation applications. Conference, October 1972.

NASA SP-320
N73-32934 516 pp
Avail NTIS 1972

Free Turbulent Shear Flows

S. F. Birch

Development of data, including two-dimensional shear layers and axisymmetric jets. Conference, July 1972.

Volume I. Conference Proceedings

NASA SP-321
N73-28154 763 pp
Avail NTIS 1973

Volume II. Summary of Data

NASA SP-321
N73-27213 94 pp
Avail NTIS 1973

A Review of Methods for Predicting Air Pollution Dispersion

J. J. Mathis, Jr., W. L. Grose

Air pollution models, and problem areas in air pollution dispersion modeling.

NASA SP-322
N73-20658 46 pp
Avail NTIS 1973

Accelerated Testing of Space Batteries

*J. McCallum, R. E. Thomas,
J. H. Waite*

Accelerated life test program for space batteries.

NASA SP-323
N73-21958 220 pp
Avail NTIS 1973

Project Management in NASA: The System and the Men

R. H. Pontious, L. B. Barnes

NASA SP-324
N74-15692 137 pp
Avail GPO 1973

The Orbital Mechanics of Flight Mechanics

R. S. Dunning

Reference handbook on modern dynamic orbit theory.

NASA SP-325
N74-12482 164 pp
Avail NTIS 1973

Significant Accomplishments in Technology: Goddard Space Flight Center, 1972

Technology utilization in spacecraft guidance, ground operations, communications and navigation systems, and sensor development. Symposium, November 1972.

NASA SP-326
N73-27816 186 pp
Avail NTIS 1973

Significant Results Obtained From the Earth Resources Technology Satellite-1. Volume I: Technical Presentations

*S. C. Freden, E. P. Mercanti,
M. A. Becker*

Symposium, March 1973.

NASA SP-327
N73-28207 1686 pp
Avail GPO 1973

Life Beyond Earth and the Mind of Man

R. Berendzen

Social, philosophical, and humanistic impacts of possible existence of extraterrestrial life. Symposium, November 1972.

NASA SP-328
N73-30807 110 pp
Avail GPO 1973

Mars as Viewed by Mariner 9

Photographs of the surface of Mars showing geologic features and effects of atmospheric phenomena.

NASA SP-329
N75-17270 279 pp
Avail GPO 1974

Apollo 17 Preliminary Science Report

Apollo 17 site selection, mission description, geological investigation of landing site, lunar experiments, visual flight flash phenomenon, volcanic studies, mare ridges, remote sensing and photogrammetric studies, astronomical photography.

NASA SP-330
N74-18428 677 pp
Avail GPO 1973

Significant Accomplishments in Sciences: Goddard Space Flight Center, 1972

Space applications research in astronomy and earth physics.

NASA SP-331
N73-31867 223 pp
Avail NTIS 1973

The Gum Nebula and Related Problems

Symposium, May 1971.

NASA SP-332
N73-31731 246 pp
Avail NTIS 1973

Design of Various Fixed-Geometry Water-Lubricated Hydrodynamic Journal Bearings for Maximum Stability

F. T. Schuller

NASA SP-333
N74-11305 101 pp
Avail NTIS 1973

The Viking Mission to Mars

Preview of the mission.

NASA SP-334
N74-34287 82 pp
Avail NTIS 1974

Advanced Scanners and Imaging Systems for Earth Observations

Electromechanical scanners, self-scanned solid state sensors, electron beam images, sensor related technology, user applications.

NASA SP-335
N74-11287 620 pp
Avail GPO 1973

Seventh Conference on Space Simulation

Conference, November 1973.

NASA SP-336
N74-10232 935 pp
Avail GPO 1973

The New Mars: The Discoveries of Mariner 9

W. K. Hartmann, O. Raper

A history of our knowledge of Mars—how we gained it and how it grew.

NASA SP-337
N75-13729 192 pp
Avail GPO 1974

Advanced Electro-Optical Imaging Techniques

S. Sobieski, E. J. Wampler

Symposium, September 1972.

NASA SP-338
N74-17406 134 pp
Avail NTIS 1973

Gamma-Ray Astrophysics

F. W. Stecker, A. I. Trombka

Symposium, May 1973.

NASA SP-339
N74-14465 425 pp
Avail GPO 1973

The Atmosphere of Titan

D. M. Hunten

Spectroscopic and radiometric observations used to form models for the Titan atmospheric composition and circulation.

NASA SP-340
N74-20478 185 pp
Avail NTIS 1974

Atlas of Surveyor 5 Television Data

*R. M. Batson, R. Jordan,
K. B. Larson*

NASA SP-341
N75-14665 609 pp
Avail GPO 1974

High Energy Phenomena on the Sun

R. Ramaty, R. G. Stone

Symposium, September 1972.

NASA SP-342
N74-21440 640 pp
Avail GPO 1973

The Rings of Saturn

F. D. Palluconi, G. H. Pettengill

Preview of Mariner Jupiter-Saturn '77 space project. Workshop, August 1973.

NASA SP-343
N75-17236 221 pp
Avail GPO 1974

Objectives and Models of the Planetary Quarantine Program

M. Werber

Objectives of the planetary quarantine program and the history of early contamination prevention efforts.

NASA SP-344
N75-25604 140 pp
Avail GPO 1975

Evolution of the Solar System

H. Alfvén, G. Arrhenius

Physical process and experimental studies related to the origin and evolution of the solar system.

NASA SP-345
N77-12959 611 pp
Avail GPO 1976

Aeroacoustics

M. E. Goldstein

NASA SP-346
N74-35118 440 pp
Avail NTIS 1974

Aerodynamic Analyses Requiring Advanced Computers

Conference, March 1975.

Part 1

NASA SP-347
N76-10007 710 pp
Avail NTIS 1975

Part 2

NASA SP-347
N76-10031 779 pp
Avail NTIS 1975

Radiative Property Data for Venusian Entry: A Compendium

*J. J. Jones, R. E. Boughner,
K. V. Haggard, et al.*

NASA SP-348
N75-12880 85 pp
Avail NTIS 1974

Pioneer Odyssey: Encounter With a Giant

*R. O. Fimmel, W. Swindell,
E. Burgess*

Pioneer Jupiter mission objectives, hazards, spacecraft design, communication techniques, mission accomplishments, scientific payloads. (The Pioneer flyby of Saturn is included in NASA SP-446.)

NASA SP-349
N75-10130 183 pp
Avail GPO 1974

Apollo Expeditions to the Moon

E. M. Cortright

From planning stages through Apollo 17. The objectives and accomplishments of each mission are discussed.

NASA SP-350
N76-12956 324 pp
Avail GPO 1975

Third Earth Resources Technology Satellite-1 Symposium. Volume 1: Technical Presentations, Section A

*S. C. Freden, E. P. Mercanti,
M. A. Becker*

Symposium, December 1973.

NASA SP-351
N74-30705 992 pp
Avail GPO 1974

Third Earth Resources Technology Satellite-1 Symposium. Volume 1: Technical Presentations, Section B

*S. C. Freden, E. P. Mercanti,
M. A. Becker*

NASA SP-351
N74-30774 936 pp
Avail GPO 1974

Rotorcraft Dynamics

A dynamic structural analysis of rotary winged aircraft considering helicopter vibration and loads. Conference, February 1974.

NASA SP-352
N74-34489 370 pp
Avail NTIS 1974

Corn Blight Watch Experiment. Summary Report

NASA SP-353
N74-33861 17 pp
Avail GPO 1974

DOT/NASA Comparative Assessment of Brayton Engines for Guideway Vehicles and Buses

Volume I. Summary

NASA SP-354
N75-18577 47 pp
Avail NTIS 1975

Volume II. Analysis and Results

NASA SP-354
N75-22745 284 pp
Avail NTIS 1975

Comet Kohoutek

G. A. Gary

Tail form, structure, and evolution; hydroxyl related observations; molecules and atoms in the coma and tail; photometry and radiometry; spacecraft and ground-based observation data. Color photographs. Workshop, June 1974.

NASA SP-355
N76-10938 281 pp
Avail NTIS 1975

Third Earth Resources Technology Satellite-1 Symposium. Volume II: Summary of Results

*S. C. Freden, E. P. Mercanti,
D. B. Friedman*

Results and applications of ERTS-1 data for solving resource management problems. Symposium, December 1973.

NASA SP-356
N75-10549 184 pp
Avail GPO 1974

Third Earth Resources Technology Satellite-1 Symposium. Volume III: Discipline Summary Report

*S. C. Freden, E. P. Mercanti,
D. B. Friedman*

Agriculture, forestry, and range resources; land use and mapping; mineral resource, geological structure, and landform surveys; water and marine resources; environmental surveys; interpretation techniques. Symposium, December 1973.

NASA SP-357
N74-33873 159 pp
Avail GPO 1974

Wave Climate Model of the Mid-Atlantic Shelf and Shoreline (Virginian Sea): Model Development, Shelf Geomorphology, and Preliminary Results

*V. Goldsmith, W. D. Morris,
R. J. Byrne, et al.*

Computerized wave climate model that applies linear wave theory and shelf depth information to predict wave behavior.

NASA SP-358
N75-23072 153 pp
Avail NTIS 1974

Monterey Bay Study

R. M. Bizzell, L. C. Wade

Usefulness of Landsat system in the planning and development of resource systems on Earth.

NASA SP-359
N75-30629 33 pp
Avail GPO 1975

Mission to Earth: Landsat Views the World

*N. M. Short, P. D. Lowman, Jr.,
S. C. Freden, et al.*

Four hundred color plates showing land cultural features.

NASA SP-360
N77-17532 926 pp
Avail GPO 1976

Educator's Guide for Mission to Earth: Landsat Views the World

M. A. Tindal

Information for using Landsat imagery to aid in teaching earth science and geology, environmental studies, geography, social and urban studies.

Supplement to NASA SP-360
N80-10537 56 pp
Avail GPO 1978

Significant Accomplishments in Science and Technology: Goddard Space Flight Center, 1973

Cometary physics, x-ray and gamma ray astronomy, solar and terrestrial physics, spacecraft technology, Earth Resources Technology Satellite (Landsat), Earth and ocean physics, communications and navigation, mission operations and data systems, network systems and operations. Symposium, December 1973.

NASA SP-361
N75-16422 360 pp
Avail NTIS 1975

Apollo Over the Moon: A View From Orbit

*H. Masursky, G. W. Colton,
F. El-Baz, et al.*

Photographs taken by the Apollo metric camera system.

NASA SP-362
N78-21174 263 pp
Avail GPO 1978

Technology and the Neurologically Handicapped

Bioengineering approaches to the treatment of neurologically handicapped persons; neurophysiological aspects of control systems and man-machine integration. Conference, September 1971.

NASA SP-363
N75-19975 278 pp
Avail NTIS 1974

Data Collection System: Earth Resources Technology Satellite-1

S. Cooper, P. T. Ryan

Sensors, interface hardware, power supplies, environmental enclosures, data transmission, processing and distribution, maintenance and integration in resources management systems. Conference, May 1973.

NASA SP-364
N75-16050 127 pp
Avail NTIS 1975

National Geodetic Satellite Program

S. W. Henriksen

Instruments used to obtain data, description of data, data processing theory, evaluation of results.

Part 1

NASA SP-365
N78-11545 523 pp
Avail NTIS 1977

Part 2

NASA SP-365
N78-11552 509 pp
Avail GPO 1977

Possible Relationships Between Solar Activity and Meteorological Phenomena

W. R. Bandeen, S. P. Maran

Symposium, November 1973.

NASA SP-366
N76-14528 263 pp
Avail GPO 1975

Introduction to the Aerodynamics of Flight

T. A. Talay

The atmosphere, fluid flow, subsonic flow effects, transonic flow, supersonic flow, aircraft performance, and stability and control.

NASA SP-367
N76-11043 203 pp
Avail NTIS 1975

Biomedical Results From Apollo

*R. S. Johnston, L. F. Dietlein,
C. A. Berry*

Crew health and inflight monitoring, preflight and postflight medical testing, inflight experiments, quarantine, and life support systems.

NASA SP-368
N76-12668 592 pp
Avail GPO 1975

Forced-Flow Once-Through Boilers: NASA Research

*J. R. Stone, V. H. Gray,
O. A. Gutierrez*

Research on boilers for use in spacecraft electrical power generation systems.

NASA SP-369
N75-32388 142 pp
Avail NTIS 1975

The Soviet-American Conference on Cosmochemistry of the Moon and Planets

J. H. Pomeroy, N. J. Hubbard

Thermal history of the Moon; lunar gravitation and magnetism; chronology of the moon, planets, and meteorites; hypotheses about the origin and evolution of the Moon and planets; data on Mercury, Venus, Mars, Jupiter. Conference, June 1974.

Part 1

NASA SP-370
N78-12925 503 pp
Avail GPO 1977

Part 2

NASA SP-370
N78-12958 423 pp
Avail GPO 1977

Large Scale Dynamic Systems

Large scale dynamic systems in terms of modern control theory in the fields of aeronautics, water resources, and electrical power. Workshop, August 1974.

NASA SP-371
N75-29845 206 pp
Avail NTIS 1975

NASA-University Conference on Aeronautics

Aeronautics and the education of the engineers, technical trends in aeronautics, and the role of the university in aeronautics. Conference, October 1974.

NASA SP-372
N75-29001 430 pp
Avail NTIS 1975

Free Radical OH: A Molecule of Astrophysical and Aeronomic Interest

H. Shardanand Mohan

Rotational-vibrational transitions, dissociation and ionization processes, and spectral characteristics.

NASA SP-373
N75-29960 90 pp
Avail NTIS 1975

Foundations of Space Biology and Medicine

M. Calvin, O. G. Gazenko

Volume I. Space as a Habitat

NASA SP-374
N76-26799 458 pp
Avail GPO 1975

Volume II. Ecological and Physiological Bases of Space Biology and Medicine

Book 1

NASA SP-374
N76-26809 415 pp
Avail GPO 1975

Book 2

NASA SP-374
N76-26819 756 pp
Avail GPO 1975

Volume III. Space Medicine and Biotechnology

NASA SP-374
N76-26829 542 pp
Avail GPO 1975

The Use of Lasers for Hydrographic Studies

H. H. Kim, P. T. Ryan

Use of remote laser sensors in water pollution detection and identification, coastal environment monitoring, bathymetric depth sounding. Symposium, September 1973.

NASA SP-375
N75-30525 202 pp
Avail NTIS 1975

Active Microwave Workshop Report

R. E. Matthews

Data on active microwave systems. Remote sensing of Earth/land features, ocean/atmosphere interactions, equipment and instrument technology. Workshop, July 1974.

NASA SP-376
N76-11811 513 pp
Avail GPO 1975

Biomedical Results From Skylab

R. S. Johnston, L. F. Dietlein

Physiological responses of space crew to prolonged space flight stress.

NASA SP-377
N77-33780 502 pp
Avail GPO 1977

Numerical Studies of Incompressible Viscous Flow in a Driven Cavity

Numerical methods that can be applied to the Navier-Stokes equations; cubic spline procedure.

NASA SP-378
N76-16023 132 pp
Avail NTIS 1975

Eighth Conference on Space Simulation

State of the art in space simulation, spacecraft contamination, thermal control systems, biosciences, flammability. Conference, November 1975.

NASA SP-379
N76-11113 859 pp
Avail NTIS 1975

Skylab Explores the Earth

Experiments to determine the types of data obtainable through visual observation by Skylab crews.

NASA SP-380
N77-28548 531 pp
Avail GPO 1977

Aeronautical Propulsion

Engine design, exhaust gases, use of composites, bearings, supersonic and hypersonic propulsion. Conference, May 1975.

NASA SP-381
N75-31068 476 pp
Avail NTIS 1975

The Atmosphere of Venus

J. E. Hansen

Dynamics, structure, chemistry and evolution of the atmosphere of Venus. Conference, October 1974.

NASA SP-382
N76-10933 202 pp
Avail NTIS 1975

Cepheid Modeling

D. Fischel, W. M. Sparks

Mathematical techniques used to model the instability behavior of cepheid variables. Conference, July 1974.

NASA SP-383
N76-10951 338 pp
Avail NTIS 1975

Significant Accomplishments in Science and Technology: Goddard Space Flight Center, 1974

Earth resources and astronomy; photographs of satellite observations. Symposium, December 1974.

NASA SP-384
N76-10934 208 pp
Avail NTIS 1975

Proceedings of the 1958 Flight Flutter Testing Symposium

Theory, methods, and techniques of flight flutter testing. Symposium, May 1958.

NASA SP-385
N76-10095 196 pp
Avail NTIS 1975

Outlook for Space: Report to the NASA Administrator by the Outlook for Space Study Group

Future activities in the context of national needs, 1980-2000.

NASA SP-386
N76-18004 373 pp
Avail GPO 1976

A Forecast of Space Technology: 1980-2000

Information management, scientific resources, management of energy and matter.

NASA SP-387
N76-18005 320 pp
Avail GPO 1976

Analytical Applications of Bioluminescence and Chemiluminescence

E. W. Chappelle, G. L. Picciolo

NASA SP-388
N76-15538 119 pp
Avail NTIS 1975

X-Ray Binaries

Satellite x-ray experiments and ground-based programs aimed at observation of x-ray binaries. Symposium, October 1975.

NASA SP-389
N76-26056 718 pp
Avail NTIS 1976

Applications of Computer Graphics in Engineering

Conference, October 1975.

NASA SP-390
N76-16812 661 pp
Avail NTIS 1975

Operational Applications of Satellite Snowcover Observations

A. Rango

Snow measurements made by Landsat and NOAA satellites were used to help forecast runoff and flooding. Conference, August 1975.

NASA SP-391
N76-16561 430 pp
Avail NTIS 1975

The Space Telescope

Mission planning, telescope performance, optical detectors, mirror construction, pointing and control systems, data management, and maintenance of the telescope. Meeting, August 1975.

NASA SP-392
N76-23110 240 pp
Avail GPO 1976

The Study of Comets

*B. Donn, M. J. Mumma,
W. M. Jackson, et al.*

Photometry and spectrum analysis of Kohoutek comet and comet tails. Colloquium, November 1974.

Part 1
NASA SP-393
N76-21052 557 pp
Avail GPO 1976

Part 2
NASA SP-393
N76-21075 557 pp
Avail GPO 1976

A Survey of Computational Aerodynamics in the United States

A. Gessow, D. J. Morris

Programs in theoretical and computational aerodynamics, including application for boundary layer flow, Navier-Stokes turbulence modeling, internal flows, two-dimensional configurations, subsonic and supersonic aircraft, transonic aircraft, and the Space Shuttle.

NASA SP-394
N78-11007 49 pp
Avail NTIS 1977

Second NASA Conference on Laser Energy Conversion

K. W. Billman

The possible transmission of high-power laser beams over long distances and their conversion to thrust, electricity, and other useful forms of energy. Conference, January 1975.

NASA SP-395
N76-21505 196 pp
Avail NTIS 1976

Solar-Wind Interaction With the Planets Mercury, Venus, and Mars

N. F. Ness

Magnetic field and plasma measurements in the environments of Mars, Mercury, and Venus. Seminar, November 1975.

NASA SP-397
N76-25125 172 pp
Avail NTIS 1976

The 1976 Standard Atmosphere Above 86-km Altitude

R. A. Minzner

Development of an atmospheric model, temperature and composition profiles.

NASA SP-398
N77-10755 77 pp
Avail NTIS 1976

Skylab EREP Investigations Summary

W. J. Pierson

EREP data on agriculture, cartography, geology, hydrology, oceans atmosphere.

NASA SP-399
N79-17279 387 pp
Avail GPO 1978

Skylab, Our First Space Station

L. F. Belew

Skylab's role in the study of solar and stellar astronomy, data on solar physics and space processing experiments.

NASA SP-400
N77-27155 176 pp
Avail GPO 1977

Skylab, Classroom in Space

L. B. Summerlin

Student-designed Skylab experiments and demonstrations on the effect of weightlessness.

NASA SP-401
N77-29189 190 pp
Avail GPO 1977

A New Sun: The Solar Results From Skylab

J. A. Eddy

The Sun as seen by Skylab's cameras.

NASA SP-402
N79-22991 220 pp
Avail GPO 1979

Volcanic Features of Hawaii. A Basis for Comparison With Mars

M. H. Carr, R. Greeley

Similarities and differences between the volcanoes of Hawaii and those on Mars. Photographs.

NASA SP-403
N80-23912 216 pp
Avail GPO 1980

Skylab's Astronomy and Space Sciences

C. A. Lundquist

Skylab's multidisciplinary capabilities, including observations of stars and galaxies, energetic particles, interplanetary dust, Comet Kohoutek.

NASA SP-404
N79-34118 126 pp
Avail GPO 1979

Vortex-Lattice Utilization

Implementation and application of the vortex-lattice method to aerodynamic design and analysis. Workshop, May 1976.

NASA SP-405
N76-28163 409 pp
Avail NTIS 1976

Powered-Lift Aerodynamics and Acoustics

Conference on high-lift aerodynamics, high-speed and cruise aerodynamics, acoustics, propulsion aerodynamics and acoustics, aerodynamic and acoustic loads, and full-scale and flight research. May 1976.

NASA SP-406
N78-24046 502 pp
Avail NTIS 1976

Space Shuttle

Flight system, mission profile, economic and social benefits, description of vehicle.

NASA SP-407
N76-31268 97 pp
Avail GPO 1976

Viking 1: Early Results

Text and photos from the first weeks after the Viking 1 landing on Mars.

NASA SP-408
N76-28296 76 pp
Avail NTIS 1976

Wake Vortex Minimization

Research on the effect of wing span, wing flaps, spoilers, splines, and engine thrust on vortex attenuation. Symposium, February 1976.

NASA SP-409
N78-12017 403 pp
Avail NTIS 1977

Satellite-Derived Global Oceanic Rainfall Atlas

*M. S. V. Rao, W. V. Abbott III,
J. S. Theon*

NASA SP-410
N77-19709 336 pp
Avail GPO 1976

The Apollo-Soyuz Test Project Medical Report

A. E. Nicogossian

Clinical aspects and preflight and postflight research studies performed on the astronauts.

NASA SP-411
N77-30735 129 pp
Avail NTIS 1977

Apollo-Soyuz Test Project Summary Science Report

Volume I. Astronomy, Earth Atmosphere and Gravity Field, Life Sciences, and Materials Processing

NASA SP-412
N78-17088 570 pp
Avail NTIS 1977

Volume II. Earth Observations and Photography

F. El-Baz, D. M. Warner

NASA SP-412
N80-10538 700 pp
Avail NTIS 1979

Settlements in Space: A Design Study

R. D. Johnson, C. Holbrow

Concept of how people might permanently sustain life in space on a large scale; design of a system to colonize space.

NASA SP-413
N77-21106 191 pp
Avail GPO 1977

On the Habitability of Mars: An Approach to Planetary Ecosynthesis

M. M. Averner, R. D. Macelroy

Examination of the possibility of utilizing Mars as a habitat for terrestrial life.

NASA SP-414
N77-12718 114 pp
Avail NTIS 1976

Flutter Testing Techniques

Developments in methodology and data analysis techniques for flutter testing in flight and on the ground.

NASA SP-415
N77-21022 483 pp
Avail NTIS 1976

Aircraft Safety and Operating Problems

Terminal area operations, flight dynamics and control, ground operations, atmospheric environment, structures and materials, power plants, noise, human factors engineering. Conference, October 1976.

NASA SP-416
N77-18081 644 pp
Avail NTIS 1976

A Geological Basis for the Exploration of the Planets

R. Greeley, M. H. Carr

Relevance of planetary geology in relation to the origin and evaluation of the solar system and life. Stratigraphy, structural geology, and geochemistry of planets.

NASA SP-417
N77-15961 117 pp
Avail NTIS 1976

Lunar Sample Studies

Technical examination of breccias, basalts, and anorthosites.

NASA SP-418
N77-27053 72 pp
Avail NTIS 1977

The Search for Extraterrestrial Intelligence: SETI

P. Morrison, J. Billingham, J. Wolfe

Cosmic evolution, space communication, technological advances, search strategies and systems. Includes bibliography of reports concerning the search for extraterrestrial intelligence.

NASA SP-419
N78-18771 289 pp
Avail GPO 1977

Voyager to Jupiter and Saturn

Voyager mission schedule and profiles for encounters, description of spacecraft and trajectories, scientific investigations and instruments.

NASA SP-420
N77-29046 62 pp
Avail NTIS 1977

Recognition of Compact Astrophysical Objects

H. Ogelman, R. Rothschild

Stellar evolution, pulsars, binary stars, x-ray signatures, gamma ray sources, temporal analysis of x-ray data.

NASA SP-421
N77-34063 200 pp
Avail NTIS 1977

Calculation Methods for Compressible Turbulent Boundary Layers: State-of-the-Art, 1976

*D. M. Bushnell, A. M. Cary, Jr.,
J. E. Harris*

Equations and closure methods for compressible turbulent boundary layers, flow phenomena, three-dimensional layers.

NASA SP-422
N78-13371 146 pp
Avail NTIS 1977

Atlas of Mercury

*M. E. Davies, S. E. Dornik,
D. E. Gault, R. G. Strom*

Mariner 10 spacecraft, scientific mission, surface mapping techniques, topographic features of Mercury. Photographs, shaded relief maps, photomosaics.

NASA SP-423
N78-30025 135 pp
Avail GPO 1978

The Voyage of Mariner 10: Mission to Venus and Mercury

J. A. Dunne, E. Burgess

Historical details of Mariner 10 mission, images of Venus and Mercury.

NASA SP-424
N78-27146 233 pp
Avail GPO 1978

The Martian Landscape

Design of the facsimile camera, image sequencing, picture calibration, reconstruction of color, search for motion on Mars. Over 200 color and black and white photographs. Stereo pairs and stereopticon included.

NASA SP-425
N79-12984 160 pp
Avail GPO 1978

Sun, Weather, and Climate

J. R. Herman, R. A. Goldberg

Solar-related correlation factors, long-term climatic trends, short-term meteorological correlations, obscuring influences, physical processes and mechanisms, recapitulation of Sun-weather relationships, guidelines for experiments.

NASA SP-426
N79-20961 365 pp
Avail GPO 1978

High-Altitude Perspective

Capabilities of the NASA Ames Research Center U-2 aircraft for research or experimental programs.

NASA SP-427
N78-31508 33 pp
Avail GPO 1978

Space Resources and Space Settlements

*J. Billingham, W. P. Gibbreath,
B. O'Leary, et al.*

Research needs for regenerative life-support systems, habitat design, dynamics and design of electromagnetic mass drivers, asteroids as resources for space manufacturing, processing of nonterrestrial materials.

NASA SP-428
N79-32225 292 pp
Avail GPO 1979

Physiological Responses of Women to Simulated Weightlessness

H. Sandler, D. L. Winter

Subjects were exposed to centrifugation, lower body negative pressure, and exercise stress.

NASA SP-430
N79-13686 92 pp
Avail NTIS 1978

The Space Shuttle at Work

H. Allaway

Operation, tasks and duties, design, future development of the Space Shuttle.

NASA SP-432
N80-30367 84 pp
Avail GPO 1979

**Shuttle Atmospheric Lidar Research
Program: Final Report of Science
Working Group**

Determination of global flow of water vapor and pollutants in the troposphere, improvement of chemical and transport models of the stratosphere and mesosphere, evaluation of radiative models of the atmosphere, investigation of chemistry and transport of thermospheric atomic species and magnetospheric aspects of Sun/weather relationships.

NASA SP-433
N80-11414 231 pp
Avail NTIS 1979

**An Emission-Line Survey of the Milky
Way**

*R. A. R. Parker, T. R. Gull,
R. P. Kirschner*

The instrumentation used in an examination of the ionization structure of emission nebulae and of the galactic plane in general, and characteristics of the prints obtained.

NASA SP-434
N80-11966 224 pp
Avail GPO 1979

**Terminal Configured Vehicle Program
Facilities Guide**

Program established to conduct research and to develop and evaluate aircraft and flight management system technology concepts to benefit conventional takeoff and landing operations in the terminal area. Analyses, simulation and flight experiments.

NASA SP-435
N80-18028 67 pp
Avail NTIS 1980

**Project Orion: A Design Study of a
System for Detecting Extrasolar Planets**

D. C. Black

Design concept for a ground-based astrometric telescope that could significantly increase the potential accuracy of astrometric observations.

NASA SP-436
N80-27260 214 pp
Avail GPO 1980

**Mathematical Modeling of Diverse
Phenomena**

J. C. Howard

Tensor calculus applied to the formulation of mathematical models of diverse phenomena.

NASA SP-437
N80-13839 402 pp
Avail NTIS 1979

Atlas of Mars

R. M. Batson, P. M. Bridges, J. L. Inge

Small-scale maps and photomosaics covering the entire surface of the planet Mars.

NASA SP-438
N80-16998 154 pp
Avail GPO 1979

Voyage to Jupiter

D. Morrison, J. Samz

The story of the Voyager project, including many color photographs from the Voyager 1 and 2 flybys of Jupiter.

NASA SP-439
N81-10910 211 pp
Avail GPO 1980

Viking Orbiter Views of Mars

C. R. Spitzer

A collection of Viking Orbiter images, including polar regions, moons, atmosphere, craters, and channels. Stereopticon included.

NASA SP-441
N81-11966 189 pp
Avail GPO 1980

Lessons of the NASA Tech House

H. Allaway

Report of a family's one-year residence in Langley Research Center's experimental house of the future that combines advanced electronics, solar energy, water recycling, and fire-retardant materials.

NASA SP-442
N80-27219 41 pp
Avail GPO 1980

**Images of Mars: The Viking Extended
Mission**

M. H. Carr, N. Evans

Thirty black and white photographs of Mars, some taken as recently as 1979, showing volcanoes, lava plains, channels, canyons, plateaus, impact craters, surface features of Phobos and Deimos.

NASA SP-444
N80-26239 35 pp
Avail GPO 1980

**Pioneer: First to Jupiter, Saturn, and
Beyond**

*R. C. Fimmel, J. A. Van Allen,
E. Burgess*

The missions of Pioneers 10 and 11 to Jupiter and Saturn and toward the outermost limits of the solar system. Descriptions of the spacecraft, the scientific payload, the mission and details of all scientific results. (Supersedes NASA SP-349)

NASA SP-446
N81-15925 293 pp
Avail GPO 1980

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Handbooks and Data Compilations

Thermodynamic Properties to 6000 K for 210 Substances Involving the First 18 Elements

*J. G. Eblers, S. Gordon,
S. Heibel, et al.*

NASA SP-3001
N63-23715 332 pp
Avail NTIS 1963

Thermodynamic Properties and Mollier Chart for Hydrogen From 300 K to 20 000 K

R. F. Kubin, L. L. Presley

NASA SP-3002
N64-18507 69 pp
Avail NTIS 1964

Handbook of Space-Radiation Effects on Solar-Cell Power Systems

W. C. Cooley, R. J. Janda

NASA SP-3003
N63-20315 120 pp
Avail NTIS 1963

Tables for Supersonic Flow Around Right Circular Cones at Zero Angle of Attack

J. L. Sims

NASA SP-3004
N64-18949 428 pp
Avail GPO 1964

Tables of the Composition, Opacity, and Thermodynamic Properties of Hydrogen at High Temperatures

N. L. Krascella

NASA SP-3005
N65-14300 190 pp
Avail NTIS 1963

Bioastronautics Data Book

J. F. Parker, Jr., V. R. West

Bioastronautics research, including stress effects, sensory perception, and human performance.

NASA SP-3006
N73-15091 938 pp
Avail GPO 1973

Tables for Supersonic Flow Around Right Circular Cones at Small Angle of Attack

J. L. Sims

NASA SP-3007
N64-25017 427 pp
Avail GPO 1964

Energy Spectra and Angular Distribu- tions of Electrons Transmitted Through Sapphire (Aluminum Oxide) Foils

M. J. Berger, S. M. Seltzer

NASA SP-3008
N64-18416 109 pp
Avail NTIS 1964

Tables of Flow Properties of Thermally Perfect Carbon Dioxide and Nitrogen Mixtures

W. P. Peterson

NASA SP-3009
N64-19997 119 pp
Avail NTIS 1964

Tables of the Complex Fresnel Integral

C. W. Martz

Fresnel integral evaluated by Taylor series expansions.

NASA SP-3010
N64-23531 298 pp
Avail NTIS 1964

Thermodynamic and Transport Proper- ties for the Hydrogen-Oxygen System

R. A. Svebla

NASA SP-3011
N64-26785 423 pp
Avail NTIS 1964

Tables of Energy Losses and Ranges of Electrons and Positrons

M. J. Berger, S. M. Seltzer

NASA SP-3012
N65-12506 131 pp
Avail NTIS 1964

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W. H. Barkas, M. J. Berger

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L. H. Jorgensen, R. J. Redmond

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L. H. Jorgensen

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Equilibrium Thermodynamic Properties of Three Engineering Models of the Martian Atmosphere

H. E. Bailey

Equilibrium thermodynamic properties (entropy, enthalpy, pressure, and sound speed) of three engineering models of Martian atmosphere.

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Magnetic Fields Due to Solid and Hollow Conical Conductors

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P. L. Yobner*

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J. I. Vette

Models of inner radiation belt to determine values of fluxes and energy spectra of protons and electrons trapped in geomagnetic field.

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Models of the Trapped Radiation Environment. Volume II: Inner and Outer Zone Electrons

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Trapped electron environment in inner and outer radiation belts: tables and graphs.

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Models of the Trapped Electron Radiation Environment. Volume III: Electrons at Synchronous Altitudes

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J. H. King

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Model environment of inner belt proton fluxes.

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Models of the Trapped Radiation Environment. Volume VI: High Energy Protons

J. P. Lavine, J. I. Vette

Model environment of high energy protons trapped in radiation belts.

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Models of the Trapped Radiation Environment. Volume VII: Long Term Time Variations

Time variations of energetic electron and solar proton distributions in inner radiation belt.

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L. Colin, M. J. Rycroft, J. O. Thomas

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List of satellites and space probes with descriptions of scientific instrumentation.

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*H. A. Hyatt, L. R. Koenig,
C. M. Michaux, et al.*

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Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Over the American Continents. Volume III: June, July, September, and October 1963

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R. W. Patch

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J. M. Grimwood

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Astronautics and Aeronautics, 1965: Chronology on Science, Technology and Policy

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NASA SP-4009
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C. G. Brooks, I. D. Ertel

NASA SP-4009
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*I. D. Ertel, R. W. Newkirk,
C. G. Brooks*

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Astronautics and Aeronautics, 1971: Chronology on Science, Technology, and Policy

NASA SP-4016
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Astronautics and Aeronautics, 1972: Chronology on Science, Technology, and Policy

NASA SP-4017
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Astronautics and Aeronautics, 1973: Chronology on Science, Technology and Policy

NASA SP-4018
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Astronautics and Aeronautics, 1974: A Chronology

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N. L. Brun, E. H. Ritchie

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Technological and managerial history of Mercury project, including bibliography.

NASA SP-4201
N67-14934 694 pp
Avail NTIS 1966

Vanguard: A History

M. C. Green, M. Lomask

Origin, course of development, and results of Vanguard Project.

NASA SP-4202
N71-18019 325 pp
Avail NTIS 1970

On the Shoulders of Titans: A History of Project Gemini

B. C. Hacker

Gemini, the intermediate manned space flight program between the Mercury and Apollo programs, was an important prerequisite to the lunar expeditions.

NASA SP-4203
N78-20151 634 pp
Avail GPO 1977

Moonport: A History of Apollo Launch Facilities and Operations

C. D. Benson, W. B. Faberty

Development of the Apollo launch facilities and operations from the beginning of the design through the final launch.

NASA SP-4204
N79-12127 643 pp
Avail GPO 1978

Chariots for Apollo: A History of Manned Lunar Spacecraft

C. G. Brooks, J. M. Grimwood, L. S. Swenson, Jr.

Review of the Apollo lunar exploration program with a focus on the spacecraft, including command and service modules and the lunar module.

NASA SP-4205
N79-28203 553 pp
Avail GPO 1979

The Partnership: A History of the Apollo-Soyuz Test Project

E. C. Ezell, L. N. Ezell

Correspondence, interviews, official documents, scientific experiments, launch vehicles, photographs.

NASA SP-4209
N79-10074 570 pp
Avail GPO 1978

Lunar Impact: A History of Project Ranger

R. C. Hall

Basic management techniques, flight operating procedures, and technology for NASA's unmanned lunar missions.

NASA SP-4210
N78-15149 467 pp
Avail GPO 1977

Venture Into Space: Early Years of Goddard Space Flight Center

A. Rosenthal

History of NASA Goddard Space Flight Center through 1963.

NASA SP-4301
N68-30317 369 pp
Avail NTIS 1968

Adventures in Research: A History of Ames Research Center, 1940-1965

E. P. Hartman

Historical survey of aeronautical research and development at Ames Research Center from 1936 to 1965.

NASA SP-4302
N70-41479 673 pp
Avail GPO 1970

History of NASA Sounding Rockets

W. R. Corliss

Historical summary of the development and use of sounding rockets.

NASA SP-4401
N72-12873 162 pp
Avail GPO 1971

Origins of NASA Names

H. T. Wells, S. H. Whiteley, C. E. Karegeannes

Selection of names for launch vehicles, spacecraft, manned spaceflight programs, sounding rockets, and field installations through 1974.

NASA SP-4402
N77-16981 237 pp
Avail GPO 1976

Orders of Magnitude: A History of NACA and NASA, 1915-1976

F. W. Anderson

A brief history of aeronautics and space exploration from Kitty Hawk to walks on the Moon, space probes, and Skylab.

NASA SP-4403
N76-26147 107 pp
Avail GPO 1976

Liquid Hydrogen as a Propulsion Fuel, 1945-1959

J. L. Sloop

NASA SP-4404
N79-16994 346 pp
Avail GPO 1978

Unmanned Space Project Management: Surveyor and Lunar Orbiter

E. H. Kloman

Analysis of management procedures applied to Surveyor and Lunar Orbiter projects.

NASA SP-4901
N73-13973 49 pp
Avail GPO 1972

The Planetary Quarantine Program: Origins and Achievements, 1956-1973

C. R. Phillips

NASA SP-4902
N75-14670 61 pp
Avail GPO 1974

Technology Utilization

An Improved Precision Height Gage

L. B. Vale

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N64-14062 13 pp
Avail NTIS 1963

Soldering Electrical Connections

Techniques and materials for soldering electrical connections.

NASA SP-5002
N67-36660 67 pp
Avail GPO 1967

Selected Welding Techniques, Part I

H. M. Nance

Aluminum sheet plate welding tools and techniques.

NASA SP-5003
N64-16859 31 pp
Avail GPO 1963

Space Batteries

H. T. Francis

Three sealed battery systems—nickel-cadmium, silver-cadmium, and silver-zinc—for spacecraft power use.

NASA SP-5004
N64-18052 60 pp
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The Retrometer: A Light Beam Communications System

N. E. Thomas

Voice communications system using light beams.

NASA SP-5005
N64-18503 20 pp
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The Measurement of Blood Pressure in the Human Body

W. H. Bickley, C. R. Smith

NASA SP-5006
N64-17838 39 pp
Avail GPO 1964

Measurement of the Heartbeat of Bird Embryos With a Micrometeorite Transducer

V. L. Rogallo

Heartbeat measurement of bird embryos with micrometeorite transducer as ballistocardiograph.

NASA SP-5007
N64-19015 16 pp
Avail NTIS 1964

Selected Welding Techniques, Part II

Aluminum welding techniques for space vehicle applications.

NASA SP-5009
N64-32642 39 pp
Avail GPO 1964

Selected Shop Techniques

Technology handbook for machinists, mechanics, and technicians—shock absorbers and protective devices, machining, metal forming, welding and brazing, and precision tools.

NASA SP-5010
N65-34426 91 pp
Avail NTIS 1965

Welding for Electronic Assemblies

Resistance spot-welding of interconnecting electronic components.

NASA SP-5011
N65-13535 86 pp
Avail NTIS 1964

Effects of Low Temperatures on Structural Metals

*A. G. Imgram, W. S. Lyman,
H. L. Martin*

Cryogenic temperature investigations of aluminum, nickel, steel, titanium, and magnesium alloys.

NASA SP-5012
N65-11046 60 pp
Avail NTIS 1964

Effects of Low Temperatures on the Mechanical Properties of Structural Metals

*J. E. Campbell, A. G. Imgram,
H. L. Martin, et al.*

Low temperature effects on tensile properties of aluminum, magnesium, nickel, steel, and titanium alloys.

NASA SP-5012(01)
N68-31605 65 pp
Avail NTIS 1968

Precision Tooling Techniques

Precision tools, machine tools, and measuring apparatus.

NASA SP-5013
N64-33608 29 pp
Avail GPO 1964

NASA Contributions to the Technology of Inorganic Coatings

J. D. Plunkett

Inorganic coating technology and commercial implications.

NASA SP-5014
N65-15535 263 pp
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Conference on New Technology

Conference on aerospace technology: materials, fabrication processes, electric power generation, instrumentation, lubrication, superconductivity, and plasma physics.

NASA SP-5015
N64-32767 161 pp
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A Technique for Joining and Sealing Dissimilar Materials

Annular reentrant cavity filled with low melting point alloy for sealing and joining dissimilar materials—cryogenic applications.

NASA SP-5016
N65-26638 11 pp
Avail NTIS 1965

Metal-Forming Techniques

I. I. Islamoff

Metal forming techniques for sheet and plate materials used by aircraft and aerospace industry.

NASA SP-5017
N65-33365 59 pp
Avail NTIS 1965

Transforming and Using Space-Research Knowledge—Ten Diversified Views

Space technology applications to industrial process development—welding, turbopumps, human waste as fuel, plastics, neurophysiology and computers. Symposium, June 1964.

NASA SP-5018
N65-18526 111 pp
Avail NTIS 1964

NASA Contributions to Advanced Valve Technology

*L. C. Burmeister, J. B. Loser,
E. C. Sneegas*

NASA SP-5019
N68-10402 190 pp
Avail GPO 1967

Vibrating Diaphragm Pressure Transducer

J. D. King

Vibrating diaphragm transducer for pressure measurements in wind tunnels—construction, sensitivity, stability, energy losses, and cost estimates.

NASA SP-5020
N66-32281 28 pp
Avail NTIS 1964

Index to NASA Tech Briefs, Issue Number 1

NASA SP-5021(01)
N65-15153 54 pp
Avail NTIS 1965

Index to NASA Tech Briefs, Issue Number 2

NASA SP-5021(02)
N65-31135 45 pp
Avail NTIS 1965

Cumulative Index to NASA Tech Briefs, 1963-1965

Annotated bibliography of NASA technical briefs on electrical, energy sources, materials, life sciences, and mechanical information.

NASA SP-5021(03)
N66-17584 138 pp
Avail NTIS 1966

Index to NASA Tech Briefs, January-June 1966

NASA SP-5021(04)
N66-34366 62 pp
Avail NTIS 1966

Cumulative Index to NASA Tech Briefs, 1963-1966

Electrical and electronic, physical science and energy sources, materials and chemistry, life science, and mechanical innovations.

NASA SP-5021(05)
N67-27296 166 pp
Avail NTIS 1967

Index to NASA Tech Briefs, January-June 1967

NASA SP-5021(06)
N67-35596 47 pp
Avail NTIS 1967

Index to NASA Tech Briefs, January-June 1968

NASA SP-5021(07)
N68-90188 40 pp
Avail NTIS 1968

Cumulative Index to NASA Tech Briefs, January-December 1968

NASA SP-5021(08)
N69-90047 156 pp
Avail NTIS 1969

Index to NASA Tech Briefs, January-June 1969

NASA SP-5021(09)
N69-90125 50 pp
Avail NTIS 1969

Cumulative Index to NASA Tech Briefs, 1963-1969

NASA SP-5021(10)
N70-90039 1109 pp
Avail NTIS 1970

Cumulative Index to NASA Tech Briefs, 1963-1967

Cumulative index to NASA survey on technology utilization of aerospace research output.

NASA SP-5021(11)
N68-25221 376 pp
Avail NTIS 1968

Index to NASA Tech Briefs, 1970

NASA SP-5021(12)
N71-28193 295 pp
Avail NTIS 1971

Index to NASA Tech Briefs, 1971

NASA SP-5021(13)
N72-29976 158 pp
Avail NTIS 1972

Index to NASA Tech Briefs, 1972

NASA SP-5021(14)
N73-28941 202 pp
Avail NTIS 1973

Index to NASA Tech Briefs, 1973

NASA SP-5021(15)
N75-17285 115 pp
Avail NTIS 1974

Index to NASA Tech Briefs, 1974

NASA SP-5021(16)
N76-20032 75 pp
Avail NTIS 1975

Index to NASA Tech Briefs, 1976

NASA SP-5021(17)
N78-26031 123 pp
Avail NTIS 1976

Cumulative Index to NASA Tech Briefs, 1970-1975

NASA SP-5021(18)
N80-10969 767 pp
Avail NTIS 1979

Index to NASA Tech Briefs, 1977

NASA SP-5021(19)
N80-10968 99 pp
Avail NTIS 1977

Index to NASA Tech Briefs, 1978

NASA SP-5021(20)
N80-10967 123 pp
Avail NTIS 1978

Micropower Logic Circuits

J. C. Sturman

Digital logic circuits for space vehicle logic systems for application in nonspace computer systems.

NASA SP-5022
N65-23694 21 pp
Avail NTIS 1965

Medical and Biological Applications of Space Telemetry

NASA SP-5023
N65-34001 70 pp
Avail NTIS 1965

Bibliography on Welding Methods

Welding methods bibliography with abstracts, and subject and author indices.

NASA SP-5024
N66-17277 58 pp
Avail NTIS 1966

Suggested Method for Plating Copper on Aluminum

Method for plating copper on aluminum using phosphate anodizing process.

NASA SP-5025
N66-22940 14 pp
Avail NTIS 1966

Thermal Insulation Systems: A Survey

*I. A. Black, P. E. Glaser,
R. S. Lindstrom, et al.*

Thermal insulation systems for cryogenic storage and high temperature protection.

NASA SP-5027
N67-38580 154 pp
Avail NTIS 1967

Technical and Economic Status of Magnesium-Lithium Alloys

P. D. Frost

NASA SP-5028
N65-29952 51 pp
Avail NTIS 1965

Elastic Orifices for Gas Bearings

Elastic orifice in externally pressurized gas bearings.

NASA SP-5029
N65-34226 17 pp
Avail NTIS 1965

Symposium on Technology Status and Trends

Aerospace technological developments, trends, and potential commercial applications. Symposium, April 1965.

NASA SP-5030
N66-17706 239 pp
Avail NTIS 1966

Microelectronics in Space Research

R. M. Burger

Technology survey of microelectronics in space research.

NASA SP-5031
N66-10414 131 pp
Avail NTIS 1965

Plasma Jet Technology

*J. B. Bond, P. R. Dennis,
D. W. Gates, et al.*

Survey on industrial applications of plasma arc devices.

NASA SP-5033
N65-34909 207 pp
Avail NTIS 1965

The Electromagnetic Hammer

Magnetic coil design and development for electromagnetic hammer to remove distortion from welded components.

NASA SP-5034
N66-12344 28 pp
Avail NTIS 1965

Tungsten Powder Metallurgy

V. D. Barth

Tungsten powder metallurgy technology related to space vehicles and less traditional applications.

NASA SP-5035
N66-10415 46 pp
Avail NTIS 1965

Bibliography on Electromechanical Transducers

Annotated bibliography on applications of electromechanical transducers.

NASA SP-5036
N66-17359 44 pp
Avail NTIS 1966

Bibliography on Solid Lubricants

NASA SP-5037
N66-17358 34 pp
Avail NTIS 1966

Magnetic Tape Recording

S. W. Athey

Types of magnetic recording, elements of the tape recorder, recording methods, recorder electronics.

NASA SP-5038
N66-14159 327 pp
Avail NTIS 1966

Structural Design Concepts: Some NASA Contributions

L. A. Scipio, A. L. Scipio

Structural design, reinforced and composite materials and their applications.

NASA SP-5039
N67-38491 180 pp
Avail NTIS 1967

Methods of Brazing Aluminum to Stainless Steel for High-Stress-Fatigue Applications

D. C. Martin

Brazing aluminum to titanium coated stainless steel to minimize formation of intermetallic compounds in joint.

NASA SP-5040
N68-22778 16 pp
Avail NTIS 1968

NASA Contributions to Cardiovascular Monitoring

W. J. Jones, W. C. Simpson

NASA SP-5041
N66-32925 48 pp
Avail NTIS 1966

Earthquake Prediction From Laser Surveying

R. A. Fowler

Geodetic laser system for earthquake prediction and engineering research.

NASA SP-5042
N68-23706 37 pp
Avail NTIS 1968

Flat Conductor Cable Technology

Equipment specifications and electrical properties of flat conductor cable systems.

NASA SP-5043
N68-28879 54 pp
Avail NTIS 1968

Selected Casting Techniques

Method for casting and construction of wind tunnel models.

NASA SP-5044
N66-23562 27 pp
Avail NTIS 1965

Contamination Control Principles

NASA SP-5045
N68-10384 51 pp
Avail NTIS 1967

Selected Electronic Circuitry

Electronic circuit technology for industrial and commercial applications.

NASA SP-5046
N67-15672 100 pp
Avail NTIS 1966

Teleoperators and Human Augmentation

W. R. Corliss, E. G. Johnson

Design and application potentials of general purpose, dexterous, cybernetic machines for human augmentation.

NASA SP-5047
N68-18870 273 pp
Avail NTIS 1967

Applications of Systems Analysis Models

Application of NASA mathematical management models and systems analyses in private industry and economy.

NASA SP-5048
N69-10662 73 pp
Avail GPO 1968

Visual Information Display Systems

Visual information display systems that are computer connected or updated with computer generated information.

NASA SP-5049
N68-32159 101 pp
Avail NTIS 1968

NASA Contributions to Development of Special-Purpose Thermocouples

C. E. Moeller

NASA SP-5050
N68-35620 97 pp
Avail NTIS 1968

The Metallurgy, Behavior, and Application of the 18-Percent Nickel Maraging Steels

A. M. Hail, C. J. Slunder

Metallurgy, behavior, and application of 18 percent nickel maraging steels.

NASA SP-5051
N69-14193 143 pp
Avail GPO 1968

Joining Ceramics and Graphite to Other Materials

R. M. Evans, R. E. Monroe, H. E. Pattee

NASA SP-5052
N69-14241 89 pp
Avail GPO 1968

Conference on Selected Technology for the Petroleum Industry

Selected aerospace technology for petroleum industry representatives—combustion, heat transfer, surface physics and chemistry, lubricants and bearings, hydrodynamics. Conference, December 1965.

NASA SP-5053
N66-33666 186 pp
Avail NTIS 1966

NASA Contributions to Bioinstrumentation Systems

B. Ettelson, M. Klagsbrun, D. Ukkestad, et al.

NASA SP-5054
N69-14860 101 pp
Avail GPO 1968

"Nonglassy" Inorganic Fibers and Composites

C. G. Harman

Theory and developments in fiber-reinforced composites, whiskers, fibers, and metal wires.

NASA SP-5055
N66-34367 44 pp
Avail NTIS 1966

Application of Biogeochemistry to Mineral Prospecting

NASA SP-5056
N69-10492 135 pp
Avail NTIS 1968

Selected Technology for the Electric Power Industry

Selected conference papers on NASA technology utilization for electric power industry. Conference, September 1968.

NASA SP-5057
N69-12575 334 pp
Avail NTIS 1968

NASA Contributions to Fluid-Film Lubrication

Survey of incompressible and compressible fluid film hydrostatic and hydrodynamic lubrication.

NASA SP-5058
N69-28592 202 pp
Avail GPO 1969

Solid Lubricants

M. E. Campbell

Survey of development in solid lubrication.

NASA SP-5059
N72-25476 140 pp
Avail GPO 1972

Some New Metal and Metal-Ceramic Composites

S. Korman

NASA SP-5060
N67-13531 31 pp
Avail NTIS 1966

Commercial Potentials of Semipermeable Membranes

*E. J. Henley, H. K. Staffin,
S. B. Tuwiner*

Semipermeable membrane technology for commercial and industrial applications.

NASA SP-5061
N67-17822 47 pp
Avail NTIS 1967

High-Velocity Metalworking

*H. M. Gadberry, J. B. Loser,
M. C. Noland, et al.*

High velocity electromagnetic, electrohydraulic, explosive, and pneumatic-mechanical methods of metal working.

NASA SP-5062
N67-26560 187 pp
Avail GPO 1967

Vacuum Switchgear

W. S. Emmerich

Survey of vacuum switchgear technology.

NASA SP-5063
N67-18626 41 pp
Avail NTIS 1967

NASA Contributions to Metal Joining

J. Heuschkel, W. J. Reichenacker

Survey of NASA supported metals joining research having industrial applications.

NASA SP-5064
N67-17823 141 pp
Avail NTIS 1967

Selected Machining and Metal Fabricating Technology

Machine tools and metal fabricating technology developments.

NASA SP-5065
N67-25855 30 pp
Avail NTIS 1967

Adhesives, Sealants, and Gaskets

S. N. Glarum, R. B. Perkins

Adhesives, sealants, and gaskets developed to operate in space environment.

NASA SP-5066
N67-16060 63 pp
Avail NTIS 1967

Assessing Technology Transfer

G. J. Howick, R. L. Lesher

Transfer and utilization of new technology in United States.

NASA SP-5067
N67-13187 121 pp
Avail NTIS 1966

Properties and Current Applications of Magnesium-Lithium Alloys

P. D. Frost, R. J. Jackson

Physical properties, metallurgical processes, and applications of magnesium-lithium alloys.

NASA SP-5068
N67-22072 51 pp
Avail NTIS 1967

Mathematical Computer Programs

J. Arnold, T. Leth, J. Simpson

Mathematical programs and programming techniques for digital computer operations.

NASA SP-5069
N67-14111 26 pp
Avail NTIS 1966

Teleoperator Controls

W. R. Corliss, E. G. Johnsen

Engineering problems survey on teleoperator control systems.

NASA SP-5070
N69-21478 169 pp
Avail NTIS 1968

Induction Heating Advances: Applications to 5800°F

A. F. Leatherman, D. E. Stutz

Technology utilization of induction heating systems up to 5800°F.

NASA SP-5071
N69-23643 46 pp
Avail GPO 1969

Air Pollution Monitoring Instrumentation

A. Lieberman, P. Schipma

Air pollution monitoring instrumentation developed for aerospace uses surveyed for industrial applications.

NASA SP-5072
N69-24751 78 pp
Avail NTIS 1969

Pavement Grooving and Traction Studies

Runway and highway pavement grooving and traction studies. Conference, November 1968.

NASA SP-5073
N69-20451 512 pp
Avail NTIS 1969

Clean Room Technology

J. W. Useller

Clean room technology for control of contaminants for component reliability.

NASA SP-5074
N69-33775 66 pp
Avail GPO 1969

Aerospace Related Technology

Technology utilization by industries of aerospace sciences and systems. Conference, May 1969.

NASA SP-5075
N69-31946 177 pp
Avail NTIS 1969

Contamination Control Handbook

NASA SP-5076
N70-13566 314 pp
Avail NTIS 1969

Potting Electronic Modules

R. E. Keith

Developments in technology of encapsulating, potting, or embedding electronic modules.

NASA SP-5077
N70-16824 72 pp
Avail GPO 1969

Biomedical Research and Computer Application in Manned Space Flight

J. F. Lindsey, J. C. Townsend

Advanced application of computers for biomedical research in manned space flight.

NASA SP-5078
N71-27719 206 pp
Avail GPO 1971

Constructing Inexpensive Automatic Picture-Transmission Ground Stations

C. H. Vermillion

Equipment specifications and engineering drawings for automatic picture transmission ground stations.

NASA SP-5079
N68-19624 68 pp
Avail NTIS 1968

Weather Satellite Picture Receiving Stations

C. H. Vermillion

Procurement and construction of automatic picture transmission ground station equipment for ESSA and Nimbus transmission.

NASA SP-5080
N69-31985 107 pp
Avail NTIS 1969

Advancements in Teleoperator Systems

Proceedings from colloquium on transfer of teleoperator device technology. February 1969.

NASA SP-5081
N70-28670 242 pp
Avail NTIS 1970

Nondestructive Testing—Trends and Techniques

Nondestructive testing and inspection methods using infrared microscopy, x-ray television, and ultrasonic measurements.

NASA SP-5082
N67-23667 132 pp
Avail NTIS 1967

Analytical Chemistry Instrumentation

*L. A. Cavanagh, R. F. Muraca,
J. S. Whittick*

Instrumentation for chemical analysis of planetary environment and extraterrestrial life.

NASA SP-5083
N67-36738 141 pp
Avail NTIS 1967

Machining and Grinding of Ultrahigh-Strength Steels and Stainless Steel Alloys

*F. W. Boulger, J. A. Gurklis,
C. T. Olofson*

NASA SP-5084
N68-21241 217 pp
Avail NTIS 1968

Adhesive Bonding of Stainless Steels Including Precipitation-Hardening Stainless Steels

R. E. Keith, R. C. Martin, M. D. Randall
Organic and inorganic adhesives for bonding of stainless steels and precipitation hardened stainless steels.

NASA SP-5085
N68-20056 125 pp
Avail NTIS 1966

Shaping of Precipitation-Hardening Stainless Steels by Casting and Powder-Metallurgy

V. D. Barth, J. G. Kura, H. O. McIntire

NASA SP-5086
N68-19307 51 pp
Avail NTIS 1968

Welding of Precipitation-Hardening Stainless Steels

R. M. Evans, D. C. Martin, J. J. Vagi

NASA SP-5087
N68-21429 194 pp
Avail NTIS 1968

Deformation Processing of Precipitation-Hardening Stainless Steels

*F. W. Boulger, A. F. Gerds,
D. E. Strohecker*

NASA SP-5088
N68-21917 278 pp
Avail NTIS 1968

Thermal and Mechanical Treatment for Precipitation-Hardening Stainless Steels

A. M. Hall, A. F. Hoenie, C. J. Slunder

NASA SP-5089
N68-20433 207 pp
Avail NTIS 1967

Surface Treatments for Precipitation-Hardening Stainless Steels

Hard surfacing, electroplating, electrodeless plating, carburizing, nitriding, burnishing, explosive hardening, planishing, and peening of precipitation-hardenable stainless steels.

NASA SP-5090
N68-19343 64 pp
Avail NTIS 1967

A New Aluminum Sand Casting Alloy of High Toughness (M-45)

R. A. Wood

High toughness aluminum sand casting alloy for cryogenic applications.

NASA SP-5091
N70-41456 34 pp
Avail GPO 1970

Hydrogen Leak and Fire Detection

V. H. Dayan, R. L. Proffit, B. Rosen

NASA SP-5092
N70-40917 88 pp
Avail NTIS 1970

Acoustics Technology

S. W. Athey

Survey on acoustics technology emphasizing noise reduction and human tolerances.

NASA SP-5093
N71-14307 138 pp
Avail GPO 1970

Implantable Biotelemetry Systems

T. B. Fryer

Biomedical telemetric systems for monitoring physiological parameters of animals.

NASA SP-5094
N71-27983 119 pp
Avail GPO 1970

Vacuum Melting and Casting of Superalloys

*C. A. Alexander, J. M. Blocher, Jr.,
E. L. Foster, et al.*

Composition, properties, and applications of superalloys and techniques for vacuum melting and vacuum casting procedures.

NASA SP-5095
N71-25891 179 pp
Avail NTIS 1971

Materials for Improved Fire Safety

Materials for improved fire safety with application to design and development of spacecraft and support equipment. Conference, May 1970.

NASA SP-5096
N72-16409 209 pp
Avail GPO 1971

Uses of Ceramics in Microelectronics

*W. R. Bratschun, A. J. Mountvala,
A. G. Pincus*

Survey of uses of ceramics in microelectronics for technology utilization.

NASA SP-5097
N72-13495 174 pp
Avail GPO 1971

Powder Metallurgy in Aerospace Research

H. W. Blakeslee

Methodology and results of powder metallurgy for nonaerospace utilization.

NASA SP-5098
N72-17499 173 pp
Avail GPO 1971

Photography Equipment and Techniques: A Survey of NASA Developments

A. J. Derr

Application of NASA developed techniques, photographic film, and photographic equipment to ecological problems.

NASA SP-5099
N73-18437 188 pp
Avail GPO 1972

Shock and Vibration Technology With Applications to Electrical Systems

R. L. Esbleman

Transfer of shock and vibration technology for electrical systems to nonaerospace use.

NASA SP-5100
N72-30200 170 pp
Avail GPO 1972

Welding and Brazing of Nickel and Nickel-Base Alloys: A Report

*J. E. Mortland, R. M. Evans,
R. E. Monroe*

Bonding of four types of nickel-base materials using welding and brazing techniques.

NASA SP-5101
N72-30466 89 pp
Avail GPO 1972

Technology of Forced Flow and Once-Through Boiling

H. F. Poppendieck, C. M. Sabin

NASA SP-5102
N75-22630 311 pp
Avail NTIS 1975

Selected Technology for the Gas Industry

General future of fossil fuels in America, exploration for fossil and nuclear fuels from orbital altitudes, advanced energy systems. Conference, March 1975.

NASA SP-5103
N75-32584 407 pp
Avail NTIS 1975

An RC Active Filter Design Handbook

G. J. Deboo

Simplified procedures for readers with minimum knowledge of circuit design and filter theory.

NASA SP-5104
N78-18312 181 pp
Avail NTIS 1977

Advances in Sterilization and Decontamination

NASA SP-5105
N78-16587 190 pp
Avail NTIS 1978

Thermal and Mechanical Treatments for Nickel and Some Nickel-Base Alloys: Effects on Mechanical Properties

A. M. Hall, V. F. Beubring

Heat treating and working nickel and nickel alloys, and effects of these operations on mechanical properties.

NASA SP-5106
N72-29562 110 pp
Avail GPO 1972

Selected Developments in Laser Wire Stripping

Operation of mechanical and thermal strippers, early development of laser wire strippers, development of laser wire stripping for the Space Shuttle.

NASA SP-5107
N78-16353 39 pp
Avail NTIS 1977

Systematic Control of Nonmetallic Materials for Improved Fire Safety: A Report

Nonmetallic materials fire safety criteria for application in Apollo spacecraft design.

NASA SP-5109
N72-28566 38 pp
Avail GPO 1972

55-Nitinol—The Alloy With a Memory: Its Physical Metallurgy, Properties, and Applications: A Report

*C. M. Jackson, H. J. Wagner,
R. J. Wasilewski*

Metallurgy, characteristic properties, and industrial applications of nickel titanium alloy with shape memory.

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Sputtering and Ion Plating

Conference, March 1972.

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T. M. Weathers

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Principles and applications of nondestructive tests.

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J. B. Berkowitz, N. H. Emerson

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B. J. Crowe

Construction, operation, and applications of fuel cells to show advantages and limitations.

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D. D. Dudley

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Development of externally rechargeable pacemaker, use of ferrofluids in separation of nonferrous metals, development of breathing system for firefighters.

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Technology Utilization Program Report, 1974

O. Carlson, L. Dosa, W. Leavitt

Adaptation of technological innovations from the NASA space program to industrial and domestic use.

NASA SP-5120
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Technology Utilization Program Report, 1975

N. P. Ruzic

Space spinoffs for business and personal use.

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M. L. Seccomb

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Management standards for electrical power control during procurement and use of space vehicles in Apollo project.

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Weight/performance management survey manual for Apollo project.

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Basic fundamentals applying to evaluation of reliability program effectiveness.

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NASA SP-6504
N67-90166 43 pp
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Parts and Materials Application Review for Space Systems

*R. E. Boss, J. P. Craig,
S. J. Henkel, Jr.*

Parts and materials application review for project management of space systems engineering.

NASA SP-6505
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NASA SP-6509
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Bibliographies

Contract Number Index to Reports Announced in STAR

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NASA SP-7001
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Published annually from 1964 to 1967.

NASA SP-7002
Avail NTIS

Lunar Surface Studies: A Continuing Bibliography

Published annually from 1964 to 1968.

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Communications Satellites: A Continuing Bibliography

Published annually from 1964 to 1968.

NASA SP-7004
Avail NTIS

A Selected Listing of NASA Scientific and Technical Reports for 1963

NASA SP-7005
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Avail NTIS 1964

Bibliographies on Aerospace Science: A Continuing Bibliography

Published in 1964, 1965, 1966, 1968.

NASA SP-7006
Avail NTIS

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NASA SP-7007.
N64-28073 19 pp
Avail GPO 1963

Preparing Contractor Reports for NASA: Technical Illustrating

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N64-26749 27 pp
Avail GPO 1964

Lasers and Masers: A Continuing Bibliography

Published annually from 1965 to 1968.

NASA SP-7009
N65-25599 283 pp
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S. Katzoff

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N64-26421 30 pp
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Published monthly.*

NASA SP-7011
Avail NTIS

The International System of Units: Physical Constants and Conversion Factors

E. A. Mechtly

Tables of conversion factors and physical constants in International System of Units.

NASA SP-7012
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Avail GPO 1973

NASA Publications Manual, 1974

NASA SP-7013
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Avail GPO 1974

Bibliography Related to Human Factors System Program, July 1962-February 1964

R. J. Potocko

NASA SP-7014
N64-28317 242 pp
Avail NTIS 1964

Extraterrestrial Life: A Bibliography

Part I. Report Literature

NASA SP-7015
N65-16598 80 pp
Avail NTIS 1964

Part II. Published Literature

NASA SP-7015
N66-16566 345 pp
Avail NTIS 1965

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Guide to the Subject Indexes for Scientific and Technical Aerospace Reports

Guide to subject indexes for aerospace scientific and technological information processing and retrieval.

NASA SP-7016
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G. Halpert, W. H. Webster, Jr.

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A Selected Listing of NASA Scientific and Technical Reports for 1966

NASA SP-7028
N67-29260 2078 pp
Avail GPO 1967

NASA Scientific and Technical Reports for 1967: A Selected Listing

NASA SP-7029
N68-29039 424 pp
Avail NTIS 1968

NASA Thesaurus

Subject terms for indexing scientific and technical information.

Volume I. Alphabetical Listing, A-L

NASA SP-7030
N68-11307 441 pp
Avail NTIS 1967

Volume II. Alphabetical Listing, M-Z

NASA SP-7030
N68-11308 428 pp
Avail NTIS 1967

Volume III. Appendixes

NASA SP-7030
N68-11309 651 pp
Avail NTIS 1967

Properties of Selected Radioisotopes. Volume I: Unclassified Literature

J. Epstein, D. Harris

Annotated bibliography of nuclear, chemical, and physical properties of nine radioactive isotopes.

NASA SP-7031
N68-29959 189 pp
Avail NTIS 1968

Properties of Selected Radioisotopes. Volume II: Classified Literature

J. Epstein, D. Harris

NASA SP-7032 46 pp
X69-50006 1968

NASA Scientific and Technical Reports for 1968: A Selected Listing

NASA SP-7033
N69-29492 453 pp
Avail NTIS 1969

R and D Reporting: Guidance for Technical Monitors of NASA Contracts

Options and information resources open to NASA monitors.

NASA SP-7034
N70-14397 16 pp
Avail NTIS 1969

NASA Scientific and Technical Reports and Publications for 1969: A Selected Listing

Bibliographic citations and abstracts of NASA scientific and technical reports with indexes.

NASA SP-7035
N70-34702 950 pp
Avail GPO 1970

Remote Sensing of Earth Resources: A Literature Survey With Indexes

Annotated bibliography of literature on remote sensing of Earth resources announced between January/February 1962 and 1970.

NASA SP-7036
N70-41047 1220 pp
Avail NTIS 1970

Remote Sensing of Earth Resources (Supplement)

Section 1. Abstracts

NASA SP-7036(01)
N75-25235 654 pp
Avail NTIS 1975

Section 2. Indexes

NASA SP-7036(01)
N75-25236 402 pp
Avail NTIS 1975

Aeronautical Engineering: A Special Bibliography

Published monthly.*

NASA SP-7037
Avail NTIS

Significant NASA Inventions Available for Licensing in Foreign Countries

Published in 1971, 1973, 1974, 1975, 1976, 1977.

NASA SP-7038
Avail GPO

NASA Patent Abstracts Bibliography: A Continuing Bibliography

Published semiannually.*

NASA SP-7039
Avail NTIS

NASA Thesaurus Alphabetical Update

Thesaurus of postable and nonpostable subject terms currently approved for use in NASA scientific and technical information system.

NASA SP-7040
N72-15923 619 pp
Avail NTIS 1971

* Available through NTIS subscription service.

Earth Resources: A Continuing Bibliography

Published quarterly. *

NASA SP-7041
Avail NTIS

Energy: A Special Bibliography With Indexes

NASA SP-7042
N74-29337 534 pp
Avail NTIS 1974

Energy: A Continuing Bibliography With Indexes

Published quarterly. *

NASA SP-7043
Avail NTIS

Secondary Aerospace Batteries and Battery Materials: A Bibliography (1969-1974)

*P. McDermott, G. Halpert,
S. Ekpanyaskun, et al.*

NASA SP-7044
N77-16437 161 pp
Avail NTIS 1976

Technology for Large Space Systems: A Continuing Bibliography

NASA SP-7046
N79-20146 164 pp
Avail NTIS 1979

NASA Thesaurus

Volume I. Alphabetical Listing

NASA SP-7050
N76-17992 820 pp
Avail NTIS 1976

Volume II. Access Vocabulary

NASA SP-7050
N76-17993 442 pp
Avail NTIS 1976

NASA Guidelines on Report Literature

NASA seeks for inclusion in its Scientific and Technical Information System research reports, conference proceedings, meeting papers, monographs, and doctoral and post-graduate theses which relate to the NASA mission and objectives. Topics of interest to NASA are presented.

NASA SP-7200
N79-13914 27 pp
Avail NTIS 1978

Management: A Continuing Literature Survey With Indexes

Published annually. *

NASA SP-7500
Avail NTIS

The Systems Approach to Management. An Annotated Bibliography With Indexes

NASA SP-7501
N69-34917 69 pp
Avail NTIS 1969

OGO Program Summary: The Orbiting Geophysical Observatories

J. E. Jackson, J. I. Vette

NASA SP-7601
N76-19643 307 pp
Avail NTIS 1975

* Available through NTIS subscription service.

Space Vehicle Design Criteria

Buffeting During Atmospheric Ascent

Aeroelastic spacecraft design to minimize buffeting during atmospheric ascent.

NASA SP-8001
N71-20473 19 pp
Avail NTIS 1970

Flight-Loads Measurements During Launch and Exit

NASA SP-8002
N66-85660 7 pp
Avail NTIS 1964

Flutter, Buzz, and Divergence

NASA SP-8003
N70-71604 10 pp
Avail NTIS 1964

Panel Flutter

Criteria for predicting, preventing, and evaluating panel flutter.

NASA SP-8004
N73-11932 52 pp
Avail NTIS 1972

Solar Electromagnetic Radiation

Values for solar constant and solar spectral irradiance based on air and spaceborne observations for use in design of spacecraft, space vehicles, subsystems, and experiments.

NASA SP-8005
N71-30888 36 pp
Avail NTIS 1971

Local Steady Aerodynamic Loads During Launch and Exit

NASA SP-8006
N70-71605 12 pp
Avail NTIS 1965

Buckling of Thin-Walled Circular Cylinders

Predicting buckling of thin-walled, uniform stiffened and unstiffened circular cylindrical shells under static loading.

NASA SP-8007
N69-23320 58 pp
Avail NTIS 1968

Prelaunch Ground Wind Loads

NASA SP-8008
N70-71628 16 pp
Avail NTIS 1965

Propellant Slosh Loads

NASA SP-8009
N69-14553 188 pp
Avail NTIS 1968

Models of Mars Atmosphere (1974)

NASA SP-8010
N75-19107 52 pp
Avail NTIS 1974

Models of Venus Atmosphere (1972)

Engineering models of Venus atmosphere, based on theory and measured data.

NASA SP-8011
N73-16824 63 pp
Avail NTIS 1972

Natural Vibration Model Analysis

J. S. Archer

Natural vibration model analysis as related to space vehicle design criteria.

NASA SP-8012
N69-22773 35 pp
Avail NTIS 1968

Meteoroid Environment Model—1969 (Near Earth to Lunar Surface)

Meteoroid environment model for cometary origin near Earth to lunar surface.

NASA SP-8013
N69-40326 35 pp
Avail NTIS 1969

Entry Thermal Protection

NASA SP-8014
N69-71545 37 pp
Avail NTIS 1968

Guidance and Navigation for Entry Vehicles

Guidance and navigation for atmospheric entry phase of vehicles.

NASA SP-8015
N69-19518 47 pp
Avail NTIS 1968

Effects of Structural Flexibility on Spacecraft Control Systems

Design and test criteria regarding structural flexibility effects on spacecraft stability and control systems.

NASA SP-8016
N69-37030 70 pp
Avail NTIS 1969

Magnetic Fields—Earth and Extraterrestrial

Strength and direction data on Earth and extraterrestrial magnetic fields for guidance in vehicle design.

NASA SP-8017
N69-40269 70 pp
Avail NTIS 1969

Spacecraft Magnetic Torques

Magnetic torque resulting from interaction between magnetic properties of spacecraft and ambient magnetic field.

NASA SP-8018
N69-30339 55 pp
Avail NTIS 1969

Buckling of Thin-Walled Truncated Cones

Buckling of thin-walled truncated conical shells under static loads.

NASA SP-8019
N69-24131 32 pp
Avail NTIS 1968

Surface Models of Mars (1975)

NASA SP-8020
N75-32989 84 pp
Avail NTIS 1975

Models of Earth's Atmosphere (90 to 2500 km)

Model for predicting atmospheric parameters at altitudes between 90 and 2500 km.

NASA SP-8021
N73-27325 63 pp
Avail NTIS 1973

Staging Loads

Analysis of loads produced on spacecraft by staging operations and practices to ensure that staging loads are included in spacecraft design.

NASA SP-8022
N71-28634 30 pp
Avail NTIS 1969

Lunar Surface Models

Engineering models of lunar topography including dielectric, optical, terrain, and crater models.

NASA SP-8023
N70-18901 60 pp
Avail NTIS 1969

Spacecraft Gravitational Torques

Gravitational torque effects and analysis for satellite design.

NASA SP-8024
N70-23418 51 pp
Avail NTIS 1969

Solid Rocket Motor Metal Cases

Guidelines and practices for design of solid rocket motor cases.

NASA SP-8025
N70-29740 103 pp
Avail NTIS 1970

Spacecraft Star Trackers

Design criteria for spacecraft star trackers.

NASA SP-8026
N70-38721 69 pp
Avail NTIS 1970

Spacecraft Radiation Torques

Radiation torque sources and effects on spacecraft and spacecraft attitude control system design.

NASA SP-8027
N71-24312 41 pp
Avail NTIS 1969

Entry Vehicle Control

Stabilization and control systems for reentry vehicles.

NASA SP-8028
N70-28538 51 pp
Avail NTIS 1969

Aerodynamic and Rocket-Exhaust Heating During Launch and Ascent

NASA SP-8029
N70-18828 33 pp
Avail NTIS 1969

Transient Loads From Thrust Excitation

Analysis of transient loads produced by ignition of rocket engine during launch and flight operations for solid and liquid propellant rocket engines.

NASA SP-8030
N71-24281 28 pp
Avail NTIS 1969

Slosh Suppression

Slosh suppression devices for aerospace vehicle control stability.

NASA SP-8031
N70-21848 36 pp
Avail NTIS 1969

Buckling of Thin-Walled Doubly Curved Shells

Criteria and recommended practices for design of compressively loaded thin-walled doubly curved shells.

NASA SP-8032
N70-22356 35 pp
Avail NTIS 1969

Spacecraft Earth Horizon Sensors

Engineering design of spacecraft Earth horizon sensors.

NASA SP-8033
N70-35570 49 pp
Avail NTIS 1969

Spacecraft Mass Expulsion Torques

Spacecraft design considerations associated with disturbance torques caused by mass expulsion.

NASA SP-8034
N70-36852 39 pp
Avail NTIS 1969

Wind Loads During Ascent

Determining wind induced structural loads on space vehicles during ascent.

NASA SP-8035
N70-36953 36 pp
Avail NTIS 1970

Effects of Structural Flexibility on Launch Vehicle Control Systems

Structural flexibility effects on launch vehicle control systems and design criteria.

NASA SP-8036
N70-39774 51 pp
Avail NTIS 1970

Assessment and Control of Spacecraft Magnetic Fields

NASA SP-8037
N71-13078 30 pp
Avail NTIS 1970

Meteoroid Environment Model—1970 (Interplanetary and Planetary)

Astronomical meteoroid environment model for space missions.

NASA SP-8038
N71-17525 69 pp
Avail NTIS 1970

Solid Rocket Motor Performance Analysis and Prediction

Current design practices and technology for predicting propulsion performance of solid propellant rocket engine designs.

NASA SP-8039
N72-18785 113 pp
Avail NTIS 1971

Fracture Control of Metallic Pressure Vessels

Design criteria for fracture optimization of metallic pressure vessels.

NASA SP-8040
N71-14130 65 pp
Avail NTIS 1970

Captive-Fired Testing of Solid Rocket Motors

Captive-fired testing of solid rocket motors for design criteria.

NASA SP-8041
N71-30866 101 pp
Avail NTIS 1971

Meteoroid Damage Assessment

Meteoroid damage determination and spacecraft structure protection and reliability.

NASA SP-8042
N71-25070 50 pp
Avail NTIS 1970

Design-Development Testing

Criteria and procedures for testing spacecraft structural elements and components.

NASA SP-8043
N71-25069 35 pp
Avail NTIS 1970

Qualification Testing

Qualification tests conducted on flight quality components, subsystems, and systems to prove that structural design requirements have been achieved.

NASA SP-8044
N71-29045 30 pp
Avail NTIS 1970

Acceptance Testing

Standardization of structural acceptance tests conducted on flight hardware.

NASA SP-8045
N71-31033 34 pp
Avail NTIS 1970

Landing Impact Attenuation for Non-Surface-Planing Landers

NASA SP-8046
N70-38294 47 pp
Avail NTIS 1970

Spacecraft Sun Sensors

Design criteria and performance specifications for spacecraft Sun sensors.

NASA SP-8047
N71-17756 42 pp
Avail NTIS 1970

Liquid Rocket Engine Turbopump Bearings

Bearing requirements for liquid rocket engine turbopumps.

NASA SP-8048
N71-28011 85 pp
Avail NTIS 1971

The Earth's Ionosphere

Space vehicle design with considerations for ionospheric electron and ionic density, plasma temperature of ionosphere, and neutral component.

NASA SP-8049
N71-30849 49 pp
Avail NTIS 1971

Structural Vibration Prediction

Internal loads and stresses caused by space vehicle vibration resulting from induced or natural environments.

NASA SP-8050
N71-19281 41 pp
Avail NTIS 1970

Solid Rocket Motor Igniters

Design approach for solid propellant rocket igniters.

NASA SP-8051
N71-30346 111 pp
Avail NTIS 1971

Liquid Rocket Engine Turbopump Inducers

Design criteria for liquid rocket engine turbopump inducers.

NASA SP-8052
N71-34950 255 pp
Avail NTIS 1971

Nuclear and Space Radiation Effects on Materials

Effects of nuclear and space radiation on mechanical, thermal, and optical properties of spacecraft structural materials.

NASA SP-8053
N71-25034 48 pp
Avail NTIS 1970

Space Radiation Protection

Criteria and procedures for determining dosage of penetrating space radiation and design of appropriate protection for space vehicles.

NASA SP-8054
N71-25075 50 pp
Avail NTIS 1970

Prevention of Coupled Structure-Propulsion Instability (Pogo)

NASA SP-8055
N71-26080 51 pp
Avail NTIS 1970

Flight Separation Mechanisms

Criteria and recommended practices for designing and testing flight separation mechanisms.

NASA SP-8056
N71-28986 39 pp
Avail NTIS 1970

Structural Design Criteria Applicable to A Space Shuttle

Updated structural design criteria for manned space shuttle missions.

NASA SP-8057
N73-17881 99 pp
Avail NTIS 1972

Spacecraft Aerodynamic Torques

Assessment of disturbance torques due to interaction of spacecraft with atmosphere in long duration orbits for use in design of spacecraft attitude control systems.

NASA SP-8058
N71-25935 37 pp
Avail NTIS 1971

Spacecraft Attitude Control During Thrusting Maneuvers

NASA SP-8059
N71-26198 51 pp
Avail NTIS 1971

Compartment Venting

Analysis of internal and external gas venting system of spacecraft.

NASA SP-8060
N71-28166 31 pp
Avail NTIS 1970

Interactions With Umbilicals and Launch Stand

Criteria and recommendations to ensure compatible interfaces between space vehicle structure and launch stand ground support equipment.

NASA SP-8061
N71-28829 23 pp
Avail NTIS 1970

Entry Gasdynamic Heating

Determining heat transfer to space vehicles entering planetary atmospheres for proper design and thermal protection.

NASA SP-8062
N71-31179 60 pp
Avail NTIS 1971

Lubrication, Friction, and Wear

Lubrication, friction, and wear processes analyzed for space vehicle design criteria.

NASA SP-8063

N71-31471 180 pp
Avail NTIS 1971

Solid Propellant Selection and Characterization

Analysis of properties of solid rocket propellants and parameters which affect choice of propellant for specific applications.

NASA SP-8064

N72-13737 116 pp
Avail NTIS 1971

Tubular Spacecraft Booms (Extendible, Reel Stored)

Development of reliable and operational design programs for spacecraft guidance and control.

NASA SP-8065

N71-33330 52 pp
Avail NTIS 1971

Deployable Aerodynamic Deceleration Systems

Criteria and recommended practices for design, selection, analysis, and testing of deployable aerodynamic deceleration systems.

NASA SP-8066

N71-31303 88 pp
Avail NTIS 1971

Earth Albedo and Emitted Radiation

Global annual averages of Earth albedo and radiation used to estimate long term effects on space vehicle equipment and surfaces.

NASA SP-8067

N71-33104 48 pp
Avail NTIS 1971

Buckling Strength of Structural Plates

Designs for determining buckling strength of structural plates for spacecraft.

NASA SP-8068

N71-33331 50 pp
Avail NTIS 1971

The Planet Jupiter (1970)

Visible, infrared, and radio observations of Jupiter using Earth based and airborne equipment.

NASA SP-8069

N72-17909 93 pp
Avail NTIS 1971

Spaceborne Digital Computer Systems

Design criteria for guidance and control spaceborne computer selection including physical and functional characteristics and reliability.

NASA SP-8070

N71-33679 82 pp
Avail NTIS 1971

Passive Gravity-Gradient Libration Dampers

NASA SP-8071

N71-34590 60 pp
Avail NTIS 1971

Acoustic Loads Generated by the Propulsion System

Design of flightworthy space vehicle.

NASA SP-8072

N71-33195 54 pp
Avail NTIS 1971

Solid Propellant Grain Structural Integrity Analysis

NASA SP-8073

N74-19389 114 pp
Avail NTIS 1973

Spacecraft Solar Cell Arrays

NASA SP-8074

N71-37630 54 pp
Avail NTIS 1971

Solid Propellant Processing Factors in Rocket Motor Design

NASA SP-8075

N72-31767 82 pp
Avail NTIS 1971

Solid Propellant Grain Design and Internal Ballistics

NASA SP-8076

N73-15804 110 pp
Avail NTIS 1972

Transportation and Handling Loads

Criteria and recommended practices for predicting and verifying transportation and handling loads for space vehicle structure or major segments.

NASA SP-8077

N72-12891 48 pp
Avail NTIS 1971

Spaceborne Electronic Imaging Systems

Criteria and recommended practices for designing spaceborne elements of electronic imaging systems.

NASA SP-8078
N72-14169 71 pp
Avail NTIS 1971

Structural Interaction With Control Systems

Predictions of structural interrelationships with spacecraft active and passive control systems to determine optimum design.

NASA SP-8079
N72-17920 56 pp
Avail NTIS 1971

Liquid Rocket Pressure Regulators, Relief Valves, Check Valves, Burst Discs, and Explosive Valves

NASA SP-8080
N74-10724 123 pp
Avail NTIS 1973

Liquid Propellant Gas Generators

Design of gas turbine for furnishing hot gases for turbine drives and analysis of limitations imposed by thermal stresses.

NASA SP-8081
N73-27705 110 pp
Avail NTIS 1972

Stress-Corrosion Cracking in Metals

Criteria and recommended practices for preventing stress-corrosion cracking in spacecraft structures.

NASA SP-8082
N72-17928 42 pp
Avail NTIS 1971

Discontinuity Stresses in Metallic Pressure Vessels

NASA SP-8083
N72-26933 69 pp
Avail NTIS 1971

Surface Atmospheric Extremes (Launch and Transportation Areas)

Effects of atmospheric surface parameters on space vehicle design and operation.

NASA SP-8084
N74-30047 77 pp
Avail NTIS 1974

The Planet Mercury (1971)

Physical properties of Mercury, including atmosphere and surface, for space vehicle design criteria.

NASA SP-8085
N72-20799 63 pp
Avail NTIS 1972

Space Vehicle Displays Design Criteria

Design and evaluation of spacecraft display guidance and control systems.

NASA SP-8086
N72-26337 45 pp
Avail NTIS 1972

Liquid Rocket Engine Fluid-Cooled Combustion Chambers

Monograph for design and development of combustion chambers for liquid propellant rocket engines.

NASA SP-8087
N73-31697 120 pp
Avail NTIS 1972

Liquid Rocket Metal Tanks and Tank Components

NASA SP-8088
N75-13022 165 pp
Avail NTIS 1974

Liquid Rocket Engine Injectors

NASA SP-8089
N76-30284 130 pp
Avail NTIS 1976

Liquid Rocket Actuators and Operators

NASA SP-8090
N74-17785 158 pp
Avail NTIS 1973

The Planet Saturn (1970)

Saturn planet and environment data for spacecraft designers.

NASA SP-8091
N72-29840 103 pp
Avail NTIS 1972

Assessment and Control of Spacecraft Electromagnetic Interference

Design criteria relating to assessment and control of spacecraft electromagnetic interference.

NASA SP-8092
N72-26119 37 pp
Avail NTIS 1972

Solid Rocket Motor Internal Insulation

NASA SP-8093
N77-30171 124 pp
Avail NTIS 1976

Liquid Rocket Engine Valve Components

NASA SP-8094
N74-27276 150 pp
Avail NTIS 1973

Preliminary Criteria for the Fracture Control of Space Shuttle Structures

NASA SP-8095
N72-25851 16 pp
Avail NTIS 1971

Space Vehicle Gyroscope Sensor Application

Analysis of factors involved in specification, design, and evaluation of gyroscopes for spaceborne sensor applications.

NASA SP-8096
N73-12680 87 pp
Avail NTIS 1972

Liquid Rocket Valve Assemblies

NASA SP-8097
N74-26979 154 pp
Avail NTIS 1973

Effects of Structural Flexibility on Entry Vehicle Control Systems

NASA SP-8098
N72-29870 68 pp
Avail NTIS 1972

Combining Ascent Loads

Criteria and guidelines for combining loads during ascent phase of space flight.

NASA SP-8099
N73-11897 36 pp
Avail NTIS 1972

Liquid Rocket Engine Turbopump Gears

NASA SP-8100
N75-10166 117 pp
Avail NTIS 1974

Liquid Rocket Engine Turbopump Shafts and Couplings

NASA SP-8101
N74-14441 130 pp
Avail NTIS 1972

Space Vehicle Accelerometer Applications

NASA SP-8102
N73-26891 87 pp
Avail NTIS 1972

The Planets Uranus, Neptune, and Pluto (1971)

Influence of Uranus, Neptune, and Pluto environment on design of spacecraft probes.

NASA SP-8103
N73-11870 99 pp
Avail NTIS 1972

Structural Interaction With Transportation and Handling Systems

Space vehicle design to withstand adverse conditions involved in handling and transportation from factory to launch site.

NASA SP-8104
N73-21839 41 pp
Avail NTIS 1973

Spacecraft Thermal Environment

Guidance for assessment and control of spacecraft temperatures.

NASA SP-8105
N73-26890 48 pp
Avail NTIS 1973

Turbopump Systems for Liquid Rocket Engines

NASA SP-8107
N75-20470 168 pp
Avail NTIS 1974

Advanced Composite Structures

NASA SP-8108
N76-12115 107 pp
Avail NTIS 1974

Liquid Rocket Engine Centrifugal Flow Turbopumps

NASA SP-8109
N74-28961 116 pp
Avail NTIS 1973

Liquid Rocket Engine Turbines

NASA SP-8110
N74-34245 158 pp
Avail NTIS 1974

Assessment and Control of Electrostatic Charges

NASA SP-8111
N74-27534 53 pp
Avail NTIS 1974

Pressurization Systems for Liquid Rockets

NASA SP-8112
N76-22300 167 pp
Avail NTIS 1975

Liquid Rocket Engine Combustion Stabilization Devices

NASA SP-8113
N75-28247 127 pp
Avail NTIS 1974

Solid Rocket Thrust Vector Control

NASA SP-8114
N76-17194 200 pp
Avail NTIS 1974

Solid Rocket Motor Nozzles

NASA SP-8115
N76-20214 140 pp
Avail NTIS 1975

The Earth's Trapped Radiation Belts

NASA SP-8116
N75-22980 100 pp
Avail NTIS 1975

Gravity Fields of the Solar System

NASA SP-8117
N75-24608 79 pp
Avail NTIS 1975

Interplanetary Charged Particle Models (1974)

NASA SP-8118
N75-24607 47 pp
Avail NTIS 1975

Liquid Rocket Disconnects, Couplings, Fittings, Fixed Joints, and Seals

State of the art and design criteria for components used in liquid propellant rocket propulsion systems to contain and control the flow of fluids.

NASA SP-8119
N77-24191 164 pp
Avail NTIS 1976

Liquid Rocket Engine Nozzles

NASA SP-8120
N77-16108 120 pp
Avail NTIS 1976

Liquid Rocket Engine Turbopump Rotating-Shaft Seals

NASA SP-8121
N78-30584 160 pp
Avail NTIS 1978

The Environment of Titan (1975)

NASA SP-8122
N7628138 45 pp
Avail NTIS 1976

Liquid Rocket Lines, Bellows, Flexible Hoses, and Filters

NASA SP-8123
N78-16089 186 pp
Avail NTIS 1977

Liquid Rocket Engine Self-Cooled Combustion Chambers

NASA SP-8124
N78-21211 130 pp
Avail NTIS 1977

Liquid Rocket Engine Axial Flow Turbopumps

NASA SP-8125
N78-31164 127 pp
Avail NTIS 1978

Glossary of Terms and Table of Conversion Factors Used in Design of Chemical Propulsion Systems

NASA SP-8126
N80-17136 89 pp
Avail NTIS 1979

Specifications

NASA Specifications and Standards

NASA SP-9000

N67-34727

Avail NTIS

388 pp

1967

A Guide to NASA Data Handbooks

Handbooks, manuals, procedures, instructions, and related technical data publications in NASA CENTRAL Information System.

NASA SP-9001

N67-18003

Avail NTIS

190 pp

1967

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Reference Publications

Overall Loudness of Steady Sounds According to Theory and Experiment

W. L. Howes

A mathematical theory for calculating the loudness of any steady sound from information on its spectrum constructed from physical principles and psychological and physiological information on mammalian auditory systems.

NASA RP-1001
N79-25753 150 pp
Avail GPO 1979

Cryogenic Foam Insulation: Abstracted Publications

F. R. Williamson

The properties of foam materials and the use of foams as thermal insulation at cryogenic temperatures.

NASA RP-1002
N78-11200 171 pp
Avail NTIS 1977

Bibliography of Supersonic Cruise Aircraft Research (SCAR)

S. Hoffman

Propulsion, stratospheric emissions impact, structures and materials, aerodynamic performance, stability and control.

NASA RP-1003
N78-12895 102 pp
Avail NTIS 1977

Fronts and Frontogenesis as Revealed by High Time Resolution Data

A. E. Frank, D. A. Barber

Upper air sounding used to examine a cold front of average intensity.

NASA RP-1005
N77-30705 135 pp
Avail NTIS 1977

Correction Factors for On-Line Microprobe Analysis of Multielement Alloy Systems

J. Unnam, D. R. Tenney, W. D. Brewer

An on-line correction technique developed for the conversion of electron probe x-ray intensities into concentrations of emitting elements.

NASA RP-1006
N78-15236 216 pp
Avail NTIS 1977

Viking Lander Imaging Investigation: Picture Catalog of Primary Mission Experiment Data Record

R. B. Tucker

Images returned by the two Viking Landers during the primary phase of the Viking Mission.

NASA RP-1007
N78-20042 514 pp
Avail NTIS 1978

Lightning Protection of Aircraft

F. A. Fisher, J. A. Plumer

Potential lightning effects on aircraft and the means available to designers and operators to protect against the effects.

NASA RP-1008
N78-11024 530 pp
Avail NTIS 1977

An Introduction to Orbit Dynamics and Its Application to Satellite-Based Earth Monitoring Systems

D. R. Brooks

The long-term behavior of satellites studied at a level of complexity suitable for the initial planning phases of Earth monitoring missions.

NASA RP-1009
N78-12113 85 pp
Avail NTIS 1977

Chlorofluoromethanes and the Stratosphere

R. D. Hudson

Laboratory measurements, ozone measurements and trends, minor species and aerosol measurements, one-dimensional modeling, multidimensional modeling.

NASA RP-1010
N77-31694 268 pp
Avail NTIS 1977

Thermodynamic and Related Properties of Oxygen From the Triple Point to 300 K at Pressures to 1000 Bar

L. A. Weber

The results of an experimental program presented in the form of PVT data in the temperature range 58 to 300 K at pressures up to 800 bar. Tables of the derived thermodynamic properties on isobars to 1000 bar are given.

NASA RP-1011
N78-16119 164 pp
Avail NTIS 1977

Remote Sensing of Oceanic Parameters During the Skylab/Gamefish Experiment

K. H. Faller

Effort to demonstrate the feasibility of using remotely acquired information to assess and monitor the distribution of oceanic gamefish.

NASA RP-1012

N78-12644

43 pp

Avail NTIS

1977

Triple Point Determinations of Monomethylhydrazine and Nitrogen Tetroxide, 2.2 Percent by Weight Nitric Oxide

I. D. Smith, P. M. Dodge

Tests performed to ascertain the triple points of monomethylhydrazine and nitrogen tetroxide. New experimental values for liquid monomethylhydrazine vapor pressure for temperatures from 275.2 to 207.6 K. Tentative values for the effective freezing point of nitrogen tetroxide in spacelike conditions.

NASA RP-1013

N78-13234

16 pp

Avail NTIS

1977

An Outgassing Data Compilation of Spacecraft Materials

W. A. Campbell, Jr., R. S. Marriott, J. J. Park

Outgassing data derived from tests at 398 K (125°C) or 24 hours in vacuum for numerous materials for spacecraft use.

NASA RP-1014

N78-17151

181 pp

Avail NTIS

1978

Procedures for Gathering Ground Truth Information for a Supervised Approach to a Computer-Implemented Land Cover Classification of Landsat-Acquired Multispectral Scanner Data

A. T. Joyce

NASA RP-1015

N78-15549

48 pp

Avail NTIS

1978

The Use of Landsat Digital Data and Computer-Implemented Techniques for an Agricultural Application

A. T. Joyce, R. H. Griffin II

Agricultural applications procedures for use of Landsat digital data and other digitalized data.

NASA RP-1016

N78-21568

48 pp

Avail NTIS

1978

Stratospheric Warmings: Synoptic, Dynamic and General-Circulation Aspects

R. M. McInturff

Distinction between major and minor warmings, the importance of tropospheric-stratospheric interaction, the significance of the pressure-work term near the tropopause.

NASA RP-1017

N78-18630

173 pp

Avail NTIS

1978

Guide to a Condensed Form of NASTRAN

J. L. Rogers, Jr.

Limited capability form of NASTRAN level 16 to meet the needs of universities and small consulting firms. Can serve as a handbook for instructional courses in the use of NASTRAN or for users who need only the capability provided by the condensed form.

NASA RP-1019

N78-33791

297 pp

Avail NTIS

1978

Precision Positional Data of General Aviation Air Traffic in Terminal Air Space

W. E. Melson, Jr., L. C. Parker, A. M. Northam, et al.

Three-dimensional radar tracks of general aviation air traffic at three uncontrolled airports.

NASA RP-1020

N78-25048

13 pp

Avail NTIS

1978

A Bibliography on the Search for Extraterrestrial Intelligence

E. F. Mallove, M. M. Connors, R. L. Forward, et al.

A uniform compilation of works dealing with the search for extraterrestrial intelligence.

NASA RP-1021

N78-21019

135 pp

Avail NTIS

1978

Man's Impact on the Troposphere: Lectures in Tropospheric Chemistry

J. S. Levine, D. R. Schryer

Lectures covering a broad spectrum of current research in tropospheric chemistry, with particular emphasis on the interaction of measurements, modeling, and understanding of fundamental processes.

NASA RP-1022

N79-10634 371 pp

Avail NTIS 1978

Synoptic Analyses, 5-, 2-, and 0.4-Millibar Surfaces for July 1974 Through June 1976

Meteorological rocketsonde and satellite radiance data employed for analyses of a continuing series of high altitude constant pressure charts.

NASA RP-1023

N78-28748 330 pp

Avail NTIS 1978

Anthropometric Source Book

*E. Churchill, L. L. Laubach,
J. T. McConville, et al.*

Volume 1. Anthropometry for Designers. Application of anthropometry to design of clothing, equipment, and workspaces for manned space flight.

NASA RP-1024

N79-11734 603 pp

Avail NTIS 1978

Volume 2. A Handbook of Anthropometric Data. Data from surveys of 61 populations; 295 measured variables.

NASA RP-1024

N79-13711 428 pp

Avail NTIS 1978

Volume 3. Annotated Bibliography of Anthropometry

NASA RP-1024

N79-13712 130 pp

Avail NTIS 1978

Handbook on Astronaut Crew Motion Disturbances for Control System Design in Skylab

M. C. Kulas

The analyses and results pertinent to the characterization of the disturbances imparted to the Skylab vehicle by the T-013 crew motion experiments.

NASA RP-1025

N79-27237 196 pp

Avail NTIS 1979

An Assessment of the Effect of Super- sonic Aircraft Operations on the Stratospheric Ozone Content

*I. G. Poppoff, R. C. Whitten,
R. P. Turco, et al.*

An assessment of the potential effect on stratospheric ozone of an advanced supersonic transport operation using the most recent chemical reaction rate data.

NASA RP-1026

N78-30774 60 pp

Avail NTIS 1978

A New Dimension. Wallops Island Flight Test Range: The First Fifteen Years

J. A. Shortal

A record of the first fifteen years (1945-1959) of research and development tests that were performed at Wallops Island.

NASA RP-1028

N79-20166 784 pp

Avail NTIS 1978

The PR2D (Place, Route in 2-Dimen- sions) Automatic Layout Computer Program Handbook

T. M. Edge

NASA RP-1029

N79-71512 256 pp

Avail NIAC 1978

Molecules of Significance in Planetary Aeronomy

H. Moban

Spectroscopic information of the molecules of planetary interest. General conditions of planets and their atmospheres including the gaseous molecules.

NASA RP-1030

N79-22980 318 pp

Avail NTIS 1979

Catalog of Far-Ultraviolet Objective- Prism Spectrophotometry: Skylab Experiment S-019, Ultraviolet Stellar Astronomy

*K. G. Henize, J. D. Wray,
S. B. Parsons, et al.*

Approximately 1000 spectra representing 500 stars were measured and reduced to observed fluxes. Spectrophotometric results are tabulated for these 500 stars.

NASA RP-1031

N79-27057 545 pp

Avail NTIS 1979

Synoptic Analyses, 5-, 2-, 1-, and 0.4-Millibar Surfaces for July 1976 Through June 1977

Meteorological rocketsonde and satellite radiance data employed for analyses of a continuing series of high-altitude constant-pressure charts.

NASA RP-1032
N79-19569 226 pp
Avail NTIS 1978

Convective Rainfall Estimation From Digital GOES-1 Infrared Data

G. L. Sickler, A. H. Thompson

An investigation to determine the feasibility of developing an objective technique for estimating convective rainfall from digital GOES-1 infrared data.

NASA RP-1034
N79-31885 96 pp
Avail NTIS 1979

Survey and Bibliography on Attainment of Laminar Flow Control in Air Using Pressure Gradient and Suction

D. M. Bushnell, M. H. Tuttle

The survey, summaries of data for both ground and flight experiments, and abstracts of referenced reports.

NASA RP-1035
N79-33438 346 pp
Avail NTIS 1979

ALSEP Termination Report

J. R. Bates, W. W. Lauderdale, H. Kernaghan

Description of experiments and pertinent operational history, data processing and distribution, significant scientific findings.

NASA RP-1036
N79-22979 161 pp
Avail NTIS 1979

Collisionless Galaxy Simulations

F. Hohl, T. A. Zang, J. B. Müller

Computer experiments performed to determine the collapse and relaxation of initially spherical, uniform density and uniform velocity dispersion stellar systems.

NASA RP-1037
N79-24921 149 pp
Avail NTIS 1979

Review and Status of Liquid-Cooling Technology for Gas Turbines

G. J. Vanfossen, Jr., F. S. Stepka

Liquid-cooled systems and methods, assessment of the current technology status and requirements, comprehensive bibliography.

NASA RP-1038
N79-22427 31 pp
Avail NTIS 1979

Synthetic Aperture Radar/Landsat MSS Image Registration

H. E. Maurer, J. D. Oberholtzer, P. E. Anuta

Algorithms and procedures necessary to merge aircraft synthetic aperture radar (SAR) and Landsat multispectral scanner (MSS) imagery, design of a SAR/Landsat data merging system.

NASA RP-1039
N80-16405 233 pp
Avail NTIS 1979

NASA JSC Water Monitor System: City of Houston Field Demonstration

R. E. Taylor, E. L. Jeffers, D. H. Fricks

A water quality monitoring system with on-line and real time operation similar to the function in a spacecraft was investigated. Two major points were demonstrated: (1) the water monitor system has great potential in water monitoring and/or process control applications; and (2) the water monitor system represents a vast improvement over conventional (grab sample) water monitoring techniques.

NASA RP-1041
N79-28062 57 pp
Avail NTIS 1979

Performance Evaluation Method for Dissimilar Aircraft Design Using the Square of the Wing Span for Non-dimensional Comparisons of Aerodynamic Characteristics

H. J. Walker

A rationale for using the square of the wing-span rather than the wing reference area as a basis for nondimensional comparisons of the aerodynamic and performance characteristics of aircraft that differ substantially in platform and loading.

NASA RP-1042
N79-30139 72 pp
Avail NTIS 1979

Processing of On-Board Recorded Data for Quick Analysis of Aircraft Performance—Rotor Systems Research Aircraft

N. H. Michaud

A system of independent computer programs for the processing of digitized pulse code modulated and frequency modulated data.

NASA RP-1043
N79-33191 326 pp
Avail NTIS 1979

Wind Study for High Altitude Platform Design

T. W. Strganac

An analysis of upper air winds to define the wind environment at potential operating altitudes for high altitude powered platform concepts.

NASA RP-1044
N80-12661 288 pp
Avail NTIS 1979

The Physiological Basis for Spacecraft Environmental Limits

J. M. Waligora

Limits for operational environments in terms of acceptable physiological changes: contaminants, temperature, acceleration, noise, rf radiation, and weightlessness.

NASA RP-1045
N80-15788 229 pp
Avail NTIS 1979

Measurement of Aircraft Speed and Altitude

W. Gracey

Problems involved in measuring speed and altitude with pressure-actuated instruments (altimeter, airspeed indicator, true-airspeed indicator, Machmeter, and vertical-speed indicator).

NASA RP-1046
N80-24296 311 pp
Avail NTIS 1980

Measurement Techniques for Trace Metals in Coal-Plant Effluents: A Brief Review

J. J. Singh

The strong features and limitations of techniques for determining trace elements in aerosols emitted from coal plants.

NASA RP-1047
N79-33611 34 pp
Avail NTIS 1979

Procedure for Extraction of Disparate Data From Maps Into Computer Data Bases

B. G. Junkin

A procedure for extracting disparate sources of data from geographic maps, and for the conversion of these data into a suitable format for processing on a computer-oriented information system.

NASA RP-1048
N79-33858 23 pp
Avail NTIS 1979

The Stratosphere: Present and Future

R. D. Hudson, E. I. Reed

The three basic elements of stratospheric science-laboratory measurements, atmospheric observations, and theoretical studies.

NASA RP-1049
N80-14641 443 pp
Avail NTIS 1979

Classical Aerodynamic Theory

R. T. Jones

Theories of incompressible potential flow and research on the aerodynamic forces on wing and wing sections of aircraft and on airship hulls.

NASA RP-1050
N80-15033 308 pp
Avail NTIS 1979

Thermodynamic Properties of Nitrogen Gas Derived From Measurements of Sound Speed for Cryogenic Wind Tunnels

B. Younglove, R. D. McCarty

A virial equation of state for nitrogen was determined by use of newly measured speed-of-sound data and existing pressure-density-temperature data in a multiproperty-fitting technique.

NASA RP-1051
N80-14257 56 pp
Avail NTIS 1979

Sealed-Cell Nickel-Cadmium Battery Applications Manual

W. R. Scott, D. W. Rusta

The design, procurement, testing, and application of aerospace quality, hermetically sealed nickel-cadmium cells and batteries.

NASA RP-1052
N80-16095 533 pp
Avail NTIS 1979

Results of the August 1977 Soviet and American Meteorological Rocketsonde Intercomparison Held at Wallops Island, Virginia

*F. J. Schmidlin, J. R. Duke,
A. I. Ivanovsky, et al.*

A coordinated program of rocketsonde investigations along about 60° E and 70° W between the United States and U.S.S.R.

NASA RP-1053
N80-16682 193 pp
Avail NTIS 1980

Thunderstorm-Environment Interactions Determined With Three-Dimensional Trajectories

G. S. Wilson

Diagnostically determined three dimensional trajectories were used to reveal some of the scale interaction processes that occur between convective storms and their environment.

NASA RP-1054

N80-16675 163 pp

Avail NTIS 1980

Some Human Factors Issues in the Development and Evaluation of Cockpit Alerting and Warning Systems

*R. J. Randle, Jr., W. E. Larsen,
D. H. Williams*

A set of general guidelines for evaluating newly developed cockpit alerting and warning system in terms of human factors issues.

NASA RP-1055

N80-15821 65 pp

Avail NTIS 1980

Orbiter Landing Loads Math Model Description and Correlation With ALT Flight Data

*D. A. Hamilton, J. A. Schliesing,
G. A. Zupp, Jr.*

Results of the Space Shuttle approach and landing test to assess landing gear characteristics and performance and to verify landing dynamic analyses.

NASA RP-1056

N80-16091 27 pp

Avail NTIS 1980

Handbook of Lunar Materials

R. J. Williams, J. J. Jadwick

The physical, chemical, thermodynamic, and geologic data of lunar rocks, minerals, and processes.

NASA RP-1057

N80-16009 133 pp

Avail NTIS 1980

Stratospheric Aerosol Modification by Supersonic Transport Operations With Climate Implications

*O. B. Toon, R. P. Turco,
J. B. Pollack, et al.*

The potential effects on stratospheric aerosols of supersonic transport emissions of sulfur dioxide gas and submicron size soot granules.

NASA RP-1058

N80-15726 20 pp

Avail NTIS 1980

Conference Publications

Proceedings of the SCAR Conference

Aerodynamics, stability and control, propulsion, environmental factor, airframe structures and materials, design integration.

Part 1

NASA CP-1
N77-17996 478 pp
Avail NTIS 1976

Part 2

NASA CP-1
N77-18019 547 pp
Avail NTIS 1976

The Structure and Content of the Galaxy and Galactic Gamma Rays

C. E. Fichtel, F. W. Stecker

Gamma radiation investigations by COS-B and SAS-2 satellites, data from CO surveys of the galaxy and the galactic distribution of pulsars, theories of galactic gamma ray emission.

NASA CP-2
N77-20977 356 pp
Avail NTIS 1977

Systems Reliability Issues for Future Aircraft

Reliability of adaptive controls for future aircraft.

NASA CP-3
N77-22808 212 pp
Avail NTIS 1975

Inversion Methods in Atmospheric Remote Sounding

A. Deepak

The mathematical theory of inversion methods applied to the remote sounding of atmospheric temperature, humidity, and aerosol constituents.

NASA CP-4
N78-12586 609 pp
Avail NTIS 1977

The Use of Nonhuman Primates in Space

R. C. Simmonds, G. H. Bourne

Space related biomedical research involving nonhuman primates. Conference, December 1974.

NASA CP-5
N78-11663 390 pp
Avail NTIS 1977

Application of Remote Sensing to the Chesapeake Bay Region

*W. T. Chen, G. W. Freas, Jr.,
G. D. Hickman, et al.*

Part 1. Executive Summary

NASA CP-6
N78-23537 47 pp
Avail NTIS 1978

Part 2. Proceedings

NASA CP-6
N78-21526 388 pp
Avail NTIS 1978

Fourth NASA Inter-Center Control Systems Conference

Space vehicle control applications; aircraft guidance, control, and handling qualities. Conference, November 1969.

NASA CP-7
N78-23010 504 pp
Avail NTIS 1978

Advances in Engineering Science

Volume 1. Materials science, fracture mechanics, impact and vibration testing.

NASA CP-2001
N77-10230 360 pp
Avail NTIS 1976

Volume 2. Structural dynamics.

NASA CP-2001
N77-10265 457 pp
Avail NTIS 1976

Volume 3. Acoustics, environmental modeling, energy technology.

NASA CP-2001
N77-10305 464 pp
Avail NTIS 1976

Volume 4. Inviscid flow, viscous flow, aircraft aerodynamics, fluid mechanics, propulsion and combustion, flight dynamics and control.

NASA CP-2001
N77-10345 521 pp
Avail NTIS 1976

Flight Mechanics/Estimation Theory Symposium

A. Fuchs

Computation of relative motion, rapid satellite life-time estimation, mission analysis system design, satellite attitude prediction.

NASA CP-2002
N78-76855 265 pp
Avail NASA LERC 1975

Free Drifting Buoys

Tracking systems and techniques; deployment and retrieval; simulation, sensors, and data; recent experience and plans.

NASA CP-2003
N77-16675 378 pp
Avail NTIS 1974

Atmospheric Aerosols: Their Optical Properties and Effects

Computations based on thermodynamic equilibrium and Mie theory.

NASA CP-2004
N77-15563 316 pp
Avail NTIS 1976

Supplement. Digest of technical papers.

NASA CP-2004
N77-15564 46 pp
Avail NTIS 1976

Aircraft Piston Engine Exhaust Emission Symposium

Emission measurement problems, data reduction procedures, flight testing, emission reduction techniques.

NASA CP-2005
N77-17081 373 pp
Avail NTIS 1976

Proceedings and Findings of 1976 Workshop on Ride Quality—Passenger Acceptance of Transportation Systems

A. R. Kubltbau

NASA CP-2006
N77-27710 86 pp
Avail NTIS 1976

Ninth Conference on Space Simulation

Spacecraft testing; facilities and test equipment; system and subsystem test; life sciences, medicine, and space; physical environmental factors; chemical environmental factors; contamination; space physics; thermal protection.

NASA CP-2007
N79-19013 470 pp
Avail NTIS 1977

High Reynolds Number Research

D. D. Baals

Fundamental aerodynamics questions for which high Reynolds number experimental capability is required; design features of the NASA Langley Transonic Facility.

NASA CP-2009
N77-27139 185 pp
Avail NTIS 1977

Terrestrial Photovoltaic Measurements

Terrestrial solar irradiance, solar simulation and reference cell calibration, cell and array measurement procedures.

NASA CP-2010
N77-30521 393 pp
Avail NTIS 1976

Proceedings of the 1977 MACSYMA Users' Conference

Technical aspects of MACSYMA, a large symbolic and algebraic system.

NASA CP-2012
N77-28750 596 pp
Avail NTIS 1977

Summary Report: Workshop on Vehicle Ride Quality

A. R. Kubltbau, A. W. Wichansky

Procedures to optimize urban transportation with emphasis on vehicle ride quality. Workshop, August 1975.

NASA CP-2013
N78-11705 167 pp
Avail NTIS 1977

Essays on the History of Rocketry and Astronautics: Proceedings of the Third Through the Sixth History Symposia of the International Academy of Astronautics

R. C. Hall

Early solid propellant rocketry, rocketry and astronautics after 1880, development of liquid and solid propellant rockets from 1880 to 1945, rocketry and astronautics after 1945. Symposia, October 1969, October 1970, September 1971, October 1972.

Volume 1

NASA CP-2014
N77-33030 244 pp
Avail GPO 1977

Volume 2

NASA CP-2014
N77-33048 476 pp
Avail GPO 1977

Standardization, Certification, Maintenance, and Dissemination of Large-Scale Engineering Software Systems

*T. G. Toridis, H. G. McComb, Jr.,
K. Khozeimeh*

NASA CP-2015
N77-33876 103 pp
Avail NTIS 1977

Lean Premixed/Prevaporized Combustion

A. H. Lefebvre

Recommendations on the status and application of lean premixed/prevaporized combustion to the aircraft gas turbine for the reduction of pollutant emissions.

NASA CP-2016
N77-33297 46 pp
Avail NTIS 1977

An Assessment of Technology for Turbojet Engine Rotor Failures

E. A. Witmer

Design considerations, objectives, and approaches in containing rotor burst debris; methods for determining the fracture resistance of various materials used in providing lightweight shielding from fragment impact.

NASA CP-2017
N78-10068 425 pp
Avail NTIS 1977

Sixth NASTRAN Users' Colloquium

NASTRAN programming and substructuring methods, fluids and thermal applications.

NASA CP-2018
N78-12443 473 pp
Avail NTIS 1977

Proceedings of the ASPE/MSFC Symposium on Engineering and Productivity Gains From Space Technology

Aerospace technology findings in regard to nonaerospace applications, energy generation, materials and processes, Earth observation, advances and benefits of electronics.

NASA CP-2019
N77-30273 279 pp
Avail NTIS 1977

Solar Cell High Efficiency and Radiation Damage

Silicon solar cell analysis and fundamental measurements, silicon cell technology, gallium arsenide research and technology, radiation effects on silicon and gallium arsenide cells.

NASA CP-2020
N78-13527 221 pp
Avail NTIS 1977

Aircraft Engine Emissions

Components, controls, energy efficient engine designs, noise and pollution reduction.

NASA CP-2021
N78-11063 452 pp
Avail NTIS 1977

NASA Workshop on Solar-Terrestrial Studies From a Manned Space Station

The mechanism of the solar radiation and its effect on the environment, instrumentation requirements in the exploration of the solar and terrestrial system.

NASA CP-2024
N77-32549 42 pp
Avail NTIS 1977

Agricultural Aviation Research

H. L. Chevalier, L. F. Bouse

The current state of the art of agricultural aviation, potentially productive short and long range research and development areas, communications between research scientists and engineers involved in agricultural research.

NASA CP-2025
N78-12999 151 pp
Avail NTIS 1977

AIAA/MSFC Symposium on Space Industrialization: Proceedings

Current and projected technologies required for utilizing extraterrestrial environments to produce energy, information, or materials and provide services of value on Earth or to Earth.

NASA CP-2026
N78-18088 627 pp
Avail NTIS 1976

Proceedings of the 1977 NASA/ISHM Microelectronics Conference

S. V. Caruso

Current and future requirements for research development, manufacturing, and education in the field of hybrid microelectronic technology.

NASA CP-2027
N78-16266 170 pp
Avail NTIS 1977

Proceedings of the First Annual Meteorological and Environmental Inputs to Aviation Systems Workshop

D. W. Camp, W. Frost

Aircraft design, simulation, and general aviation.

NASA CP-2028
N78-19711 335 pp
Avail NTIS 1977

Third National Aeronautics and Space Administration Weather and Climate Program Science Review

E. R. Kreins

Research results of developing experimental and prototype operational systems, sensors, and space facilities for monitoring and understanding the atmosphere.

NASA CP-2029
N79-20575 304 pp
Avail NTIS 1977

Active Microwave Users Workshop Report

R. E. Matthews

Seasat land experiments, program planning, synthetic aperture radar data processing, applications.

NASA CP-2030
N78-21562 300 pp
Avail NTIS 1978

Summer Workshop on Near-Earth Resources

J. R. Arnold, M. B. Duke

The possible large scale use of extraterrestrial resources to construct structures in space or to return to Earth as supplements for terrestrial resources.

NASA CP-2031
N78-16973 107 pp
Avail NTIS 1978

Future Computer Requirements for Computational Aerodynamics

Recent advances in computational aerodynamics, potential benefits of a national aerodynamic simulation facility.

NASA CP-2032
N78-19778 515 pp
Avail NTIS 1978

Jet Aircraft Hydrocarbon Fuels Technology

J. P. Longwell

Prediction of tradeoffs among fuel refining, distribution, and aircraft operating costs; combustor liner temperature and emissions studies; and practical simulator investigations of the effect of high freezing point and low thermal stability fuels on aircraft fuel systems.

NASA CP-2033
N78-19325 64 pp
Avail NTIS 1978

Wind Turbine Structural Dynamics

D. R. Miller

Methods for calculating dynamic loads, aeroelasticity stability, wind loads, both steady and transient, critical design conditions, drive train dynamics, behavior of operating wind turbines.

NASA CP-2034
N78-19616 280 pp
Avail NTIS 1978

Large Space Systems Technology

E. C. Naumann, A. Butterfield

Mission requirements, structural concepts, materials, structural alignment, thermal control, metrology, technological forecasting.

Volume 1

NASA CP-2035
N79-10078 540 pp
Avail NTIS 1978

Volume 2

NASA CP-2035
N79-10097 505 pp
Avail NTIS 1978

CTOL Transport Technology, 1978

Part 1. Aircraft propulsion, structures and materials, laminar flow control.

NASA CP-2036
N78-27046 516 pp
Avail NTIS 1978

Part 2. Advanced aerodynamics and active controls, operations, and safety, advanced systems, energy efficiency.

NASA CP-2036
N78-29046 405 pp
Avail NTIS 1978

Guntersville Workshop on Solar-Terrestrial Studies

The effects of solar activity on geomagnetic activity; instrument requirements for interdisciplinary joint observational studies of the magnetosphere, the atmosphere, Sun-weather relationships.

NASA CP-2037
N78-19600 71 pp
Avail NTIS 1977

The 11th Aerospace Mechanisms Symposium

Spacecraft and missile components such as rail assemblies, radiometers, magnetometers.

NASA CP-2038
N79-21374 243 pp
Avail NTIS 1977

Proceedings of the USAF/NASA International Spacecraft Contamination Conference

J. M. Jemiola

Spacecraft modeling, determination of basic material properties, thruster plume characteristics and modeling, contamination prevention and control, contamination kinetics and effects.

NASA CP-2039
N79-25048 1219 pp
Avail NTIS 1978

The MSFC/UAH Data Management Symposium

A. Castelli

NASA CP-2040
N78-74659 423 pp
Avail NTIS 1978

The 1977 Goddard Space Flight Center Battery Workshop

Results of testing, analysis, and development of the sealed nickel cadmium cell system.

NASA CP-2041
N79-21565 579 pp
Avail NTIS 1977

Emerging Energy Alternatives for the Southeastern States

E. K. Stefanakos

Solar energy, wood energy, novel energy sources, agricultural and industrial process heat, waste utilization, energy conservation, ocean thermal energy conversion.

NASA CP-2042
N78-28615 149 pp
Avail NTIS 1978

Stratcom 8 Data Workshop and Supplement

E. L. Reed

The study of stratospheric photochemistry involving ozone, with secondary objectives including a study of the balloon environment, comparison of independent techniques for the measurement of O₃ and NO, development of new sensor systems.

NASA CP-2043
N79-23461 137 pp
Avail NTIS 1978

Planning for Airport Access: An Analysis of the San Francisco Bay Area

J. S. Dajani, J. V. Jucker, J. L. Jones

A description of the airport area, its current transportation capabilities, recommendations for future access planning.

NASA CP-2044
N79-10942 300 pp
Avail NTIS 1978

Advanced Technology Airfoil Research

Comprehensive review of airfoil research; development of computational aerodynamic codes for airfoil analysis and design, development of experimental facilities and test techniques, airfoil applications.

Volume 1, Part 1
NASA CP-2045
N79-20030 454 pp
Avail NTIS 1979

Volume 1, Part 2
NASA CP-2045
N79-19989 303 pp
Avail NTIS 1978

Volume 2
NASA CP-2046
N80-21283 262 pp
Avail NTIS 1978

Research Efforts in Aircraft Pollution

Emissions regulations, combustor modeling, combustor development, instrumentation, emission measurement, airport/airbase pollution, upper atmospheric pollution and chemistry.

NASA CP-2048
X78-10171 124 pp
1978

Proceedings of the NASA/Florida Institute of Technology Environmental Engineering Conference on Nitrogen Tetroxide With Emphasis on Space Shuttle

E. L. Rhodes

Methods of reducing the user hazards of nitrogen tetroxide, Kennedy Space Center developments in N₂O₄ control for the Space Shuttle, life support equipment and transportation.

NASA CP-2049
N79-20424 203 pp
Avail NTIS 1978

Flight Mechanics/Estimation Theory Symposium

Satellite attitude determination and control, orbit determination, onboard and ground attitude determination procedures, effect of atmosphere on Venus orbiter navigation, satellite-to-satellite tracking, satellite onboard navigation using global positioning system data.

NASA CP-2050
N79-14121 289 pp
Avail NTIS 1978

Hyperthermia as an Antineoplastic Treatment Modality

*S. A. T. Long, J. Shaeffer,
A. M. El-Mahdi*

Preclinical evaluation of hyperthermia for treating tumorous cancers.

NASA CP-2051
N79-10728 96 pp
Avail NTIS 1978

Helicopter Acoustics

Noise regulation concepts, design, operations and testing for noise control, helicopter noise prediction, research tools and measurements.

Part 1

NASA CP-2052
N78-32816 399 pp
Avail NTIS 1978

Part 2

NASA CP-2052
N79-10843 438 pp
Avail NTIS 1978

Asteroids: An Exploration Assessment

D. Morrison, W. C. Wells

Current state of asteroid science, need for future space missions to gain more knowledge on asteroid relationship to solar system formation.

NASA CP-2053
N78-29007 295 pp
Avail NTIS 1978

YF-12 Experiment Symposium, Volume 1

Propulsion system performance, inlet time varying distortion, structures, aircraft controls, propulsion controls, and aerodynamics.

NASA CP-2054
N78-32055 286 pp
Avail NTIS 1978

YF-12 Experiments Symposium, Volume 2

NASA CP-2054 126 pp
1978

YF-12 Experiments Symposium, Volume 3

NASA CP-2054 542 pp
1978

Engineering and Scientific Data Management

The application of data management systems to engineering and scientific data.

NASA CP-2055
N78-33776 255 pp
Avail NTIS 1978

Exploratory Meeting on Atmospheric Electricity and Severe Storms

W. W. Vaughan

Atmospheric electricity and its relationship to severe storms, the feasibility of developing a set of instruments for either a Space Shuttle or an unmanned satellite, the scientific rationale which would warrant further in-depth assessment, involvement and development of supporting activities by NASA.

NASA CP-2056
N78-29669 30 pp
Avail NTIS 1978

Proceedings of the 2nd Annual Workshop on Meteorological and Environmental Inputs to Aviation Systems

W. Frost, D. W. Camp, D. E. Durham

The major objectives of the workshop were to satisfy such needs of the sponsoring agencies as the expansion of understanding and knowledge of the interactions of the atmosphere with aviation systems, the better definition and implementation of services to operators, and the collection and interpretation of data for establishing operational criteria.

NASA CP-2057
N79-17413 259 pp
Avail NTIS 1978

Future Orbital Power Systems Technology Requirements

Comment on current and planned programs and opportunities for technology investment.

NASA CP-2058
N79-10122 195 pp
Avail NTIS 1978

Research in Computerized Structural Analysis and Synthesis

H. G. McComb, Jr.

Computer applications in dynamic structural analysis and structural design modeling.

NASA CP-2059
N79-10448 224 pp
Avail NTIS 1978

The 14th Annual Conference on Manual Control: Digital Simulation of Human Operator Dynamics

Human operator dynamics during actual manual control or while monitoring the automatic control systems involved in air-to-air tracking, automobile driving, the operator of undersea vehicles, remote handling.

NASA CP-2060
N79-15588 692 pp
Avail NTIS 1978

Avionics and Controls Research and Technology

H. A. Rediess, D. E. McIver

Technology needs and opportunities, the role of NASA in avionics and controls research.

NASA CP-2061
N79-15898 84 pp
Avail NTIS 1979

Seventh NASTRAN User's Colloquium

Fluids and thermal applications, NASTRAN programming, substructuring methods, unique new applications, general auxiliary programs, specific applications, new capabilities.

NASA CP-2062
N78-32466 499 pp
Avail NTIS 1978

Human Neurological Development: Past, Present and Future

R. Pelligra

Vision; vestibular function; intelligence; nutrition; treatment of neurological disfunctions, coma, and convulsive seizures.

NASA CP-2063
N79-15887 60 pp
Avail NTIS 1978

Tools for Embedded Computing Systems Software

Tools and the software environment; tools and software requirements, design, and specification; tools and language processors; tools and verification and validation.

NASA CP-2064
N79-13736 137 pp
Avail NTIS 1978

Recent Advances in Structures for Hypersonic Flight

Engine structures, cooled airframe structures, hot structures, thermal protection systems, cryogenic tankage structures, cryogenic insulation, analysis of thermal structures.

Part 1

NASA CP-2065
N79-21422 533 pp
Avail NTIS 1978

Part 2

NASA CP-2065
N79-21435 408 pp
Avail NTIS 1978

Ozone Contamination in Aircraft Cabins

The problem and solution to the physical ozone irritation caused by ozone concentrations in the cabins of high-altitude aircraft.

NASA CP-2066
N79-21021 81 pp
Avail NTIS 1979

The Rotary Engine: A Candidate for General Aviation

Nonturbine engine research programs for general aviation, future requirements for general aviation powerplants.

NASA CP-2067
N79-15961 190 pp
Avail NTIS 1978

The Saturn System

D. M. Hunten, D. Morrison

Mission planning for orbiter and entry probes of the Saturn system emphasizes scientific studies of Saturn, its satellites, its rings, and its magnetosphere.

NASA CP-2068
N79-16758 423 pp
Avail NTIS 1978

Proceedings of the Workshop on an Electromagnetic Positioning System in Space

W. A. Oran

Study of metallic glasses, investigations of the properties of high temperature materials.

NASA CP-2069
N79-13069 25 pp
Avail NTIS 1978

Radar, Insect Population Ecology, and Pest Management

C. R. Vaughn, W. Wolf, W. Klassen

The potential role of radar in insect ecology studies and pest management and phenomena with insect movement.

NASA CP-2070
N79-19592 252 pp
Avail NTIS 1979

Spacecraft Charging Technology, 1978

The interaction of the aerospace environment with spacecraft surfaces and onboard, high voltage spacecraft systems operating over a wide range of altitudes from low Earth orbit to geosynchronous orbit.

NASA CP-2071
N79-24001 908 pp
Avail NTIS 1979

Second International Colloquium on Mars: Abstracts for a Colloquium

NASA CP-2072
N79-16757 97 pp
Avail NTIS 1979

Soil Moisture Workshop

*J. L. Heilman, D. G. Moore,
T. J. Schmugge, et al.*

The objectives of the workshop were to evaluate the state of the art of remote sensing of soil moisture, examine the needs of potential users, and make recommendations concerning the future of soil moisture research and development.

NASA CP-2073
N79-16329 219 pp
Avail NTIS 1978

Carbon Fiber Risk Analysis

The scope and status of the effort to assess the risks associated with the accidental release of carbon/graphite fibers from civil aircraft.

NASA CP-2074
N79-22196 245 pp
Avail NTIS 1979

Government/Industry Workshop on Payload Loads Technology

The problems of balancing the design criteria between launch and orbit operations and developing analytical techniques that are reliable, accurate, efficient, and low cost.

NASA CP-2075
N79-20162 874 pp
Avail NTIS 1978

Fourth National Aeronautics and Space Administration Weather and Climate Program Science Review

E. R. Kreins

Scientific research on severe storms and local weather, global weather, and climate.

NASA CP-2076
N79-20633 396 pp
Avail NTIS 1979

Quiet Powered-Lift Propulsion

New propulsion technology for powered-lift aircraft systems.

NASA CP-2077
N80-15127 426 pp
Avail NTIS 1979

Premixed Prevaporized Combustor Technology Forum

Engine interfaces, fuel-air preparation, autoignition, lean combustion, concept design studies.

NASA CP-2078
N79-24994 262 pp
Avail NTIS 1979

Graphite/Polyimide Composites: Conference on Composites for Advanced Space Transportation Systems

H. B. Dexter, J. G. Davis, Jr.

Fabrication, adhesives, test methods, structural integrity, design and analysis, advanced technology developments, high temperature polymer research, the state of the art of graphite/polyimide composites.

NASA CP-2079
N79-30297 449 pp
Avail NTIS 1979

The 12th Aerospace Mechanisms Symposium

Boom release mechanisms, separation on Space Shuttle orbiter/Boeing 747 aircraft, payload handling, spaceborne platform support, deployment of spaceborne antennas and telescopes.

NASA CP-2080
N79-21352 241 pp
Avail NTIS 1979

The 13th Aerospace Mechanisms Symposium

A. C. Bond

Propulsion; motion compensation; instrument pointing and adjustment; centrifuge testing; bearing design; vehicle braking; cargo handling; devices for satellite, missile, and hypersonic-wind-tunnel applications; space shuttle mechanical and thermal protection systems; techniques for building large space structures.

NASA CP-2081
N79-22539 300 pp
Avail NTIS 1979

Flight Mechanics/Estimation Theory Symposium With Application to Autonomous Navigation and Attitude/Orbit Determination

A. J. Fuchs

Landsat landmark data, star sensing and pattern recognition, filtering algorithms for global positioning system, determining orbital elements for geostationary satellites.

NASA CP-2082
N79-26082 347 pp
Avail NTIS 1979

Laser Doppler Velocimetry Workshop

R. B. Owen

The potential of laser Doppler velocimetry as a technique for use in mapping flows in the several fluid systems under development for doing research on low-gravity processes.

NASA CP-2084
N79-22455 12 pp
Avail NTIS 1979

The Science and Technology of Low Speed and Motorless Flight

P. W. Hanson

Low speed aerodynamics, new materials applications and structural concepts, advanced flight instrumentation, sailplane optimal flight techniques, self-launching and ultralight glider technology.

Part 1
NASA CP-2085
N79-23889 299 pp
Avail NTIS 1979

Part 2
NASA CP-2085
N79-27070 297 pp
Avail NTIS 1979

Aircraft Icing

B. J. Blaha

NASA CP-2086
N79-23912 147 pp
Avail NTIS 1979

Fundamentals of Gas Turbine Combustion

M. Gerstein

Atomization and vaporization, combustion chemistry, combustion dynamics, combustion modeling.

NASA CP-2087
N79-25016 52 pp
Avail NTIS 1979

The 11th Annual Battery Workshop

The development, properties, and testing of nickel cadmium, metal hydrogen, and lithium systems.

NASA CP-2088
N79-28669 545 pp
Avail NTIS 1978

Space Missions to Comets

M. Neugebauer, D. K. Yeomans, J. C. Brandt, et al.

The broad impact of a cometary mission with particular emphasis on scientific interest in a fly-by mission to Halley's comet and a rendezvous with Tempel 2.

NASA CP-2089
N80-11972 229 pp
Avail NTIS 1979

Middle Atmosphere Electrodynamics: Report of the Workshop on the Role of the Electrodynamics of the Middle Atmosphere on Solar Terrestrial Coupling

N. C. Maynard

Review of the status of middle atmosphere electrodynamics and recommendations for future research.

NASA CP-2090
N79-25608 268 pp
Avail NTIS 1979

Proceedings of Workshops to Define Engineering Requirements for a Space Vacuum Research Facility

W. A. Oran, S. T. Wu, R. W. Hoffman

The construction of a molecular wake shield for the Shuttle orbiter, a collision model with a program depicting emitted molecular density around the spacecraft.

NASA CP-2091
N79-26076 152 pp
Avail NTIS 1979

Aeropropulsion 1979

State-of-the-art technology in aeronautical propulsion noise and air pollution control techniques, advances in supersonic propulsion for transport aircraft, composite materials and structures for reliable engine components, engine design for improved fuel consumption.

NASA CP-2092
N80-10205 464 pp
Avail NTIS 1979

Workshop on Thrust Augmenting Ejectors

*A. E. Lopez, D. G. Koenig,
D. S. Green, et al.*

The state of the art of ejector technology and the direction of future studies.

NASA CP-2093
N80-10107 509 pp
Avail NTIS 1979

Conference on Fire Resistant Materials: A Compilation of Presentations and Papers

D. A. Kourtides, G. A. Johnson

Large-scale testing, fire toxicology, polymeric materials, fire modeling.

NASA CP-2094
N79-31166 287 pp
Avail NTIS 1979

Proceedings: Workshop on the Need for Lightning Observations From Space

*L. S. Christensen, W. Frost,
W. W. Vaughan*

Satellite instrumentation specifically designed for indicating the characteristics of lightning are of value in severe storms research, in engineering and operational problem areas, and in providing information on atmospheric electricity and its role in meteorological processes.

NASA CP-2095
N79-30869 255 pp
Avail NTIS 1979

Implications of Fuel-Efficient Vehicles on Ride Quality and Passenger Acceptance

A. M. Wichansky, A. R. Kublthau

Ride quality and passenger acceptance problems associated with enhanced fuel efficiency of automobiles and aircraft, shifts in intermediate range (100-500 miles) travel from automobiles to public transit.

NASA CP-2096
N80-18990 120 pp
Avail NTIS 1979

Solar Cell High Efficiency and Radiation Damage, 1979

Progress in the effort to increase the end-of-life efficiency of solar cells for space use, silicon solar cell efficiency, radiation effects, gallium arsenide cells.

NASA CP-2097
N79-32640 290 pp
Avail NTIS 1979

Study of the Solar Cycle From Space

The objectives of and benefits to be derived from a program of solar cycle research, the role of space observations, including crucial missions, experiments, and the theoretical advances.

NASA CP-2098
N80-17944 366 pp
Avail NTIS 1980

Earth Radiation Budget Science

Climate modeling, climate diagnostics, radiation modeling, radiation variability and correlation studies, cloudiness and the radiation budget, and radiation budget and related measurements in 1985 and beyond.

NASA CP-2100
N79-32797 79 pp
Avail NTIS 1978

Flight Technology Improvement—Spaceborne Optical Radiometric Instruments, Attitude Control, and Electromechanical and Power Subsystems

Optical radiometric instruments and calibration, attitude control and determination, electromechanical and power subsystem.

NASA CP-2101
N80-13152 76 pp
Avail NTIS 1979

Conference of Remote Sensing Educators (CORSE-78)

Methods of improving the teaching of remote sensing, Earth resources, image interpretation, data processing concepts.

NASA CP-2102
N80-20003 664 pp
Avail NTIS 1978

Models of Human Operators in Vision Dependent Tasks

M. C. Waller

Descriptive overviews of some existing models, and techniques of modeling the human operator.

NASA CP-2103
N79-33838 86 pp
Avail NTIS 1979

Proceedings: Third Annual Workshop on Meteorological and Environmental Inputs to Aviation Systems

D. W. Camp, W. Frost

Training, flight operations, accident investigation, air traffic control, airports, winds and wind shear, icing and frost, atmospheric electricity and lightning, fog, visibility, ceilings, turbulence.

NASA CP-2104
N80-14633 190 pp
Avail NTIS 1979

Summary of the NASA/MSFC FY-79 Severe Storm and Local Weather Research Review—Cloud Physics, Atmospheric Electricity, and Mesoscale/Storm Dynamics Research

NASA CP-2105
N79-33722 92 pp
Avail NTIS 1979

Large Wind Turbine Design Characteristics and R&D Requirements

S. Lieblein

Large wind turbine research and development.
NASA CP-2106
N80-16453 459 pp
Avail NTIS 1979

Nuclear-Pumped Lasers—Efficient Conversion of Energy Liberated in Nuclear Reactions to Coherent Radiation

Nuclear-pumped laser modeling, nuclear volume and foil excitation of laser plasmas, proton beam simulations, nuclear flashlamp excitation, reactor laser systems studies.
NASA CP-2107
N80-13438 140 pp
Avail NTIS 1979

Supersonic Cruise Research 1979

Part 1
NASA CP-2108
X80-72343 538 pp
1980
Part 2
NASA CP-2108
X80-72367 408 pp
1980

Remote Sensing and Problems of the Hydrosphere

E. D. Goldberg

The classification of lakes, identification and quantification of major functional groups of phytoplankton, sources and sinks of biochemical factors, and temporal and regional variability of surface features, atmospheric processes linked to hydrospheric process through the transfer of matter via aerosols and gases, particle fluxes to the aquatic environment, global geochemical problems.
NASA CP-2109
N80-12718 67 pp
Avail NTIS 1979

Proceedings of Shuttle Environmental Effects Program Review

A. E. Potter

Measurements of Titan exhaust cloud effluents, mesoscale and microphysical acid rain models, proposed submesoscale model, regional air quality monitoring and rain collection systems, ecological impact of solid rocket motor exhaust effluents.

NASA CP-2110
N80-15649 124 pp
Avail NTIS 1980

Scientific Research With the Space Telescope: International Astronomical Union Colloquium No. 54

M. S. Longair, J. W. Warner

Investigations of small solar system objects, the physical characteristics of ionized gaseous nebulae, the central regions of active galaxies and quasars, problems of cosmology, the distribution and composition of interstellar matter.

NASA CP-2111
N80-22130 331 pp
Avail NTIS 1979

Preliminary Applications and Evaluation Results. Lixiscope: Proceedings of the Lixiscope Conference

The principle of the lixoscope and its potential uses in industry, clinical medicine, and astrophysics.

NASA CP-2112
N80-12384 89 pp
Avail NTIS 1978

HEAO Science Symposium

C. Dailey, W. Johnson

X-ray variability, extragalactic astronomy, x-ray ion line emission, optical identification and spectroscopy of x-ray sources, results from HEAO 2 imaging and nonimaging instruments.

NASA CP-2113
N80-14977 463 pp
Avail NTIS 1979

Validation Methods for Fault-Tolerant Avionics and Control Systems

The state of the art in fault tolerant computer validation.

NASA CP-2114
N80-12741 112 pp
Avail NTIS 1979

Radio Interferometry: Techniques for Geodesy

Progress in the development and application of radio interferometry as a tool for geophysical research.

NASA CP-2115
N80-28798 472 pp
Avail NTIS 1980

Operational Applications of Satellite Snowcover Observations

A. Rango, R. Peterson

The history of remote sensing of snow cover, techniques for interpreting Landsat and NOAA satellite data, the status of future systems for continuing snow hydrology applications, the use of snow cover observations in streamflow forecasts by applications systems verification and transfer participants and selected foreign investigators, the benefits of using satellite snow cover data in runoff prediction.

NASA CP-2116
N80-25742 294 pp
Avail NTIS 1980

The 1979 Goddard Space Flight Center Battery Workshop

G. Halpert

Results of testing, analysis, and development of the sealed nickel cadmium cell system, metal hydrogen and lithium cell technology and applications.

NASA CP-2117
N80-20820 521 pp
Avail NTIS 1980

Large Space Systems Technology, 1979— Antenna and Space Platform Systems Conference

J. C. Ward, Jr.

Large antennas systems, large space platform systems.

NASA CP-2118
N80-19145 487 pp
Avail NTIS 1980

Assessment of Carbon Fiber Electrical Effects

The risks associated with the use of carbon fiber composites in civil aircraft, the need for protection of civil aircraft equipment from fire-released carbon fibers.

NASA CP-2119
N80-19193 278 pp
Avail NTIS 1980

Resource Management on the Flight Deck

G. E. Cooper, M. D. White, J. K. Lauber

Several approaches to the training and selection of aircrew, the psychology of the flight deck situation.

NASA CP-2120
N80-22283 247 pp
Avail NTIS 1980

Proceedings of the Aero-Optics Symposium on Electromagnetic Wave Propagation From Aircraft

Wind-tunnel and flight experiments concerning natural and induced turbulence around an airplane and the effects on propagation characteristics of an emitter mounted in the airplane.

NASA CP-2121
N80-25588 666 pp
Avail NTIS 1980

Cryogenic Technology

Part 1

NASA CP-2122
N80-72515 273 pp
Avail NASA GSFC 1979

Part 2

NASA CP-2122
N80-72516 159 pp
Avail NASA GSFC 1979

Flight Mechanics/Estimation Theory Symposium

A. J. Fuchs

Methods of determining satellite orbit and attitude parameters.

NASA CP-2123
N80-28389 260 pp
Avail NTIS 1980

An Assessment of Ground-Based Techniques for Detecting Other Planetary Systems

D. C. Black, W. E. Brunk

The feasibility and limitations of ground-based techniques for detecting other planetary systems, the level of accuracy at which these limitations would occur, the extent to which they can be overcome by new technology and instrumentation.

Volume 1. An Overview—Workshop Conclusions

NASA CP-2124
N80-18997 48 pp
Avail NTIS 1980

An Assessment of Ground-Based Techniques for Detecting Other Planetary Systems (cont.)

Volume 2. Position Papers

The capabilities of several astronomical interferometer system concepts, the effects of the Earth's atmosphere on astrometric precision.

NASA CP-2124
N80-25224 253 pp
Avail NTIS 1980

Thermal Energy Storage: Fourth Annual Review Meeting

The development of low cost thermal energy storage technologies in terms of near term oil savings, solar energy applications, and dispersed energy systems for energy conservation policies.

NASA CP-2125
N80-22788 650 pp
Avail NTIS 1980

General Aviation Propulsion

The quiet, clean, general aviation turbofan program; the general aviation turbine engine study program; the general aviation propeller technology program; the advanced rotary, diesel, and reciprocating engine programs.

NASA CP-2126
N80-22327 437 pp
Avail NTIS 1980

Proceedings of the 14th Aerospace Mechanisms Symposium

Aviation propulsion, aerodynamic devices, and crew safety; space vehicle propulsion, guidance, and control; spacecraft deployment, positioning, and pointing; spacecraft bearings, gimbals, and lubricants; large space structures.

NASA CP-2127
N80-23495 327 pp
Avail NTIS 1980

Lightning Technology: Proceedings of a Technical Symposium

Phenomenology, measurement, detection, protection, interaction, and testing; lightning electromagnetics, protection of ground systems, simulated lightning testing.

NASA CP-2128
N80-21927 444 pp
Avail NTIS 1980

Validation Methods Research for Fault-Tolerant Avionics and Control Systems

J. W. Gault, K. S. Trivedi, J. B. Clary

A preliminary validation methodology for fault tolerant systems; a general framework for a validation methodology.

NASA CP-2130
N80-23008 105 pp
Avail NTIS 1980

Eighth NASTRAN User's Colloquium

The general application of finite element methodology and the specific application of NASTRAN to a wide variety of static and dynamic structural problems.

NASA CP-2131
N80-24648 242 pp
Avail NTIS 1980

Remote Sensing and Problems of the Hydrosphere. A Focus for Future Research

E. D. Goldberg

Problems of water quality which are addressable with remote sensors; the chemical, biological, geological, and physical dynamics of natural ecosystems.

NASA CP-2132
N80-23956 35 pp
Avail NTIS 1980

Rotordynamic Instability Problems in High-Performance Turbomachinery

Diagnostic and remedial methods; rotor-dynamic control by feedback method, use of elastometric elements, use of hydrodynamic journal bearings and supports.

NASA CP-2133
N80-29706 463 pp
Avail NTIS 1980

High Resolution Infrared Spectroscopy Techniques for Upper Atmospheric Measurements

D. G. Murcray, J. M. Alvarez

Infrared heterodyne techniques for detecting molecules predicted to be present but not yet detected in the upper atmosphere.

NASA CP-2134
N80-27866 109 pp
Avail NTIS 1980

Time-of-Day Corrections to Aircraft Noise Metrics

S. Clevenson, W. T. Shepherd

The historical and background aspects of time-of-day corrections.

NASA CP-2135
N80-28150 81 pp
Avail NTIS 1980

Review of Spectroscopic Data for Measurements of Stratospheric Species

A. Goldman, J. Hoell

A review of the current status of experimental and theoretical spectroscopic data on molecules of stratospheric interest, recommendations for additional research.

NASA CP-2136
N80-26125 34 pp
Avail NTIS 1980

Heterodyne Systems and Technology

Active and passive systems, local oscillators, tunable diode lasers, astronomical systems.

Part 1

NASA CP-2138
N80-29652 266 pp
Avail NTIS 1980

Part 2

NASA CP-2138
N80-29672 321 pp
Avail NTIS 1980

Exploratory Meeting on Airborne Doppler Lidar Wind Velocity Measurements

*G. H. Fichtel, J. W. Kaufman,
W. W. Vaughan*

The scientific interests and applications of the airborne Doppler lidar wind velocity measurement system to severe storms and local weather, convective phenomena, local circulation, atmospheric boundary layer, atmospheric dispersion, industrial aerodynamics.

NASA CP-2140
N80-26999 57 pp
Avail NTIS 1980

Selected NASA Research in Composite Materials and Structures

Failure prediction techniques, buckling and postbuckling research, laminate fatigue analysis, damage tolerance, high temperature resin matrix composites, electrical hazards of carbon fiber composites.

NASA CP-2142
N80-28436 237 pp
Avail NTIS 1980

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