

NASA/TM—1998–208534



Space Sciences Laboratory Publications and Presentations, January 1–December 31, 1997

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National Aeronautics and
Space Administration

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July 1998

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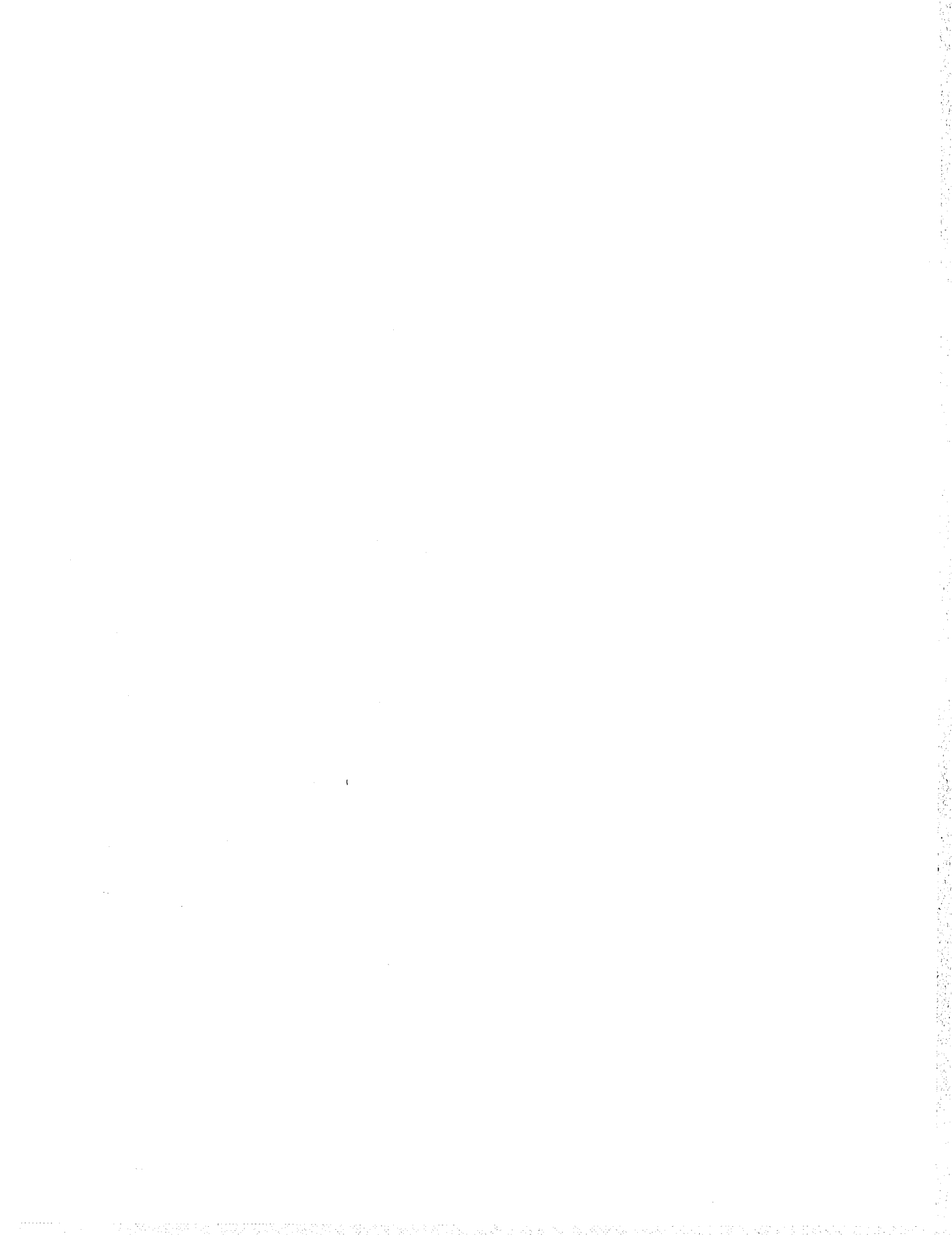
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TECHNICAL MEMORANDUM

NASA REPORTS

Special Publications

1. The Bursting Pulsar GRO J1744-28. ESA SP-382, Publication Division, ESTEC, The Netherlands, 1997. C. Kouveliotou (ES84).
2. Discovery in Cygnus X-3 of Correlations Between the Hard X-Ray and the Radio. ESA SP-382 by ESA's Publications Division at ESTEC, Noordwijk, The Netherlands, 1997. M.L. McCollough, B.A. Harmon, R.M. Hjellming, C.R. Robinson, and S.N. Zhang (ES84).
3. High Energy Survey of Supernova Remnants with BATSE. ESA SP-382 by ESA's Publication Division at ESTEC, Noordwijk, The Netherlands, 1997. M.L. McCollough, C.A. Wilson-Hodge, S.N. Zhang, and B.A. Harmon (ES84).

Contractor Reports

1. Evaluation of Optimum HgZnTe Crystal Growth Parameters and USML-2 Flight Support—Final Report. NASA Contractor Report, 1997. R.N. Scripa (ES75/UAB).
2. Second International Microgravity Laboratory (IML-2) Final Report. NASA RP-1405, July 1997. R.S. Snyder (ES01).
3. X-ray Transmission Microscope Development—Final Report, February 28–August 31, 1997. NASA Contractor Report, 1997. W.F. Kaukler (ES75/UAH).

Technical Memorandums

1. Microgravity Processing and Photonic Applications of Organic and Polymeric Materials. NASA TM-108533, 1997. CDDF Final Report #95-26. D.O. Frazier, M.S. Paley, B.G. Penn, H.A. Abdeldayem, D.D. Smith, and W.K. Witherow (ES01).
2. Second United States Microgravity Laboratory (USML-2) One Year Report. NASA TM-4737, 1997. M. Vlasse, P.A. Curreri, D. McCauley, and C. Walker (ES71).
3. Space Sciences Laboratory Publications and Presentations, January 1–December 31, 1996. NASA TM-108540, 1997. F. Summers (ES01).

Technical Paper

1. Gauging the Nearness and Size of Cycle Minimum. NASA TP-3674, 1997. R.M. Wilson, D.H. Hathaway, and E.J. Reichmann (ES82).

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2. 3-D Magnetic Field Configuration Late in a Large Two-Ribbon Flare. *Solar Physics*, 176, 153–169, 1997. R.L. Moore, B. Schmieder, D.H. Hathaway, and T.D. Tarbell (ES82).
3. Achieving Zero Current for Polar Wind Outflow on Open Flux. *Geophys. Res.*, 24(10), 1183–1186, May 15, 1997. G.R. Wilson, G. Khazanov, and J.L. Horwitz (ES83).
4. Alfvén Wave Resonances and Flow Induced by Nonlinear Alfvén Waves. *Solar Wind*, 8 (D. Winterhalter, J.T. Gosling, S. Habbal, W.S. Kurth, and M. Neugebauer, eds.), American Inst. of Physics. Conf. Proc. 382, p. 153, Woodbury, NY, 1996. B.A. Stark, Z.E. Musielak, and S.T. Suess (ES82).
5. Analysis of Vegetation Within a Semi-Arid Urban Environment Using High Spatial Resolution Airborne Thermal Infrared Remote Sensing Data. *Atmos. Environ.*, 32(1), 19–33, October 1997. D.A. Quattrochi and M.K. Ridd (ES41).
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8. Broadband High-Energy Observations of the Superluminal Jet Source GRO J1655-40 During an Outburst. *Astrophys. J.*, 479, 381–387, April 10, 1997. S.N. Zhang, K. Ebisawa, R. Sunyaev, Y. Ueda, B.A. Harmon, S. Sazonov, G.J. Fishman, H. Inoue, W.S. Paciesas, and T. Takahashi (ES84).
9. Buoyancy-Driven Heat Transfer During Application of a Thermal Gradient. *J. Cryst. Growth*, 171(1/2), 288–302, January 11, 1997. D.O. Frazier, R.J. Hung, M.S. Paley, B.G. Penn, and T.Y. Long (ES01).
10. Calculation of Static Third-Order Polarizabilities of Large Organic Molecules. *J. Phys. Chemistry*, 101(11), 2207–2214, 1997. B.H. Cardelino, C.E. Moore, and D.O. Frazier (ES75).
11. Cancellation of Photo-Induced Absorption in Metal Nanoparticle Composites Through a Counterintuitive Consequence of Local Field Effects. *J. Optical Soc. of America B*, 14(7), 1625–1631, July 1997. D.D. Smith, G. Fisher, R.W. Boyd, and D.A. Gregory (ES76).

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13. Change in Ion Distribution Function While Crossing the Space Shuttle Wake. *J. Geophys. Res.*, 102(A11), 24,117–24,126, November 1997. J.E. Sorenson, N.H. Stone, and K.H. Wright (ES83).
14. Characteristics of Annulus Baroclinic Flow Structure During Amplitude Vacillation. *Dynamics of Atmos. & Oceans*, 27, 485–503, 1997. H.-I. Lu and T.L. Miller (ES41).
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39. Gamma-Ray Bursts. *Scientific American*, 277, 34–39, 1997. G.J. Fishman and D. Hartmann (ES81).
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49. In-situ Studies of Precipitate Formation in Al-Pb Monotectic Solidification by X-ray Transmission Microscopy. *Metallurgical & Materials Transactions A*, 28A, 1705–1710, August 1997. W.F. Kaukler, F. Rosenberger, and P.A. Curreri (ES75/UAH).

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62. On the Correlation of Torque and Luminosity in GX 1+4. *Astrophys. J. Lett.*, 481(2), L101–L105, 1997. D. Chakrabarty, L. Bildsten, M.H. Finger, J.M. Grunsfeld, D.T. Koh, R.W. Nelson, T.A. Prince, B.A. Vaughan, and R.B. Wilson (ES84).

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2. AB Initio Calculations on the Diacetylene Dimer. Ninth International Congress of Quantum Chemistry, Atlanta, GA, June 9–14, 1997. B.H. Cardelino, C.E. Moore, D.O. Frazier, D.G. Musaev, and K. Morokuma (ES75).
3. Advanced X-Ray Astrophysics Facility. AXAF—An Overview. Invited talk to Meeting of the High Energy Astrophysics Division (HEAD), Denver, CO, November 4–11, 1997. M.C. Weisskopf (ES01).
4. Anomalies in Coupled Energy and Water Budgets Over the Americas as Diagnosed from Pre-EOS Data Sets. AMS Annual Meeting, San Diego, CA, February 1997. F.R. Robertson and S. Marshall (ES41).
5. Application of Real-Time X-Ray Transmission Microscopy to Fundamental Studies of Metal Alloy Solidification. SPACEBOUND '97 Conference on Gravitational Materials, Montreal, Quebec, Canada, May 11–14, 1997. P.A. Curreri, W.F. Kaukler, S. Sen, and P.N. Peters (ES75).
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7. Applications of Bayesian Statistics to Problems in Gamma Ray Bursts. Aspen Center for Physics Workshop on Gamma-Ray Bursts, Aspen, CO, August 25–29, 1997. C.A. Meehan (ES84).
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11. Bulk Growth of Wide Band Gap II-VI Compound Semiconductors by Physical Vapor Transport. SPIE's Annual Meeting, San Diego, CA, July 27–August 1, 1997. C.-H. Su (ES75).
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13. CdTe and (Cd, Zn) Te Crystals Grown by Physical Vapor Transport: Morphology and Its Dependence on the Growth Conditions. W. Palosz, K. Grasza, D.C. Gillies, M.A. George, E.E. Collins, K.-T. Chen, Y. Zhang, Z. Hu, A. Burger, H. Chung, B. Raghathamachar, and M. Dudley (ES75).

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15. Characterization of Surface Energy Fluxes in a Great Basin Desert Valley. Annual Meeting of the Association of American Geographers, Ft. Worth, TX, April 1–5, 1997. D.A. Quattrochi and C.A. Laymon (ES41).
16. Characterizing Remote Sensing Images Using ICAMS. Annual Meeting of the Association of American Geographers, Ft. Worth, TX, April 1–5, 1997. H.-L. Qui, N.S.-N. Lam, and D.A. Quattrochi (ES41).
17. Chemical Processing and Analysis of “JACEE” Circumpolar Flights 13 and 14. Cosmic Ray JACEE Meeting, Hiroshima, Japan, December 5–14, 1997. W.F. Fountain (ES84).
18. Consistency Between Divergent Circulations from Reanalysis Data Sets and Satellite-Derived Precipitation, Radiation, and Surface Fluxes. Reanalysis Meeting, Washington, DC, October 27–31, 1997. F.R. Robertson, D. Fitzjarrald, and E.W. McCaul, Jr. (ES41).
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22. Crystalline Colloidal Arrays in Polymer Matrices. NASA URC Technical Conference, Albuquerque, NM, February 16–19, 1997. H.B. Sunkara, B.G. Penn, D.O. Frazier, and N. Ramachandran (ES76).
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25. The Effects of pH on the Averaged (110) Face Growth Rates of Tetragonal Lysozyme. Spacebound 97, Montreal, Quebec, Canada, May 11–14, 1997. E. Forsyth, A. Nadarajah, and M.L. Pusey (ES76).
26. Energy Calibration of the Scintillating Optical Fiber Calorimeter Chamber (SOFCAL). 25th International Cosmic Ray Conference, Durban, South Africa, July 28–August 8, 1997. M.J. Christl, W.F. Fountain, T. Parnell, F.E. Roberts, J.C. Gregory, J. Johnson, and Y. Takahashi (ES84).
27. An Evaluation of Fractal Surface Measurement Methods Using ICAMS (Image Characterization and Modeling System). Auto-Carto 13, Seattle, WA, April 7–10, 1997. N.S.-N. Lam, H.-L. Qiu, and D.A. Quattrochi (ES41).

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29. Expansion Factors in Coronal Holes and Plume/Interplume UVCS Observations. 28th Meeting of the Solar Physics Div. of the AAS, Bozeman, MT, June 27–July 1, 1997. G. Poletto, G. Corti, S.T. Suess, J. Kohl, et al. (ES82).
30. Floating-Zone Growth of Silicon in Strong Axial Magnetic Fields. Joint Annual Meeting of the German Society for Crystal Growth and the Italian Association, Freiburg, Germany, March 5–7, 1997. A. Croll, F.R. Szofran, P. Dold, Th. Kaiser, K.W. Benz, and S.L. Lehoczky (ES75).
31. Fluorescence Studies of Protein (Lysozyme) Crystal Nucleation. Spacebound 97, Montreal, Quebec, Canada, May 11–14, 1997. M.L. Pusey, D. Einhorn, and L. Smith (ES76).
32. A Fractal Module for Multispectral Image Analysis in ICAMS. 1997 Association of American Geographers Annual Meeting. W. Zhao, N.S.-N. Lam, and D.A. Quattrochi (ES41).
33. Galactic Superluminal Sources: A Multiwavelength Overview. 190th Meeting of American Astronomical Society (AAS), Winston-Salem, NC, June 8–11, 1997. B.A. Harmon (ES84).
34. Gamma-Ray Bursts—An Update. University of Kentucky, Lexington, KY, December 5, 1997. G.J. Fishman (ES81).
35. Gamma-Ray Bursts: Observational Overview. Italian Space Agency, Elba, Italy, May 25, 1997. G.J. Fishman (ES81).
36. Gamma-Ray Bursts: Where are we now? “Non-Sleeping Universe: From Galaxies to the Horizon” Conference, Porto, Portugal, November 27–29, 1997. C.A. Meegan (ES84).
37. GLAST Mission: Using Scintillating Fibers as Both the Tracker and the Calorimeter (The). SCIFI97-Conference, University of Notre Dame, South Bend, IN, November 2, 1997. G.J. Fishman (ES81).
38. Global Auroral Imaging As a Remote Diagnostic of Geospace. AIAA, 28th Plasmadynamics and Lasers Conference, Atlanta, GA, June 1997. G.A. Germany, P.G. Richards, G.K. Parks, M.J. Brittnacher, and J.F. Spann, Jr. (ES83).
39. Global Characteristics of Lightning Occurrence from Nighttime Digital DMSF Data. The Second International Symposium on Lightning, Haute-Savoie, France, June 1–5, 1997. R.G. Barry, S.J. Goodman, R. Swick, and G. Scharfen (ES41).
40. Global Warming: What We Do and Do Not Know. Central Alabama Section of the American Institute of Chemical Engineers, Birmingham, AL, May 20, 1997. R.W. Spencer (ES41).
41. Gravitational Effects on Dynamic-Solidification Behavior in Single-Crystal-Stainless Steel. Materials Research Society, Fall Meeting, Boston, MA, December 1–5, 1997. D.P. Corrigan, L.A. Boatner, M.E. Glicksman, P.A. Curreri, and G. Workman (ES75).

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43. GRO J2058+42 X-Ray Observations. 4th Compton Symposium, Williamsburg, VA, April 27–30, 1997. C.A. Wilson-Hodge, M.H. Finger, B.A. Harmon, R.B. Wilson, D. Chakrabarty, and T. Strohmayer (ES84).
44. Growth and Characterization of Cadmium-Telluride Crystals Grown by Physical Vapor Transport. 11th International Conference on Ternary and Multinary Compounds, Salford, United Kingdom, September 8–12, 1997. W. Palosz, K. Graszka, D.C. Gillies, M.A. George, E.E. Collins, K.-T. Chen, Y. Zhang, Z. Hu, A. Burger, H. Chung, B. Raghathamachar, and M. Dudley (ES75).
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APPENDIX

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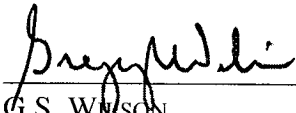
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JANUARY 1-DECEMBER 31, 1997**

Compiled by F.G. Summers

The information in this report has been reviewed for technical content. Review of any information concerning Department of Defense or nuclear energy activities or programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.



G.S. WILSON

DIRECTOR, SPACE SCIENCES LABORATORY

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operation and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503				
1. AGENCY USE ONLY (Leave Blank)		2. REPORT DATE July 1998	3. REPORT TYPE AND DATES COVERED Technical Memorandum	
4. TITLE AND SUBTITLE Space Sciences Laboratory Publications and Presentations January 1–December 31, 1997			5. FUNDING NUMBERS	
6. AUTHORS F.G. Summers, Compiler				
7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(ES) George C. Marshall Space Flight Center Marshall Space Flight Center, AL 35812			8. PERFORMING ORGANIZATION REPORT NUMBER M-883	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) National Aeronautics and Space Administration Washington, DC 20546-0001			10. SPONSORING/MONITORING AGENCY REPORT NUMBER NASA/TM—1998-208534	
11. SUPPLEMENTARY NOTES Prepared by Space Sciences Laboratory, Science and Engineering Directorate				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unclassified–Unlimited Subject Category 88 Nonstandard Distribution			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This document lists the significant publications and presentations of the Space Sciences Laboratory during the period January 1–December 31, 1997. Entries in the main part of the document are categorized according to NASA Reports (arranged by report number), Open Literature, and Presentations (arranged alphabetically by title). Also included for completeness is an Appendix (arranged by page number) listing preprints issued by the Laboratory during this reporting period. Some of the preprints have not been published; those already published are so indicated. Most of the articles listed under Open Literature have appeared in refereed professional journals, books, monographs, or conference proceedings. Although many published abstracts are eventually expanded into full papers for publication in scientific and technical journals, they are often sufficiently comprehensive to include the significant results of the research reported. Therefore, published abstracts are listed separately in a subsection under Open Literature. Questions or requests for additional information about the entries in this report should be directed to Gregory S. Wilson (ES01; 544-7579) or to one of the authors. The organizational code of the cognizant SSL branch or office is given at the end of each entry.				
14. SUBJECT TERMS Scientific and Technical Publications			15. NUMBER OF PAGES 44	
			16. PRICE CODE A03	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	