NASA/TM—2001–211143

Science Directorate Publications and Presentations January 1–December 31, 2000

Compiled by
F.G. Summers
Marshall Space Flight Center, Marshall Space Flight Center, Alabama

National Aeronautics and
Space Administration

Marshall Space Flight Center • MSFC, Alabama 35812

July 2001

Available from:

NASA Center for AeroSpace Information
7121 Standard Drive
Hanover, MD 21076–1320
(301) 621–0390

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487–4650

TABLE OF CONTENTS

NASA REPORTS AND OTHER PUBLICATIONS 1

Technical Memorandums 1
Technical Papers 1
Conference Publications 1

OPEN LITERATURE 2

Refereed Journal Articles 2
Contributions to Books, Conference Proceedings, Etc. 11
Published Abstracts 16

PRESENTATIONS 20

APPENDIX—SCIENCE DIRECTORATE PREPRINTS 34

SCIENCE DIRECTORATE AUTHOR INDEX 37

TECHNICAL MEMORANDUM

SCIENCE DIRECTORATE PUBLICATIONS AND PRESENTATIONS
JANUARY 1 – DECEMBER 31, 2000

NASA REPORTS AND OTHER PUBLICATIONS

Technical Memorandums

1. Science Directorate Publications and Presentations—January 1–December 31, 1999. NASA/TM—2000–210385, July 2000. Compiled by F.G. Summers.

Technical Papers

1. Atlas of Microorganisms from Ancient Phosphorites of Khubsugul (Mongolia). NASA TP—2000–209901. E.A. Zhegallo, A.Y. Rozanov, G.T. Ushatinskaya, R.B. Hoover, L.M. Gerasimenko, and A.L. Ragozina.
2. El Niño During the 1990s: Harbinger of Climatic Change or Normal Fluctuation? NASA TP—2000–209960. R.M. Wilson.
3. On the Bimodality of ENSO Cycle Extremes. NASA TP—2000–209961. R.M. Wilson.
4. The Use of Ferrofluids to Model Materials Processing. NASA TP—2000–210386. F.W. Leslie and N. Ramachandran.

Conference Publications

1. Tenth Biennial Coherent Laser Radar Technology. NASA CP—2000–209758. 2000. Compiled by M.J Kavaya.

OPEN LITERATURE

Refereed Journal Articles

1. The 1997–98 El Niño Event and Related Wintertime Lightning Variations in the Southeastern United States. *Geophys. Res. Lett.*, *27*(4), 541–544, February 15, 2000. S.J. Goodman, D.E. Buechler, K. Knupp, K.T. Driscoll, and E.W. McCaul.

2. 35-Day Evolution of the Her X-1 Pulse Profile: Evidence For a Resolved Inner Disk Occultation of the Neutron Star. *Astrophys. J.*, 539, 392–412, August 10, 2000. D.M. Scott, D. Leahy, and R.B Wilson.

3. Alfvenicity of Fluctuations Associated with the Kelvin-Helmholtz Instability. *Physics of Plasmas*, *7*(7), 2995–3003, July 2000. S. Parhi and S.T. Suess.

4. Assessment of Localized Deformations in Sand Using X-Ray Computed Tomography. *ASTM Geotechnical Testing J.*, *23*(3), 274–299, 2000. K.A. Alshibli, S. Sture, N.C. Costes, M.L. Frank, M.R. Lankton, S.N. Batiste, and R.A. Swanson.

5. An Assessment of Magnetic Conditions for Strong Coronal Heating in Solar Active Regions by Comparing Observed Loops with Computed Potential Field Lines. *Astrophys. J.*, *528*, 1004–1014, January 10, 2000, Erratum, *538*, 467, July 20, 2000. D.A. Falconer, G.A. Gary, R.L. Moore, and J.G. Porter.

6. The BATSE Gamma-Ray Burst Spectral Catalog. I. High-Time Resolution Spectroscopy of Bright Bursts Using High–Energy Resolution Data. *J. Astrophys. Suppl.*, *126*, 19–36, January 2000. R.D. Preece, M.S. Briggs, R.S. Mallozzi, G.N. Pendleton, W.S. Paciesas, and D.L. Band.

7. BEAM-ish: A Graphical User Interface for the Physical Characterization of Macromolecular Crystals, *J. Applied Crystallography, 33*, 1187–1188, 2000. J. Lovelace, E.H. Snell, M. Pokross, A. Arvai, C. Nielson, H. Bellar, and G. Borgstahl.

8. Beta-Adrenergic Receptor Population is Up-Regulated by Increased Cyclic Amp Concentration in Chicken Skeletal Muscle Cells in Culture. *In Vitro Cellular and Developmental Biology—Animal, 36,* 485–492, July 2000. R.B. Young, K.Y. Bridge, and J.R. Vaughn.

9. Career Bio. *Careers and the Engineer*, *12(1)*, 49, 2000. C.A. Wilson.

10. Characterizations of ZnSe Single Crystals Grown by Physical Vapor Transport. *J. Crys. Growth*, *208*, 237–247, 2000. C.-H. Su, M. Dudley, R. Matyi, S. Feth, and S.L. Lehoczky.

11. Coincident Polar/UVI and Wind Observations of Pseudobreakups. *Geophys. Res. Lett.*, *27*, 1379–1382, 2000. M.O. Fillingim, G.K. Parks, L.J. Chen, M.J. Brittnacher, G.A. Germany, J.F. Spann, Jr., D.E. Larson, and R.P. Lin.

12. Combined Satellite- and Surface-Based Estimation of the Intracloud/Cloud-to-Ground Lightning Ratio Over the Continental United States. *Monthly Weather Review*, *129*, 108–122, 2000. D.J. Boccippio, K. Cummins, H.J. Christian, and S.J. Goodman.

Refereed Journal Articles (Continued)

13. A Compact X-Ray System for Macromolecular Crystallography. *Review of Sci. Instr.*, *71(10)*, 3900–3904, October 2000. M.V. Gubarev, E. Ciszak, I.Y. Ponomarev, and M.K. Joy.

14. Comparison of Ground-Based 3-Dimensional Lightning Mapping Observations with Satellite-Based LIS Observations in Oklahoma. *Geophys. Res. Lett.*, *27*, 1703–1706, 2000. R.J. Thomas, P.R. Krehbiel, W. Rison, T. Hamlin, D.J. Boccippio, S.J. Goodman, and H.J. Christian.

15. Contactless Growth of ZnSe Single Crystals by Physical Vapor Transport. *J. Crys. Growth*, *213*, 267–275, 2000. C.-H. Su, M.A. George, W. Palosz, S. Feth, and S.L. Lehoczky.

16. Correlative Aspects of the Solar Electron Neutrino Flux and Solar Activity. *Astrophys. J.*, *545*, 532–546, December 10, 2000. R.M. Wilson.

17. Cryo-Trapping the Distorted Octahedral Reaction Intermediate of Manganese Superoxide Dismutase. *J. Molecular Biology*, *296*, 951–959, 2000. G. Borgstahl and E.H. Snell.

18. Crystallization of Biological Macromolecules in Microgravity. *The Biochemist*, *21(6),* 19–24, 2000. E.H. Snell, N.E. Chayen, and J.R. Helliwell.

19. Current-Produced Magnetic Field Effects on Current Collection. *J. Geophys. Res.*, *105*, 15835–15842, July 6, 2000. G.V. Khazanov, N.H. Stone, E.N. Krivorutsky, and M.W. Liemohn.

20. Data Retrieval Algorithms for Validating the Optical Transient Detector (OTD) and Lightning Imaging Sensor (LIS). *J. Atmospheric and Oceanic Technology*, *17*, 279–297, March 2000. W.J. Koshak, R.J. Blakeslee, and J.C. Bailey.

21. A Decision Support Information System for Urban Landscape Management Using Thermal Infrared Data. *Photogrammetric Engineering and Remote Sensing, 66(10),* 1195–1207, 2000. D.A. Quattrochi, J.C. Luvall, D.L. Rickman, M.G. Estes, Jr., C.A. Laymon, and B.F. Howell.

22. Detailed Analysis of the Pulsations During and After Bursts from the Bursting Pulsar (GRO J1744-28). *Astrophys. J.*, *540*, 1062–1068, September 10, 2000. P. Woods, C. Kouveliotou, J. van Paradijs, T.M. Koshut, M.H. Finger, M.S. Briggs, G.J. Fishman, and W.H.G. Lewin.

23. Discovery of Spatial and Spectral Structure in the X-Ray Emission from the Crab Nebula. *Astrophys. J. Lett.*, *536,* L81–L84, June 20, 2000. M.C. Weisskopf, J.J. Hester, A.F. Tennant, R.F. Elsner, N.S. Schulz, H.L. Marshall, M. Karovska, J.S. Nichols, D.A. Swartz, J.J. Kolodziejczak, and S.L. O'Dell.

24. The Distance and Mass of the Galaxy Cluster Abell 1995 Derived from Sunyaev-Zel'dovich Effect and X-Ray Measurements. *Astrophys. J.*, *541*, 37–48, September 20, 2000. S.K. Patel, M.K. Joy, J.E. Carlstrom, G.P. Holder, E.D. Reese, P.L. Gomez, J.P. Hughes, L. Grego, and W.L. Holzapfel.

25. A Dynamic Model for the Interaction Between an Insoluble Particle and an Advancing Solid/Liquid Interface. *Metallurgical and Materials Transactions A*, *31A*, 2559–2568, October 2000. A.V. Catalina, S. Mukherjee, and D.M. Stefanescu.

26. Effect of Electrical Stimulation on Beta-Adrenergic Receptor Population and Coupling Efficiency in Chicken and Rat Skeleton Muscle Cell Cultures. *In Vitro Cellular and Developmental Biology*, *36*, 167–173, March 2000. R.B. Young, K.Y. Bridge, and C.J. Strietzel.

Refereed Journal Articles (Continued)

27. Effect of Melt Convection at Various Gravity Levels and Orientations on the Forces Acting on a Large Spherical Particle in the Vicinity of a Solidification Interface. *J. Crys. Growth*, *211*, 446–451, March 2000. A.V. Bune, S. Sen, S. Mukherjee, A.V. Catalina, and D.M. Stefanescu.

28. Effects of Faraday Rotation Observed in Filter Magnetograph. Submitted to *Solar Physics*, *191*, 309–324, 2000. M.J. Hagyard, M.L. Adams, J.E. Smith, and E.A. West.

29. Evidence for a Supernova in Reanalyzed Optical and Near-Infrared Images of GRB 970228. *Astrophys. J.*, *536*, 185–194, June 10, 2000. T.J. Galama, N. Tanvir, P.M. Vreeswijk, R.A. Wijers, P.J. Groot, E. Rol, J. van Paradijs, C. Kouveliotou, A.S. Fruchter, N. Masetti, et al.

30. Faint Radio Sources and Star Formation History. *Astrophys. J.*, *544*(1), 641–658, December 1, 2000. E.A. Richards, D. Haarsma, B. Partridge, and R. Windhorst.

31. Far Ultraviolet Imaging from the IMAGE Spacecraft: 1. System Design. *Space Sci. Rev.*, *91*, 243–270, 2000. S. Mende, H. Heetderks, H. Frey, M. Lampton, S.P. Geller, S. Habraken, C. Jamar, P. Rochus, J.F. Spann, Jr., S. Fuselier, J.C. Gerard, and G.R. Gladstone.

32. Far Ultraviolet Imaging from the IMAGE Spacecraft: 2. Wideband FUV Imaging. *Space Sci. Rev.*, *91*, 271–285, 2000. S. Mende, H. Heetderks, H. Frey, M. Lampton, S.P. Geller, J.F. Spann, Jr., H. Dougani, S. Fuselier, and S. Murphree.

33. First Results from a Microfocus X-Ray System for Macromolecular Crystallography. J. *Appl. Crystallography*, *33*, 882–887, 2000. M.V. Gubarev, E. Ciszak, I.Y. Ponomarev, W.M. Gibson, and M.K. Joy.

34. Full Cycle, Low Loss, Low Distortion Phase Modulation from Multilayered Dielectric Stacks with Terahertz Optical Bandwidth. *Optics Express (ISSN 1049-4087), 7*(9), 311–322, October 23, 2000. A.S. Keys and R.L. Fork.

35. Gamma-Ray Burst Class Properties. *Astrophys. J.*, *538*, 165–180, July 20, 2000. J. Hakkila, D.J. Haglin, G.N. Pendleton, R.S. Mallozzi, C.A. Meegan, and R.J. Roiger.

36. Geostatistics and Classification in Remote Sensing. Sponsored by the Royal Geographical Society–Institute of British Geographers, Remote Sensing Society and the Association of American Geographers, Remote Sensing Specialty Group, Special issue of *Computers and Geosciences, 26(4)*, 2000. edited by P.M. Atkinson and D.A. Quattrochi.

37. Global Auroral Response to a Solar Wind Pressure Pulse. *Advances in Space Research, 25*, 1377–1385, 2000. M.J. Brittnacher, M. Wilber, M.O. Fillingim, D. Chua, G.K. Parks, J.F. Spann, Jr., and G.A. Germany.

38. Global Core Plasma Model. Accepted *J. Geophys. Res.*, *105(A8)*, 18,819–18,833, August 1, 2000. D.L. Gallagher, P.D. Craven, and R.H. Comfort.

39. Global Lightning Variations Caused by Changes in Thunderstorm Flash Rate and by Changes in Number of Thunderstorms. *J. Appl. Met./TRMM Special Issue*, 39, 2223–2230, 2000. E. Williams, K. Rothkin, D. Stevenson, and D.J. Boccippio.

Refereed Journal Articles (Continued)

40. Gold Coating of Fiber Tips in Near-Field Scanning Optical Microscopy. *Optik Journal*, *111(9),* 410–412, 2000. C.S. Vikram and W.K. Witherow.

41. GRB 990712: First Detection of Polarization Variability in a Gamma-Ray Burst. *Astrophys. J. Lett.*, *544*, 707–711, December 1, 2000. E. Rol, R.A. Wijers, P.M. Vreeswijk, T.J. Galama, J. van Paradijs, C. Kouveliotou, N. Masetti, E. Pian, E. Palazzi, F. Frontera, L. Kaper, and E.P.J. van den Heuvel.

42. Hard X-Ray Detection of the High Redshift Quasar 4C 71.07. *Astrophys. J.*, *531(2)*, 642–646, 2000. A. Malizia, L. Bassani, A.J. Dean, M.L. McCollough, J.B. Stephen, and S.N. Zhang.

43. The High Mosaicity Illusion: Revealing the True Physical Characteristics of Macromolecular Crystals. *Acta Cryst. D.*, *D56,* 986–995*,* 2000. H. Bellamy, E.H. Snell, and G. Borgstahl.

44. High Undercooling of $Ni_{59}Nb_{41}$ Alloy in a Containerless Electrostatic Levitation Facility. *Appl. Phys. Lett.*, *77(20),* 3266–3268, November 13, 2000. M.B. Robinson, D. Li, J.R. Rogers, R.W. Hyers, and L. Savage.

45. Hurricane Georges' Landfall in the Dominican Republic: Detailed Airborne Doppler Radar Imagery. Submitted to *Bull. Am. Meteor. Soc.*, *81*, 999–1018, May 2000. B. Geerts, G.M. Heymsfield, L. Tian, J.B. Halverson, A.R. Guillory, and M.I. Mejia.

46. In-Situ Partial Pressure Measurements and Visual Observation During Crystal Growth of ZnSe by Seeded Physical Vapor Transport. *J. Crys. Growth*, *209*, 687–694, 2000. C.-H. Su, S. Feth, and S.L. Lehoczky.

47. The Intensity Distribution of Faint Gamma-Ray Bursts Detected with BATSE. *Astrophys. J., 533*, 696–709, April 20, 2000. J.M. Kommers, W.H.G. Lewin, C. Kouveliotou, J. van Paradijs, G.N. Pendleton, C.A. Meegan, and G.J. Fishman.

48. Introduction to This Special Issue on Geostatistics and Geospatial Techniques in Remote Sensing. *Computers and Geosciences, 26(4)*, 359, May 30, 2000. P.M. Atkinson and D.A. Quattrochi.

49. Investigation of Two Reported Arcminute-Scale Microwave Decrements at 28.5 GHz. *Astrophys. J.*, *539,* 67–72, 2000. W.L. Holzapfel, J.E. Carlstrom, L. Grego, E.D. Reese, and M.K. Joy.

50. Investigations of Remote Plasma Irregularities by Radio Sounding: Applications of the Radio Plasma Imager on IMAGE. *Space Sci. Reviews*, *91(1–2)*, 391–419, 2000. S.F. Fung, R.F. Benson, D.L. Carpenter, B.W. Reinisch, and D.L. Gallagher.

51. Laboratory Calibration of the Optical Transient Detector (OTD) and the Lightning Imaging Sensor (LIS). *J. Atmos. And Oceanic Technology*, *17*, 905–915, July 2000. W.J. Koshak, H.J. Christian, M.F. Stewart, J.W. Bergstrom, J.M. Hall, and R.J. Solakiewicz.

52. Laboratory Detection of X-Ray Fringes with a Grazing-Incidence Interferometer. *Nature*, *407*, 160–162, 2000. W. Cash, A. Shipley, S. Osterman, and M.K. Joy.

Refereed Journal Articles (Continued)

53. Light Curves and Radio Structure for the September 1999 Transient Event in V4641 SAGITTARII (=XTE J1819-254=SAX J1819.3=2525). *Astrophys. J.*, *544(2)*, 977–992, 2000. R.M. Hjellming, M. Rupen, R.W. Hunstead, D. Campbell-Wilson, A.J. Mioduszewski, B.M. Gaensler, D.A. Smith, R.J. Sault, R.P. Fender, R.E. Spencer, C.J. de la Force, A.M. Richards, S.T. Garringtron, S. Trushkin, F.D. Ghigo, E.B. Waltman, and M.L. McCollough.

54. Lightning Activity Within a Tornadic Thunderstorm Observed by the Optical Transient Detector (OTD). *Geophys. Res. Lett.*, *27(15)*, 2253–2256, August 1, 2000. D.E. Buechler, K.T. Driscoll, S.J. Goodman, and H.J. Christian.

55. Limits on Arcminute Scale Cosmic Microwave Background Anisotropy with the BIMA Array. *Astrophys. J.*, *539*, 57–66, 2000. W.L. Holzapfel, J.E. Carlstrom, L. Grego, G.P. Holder, M.K. Joy, and E.D. Reese.

56. Magnetospheric Response to the Arrival of the Shock Wave in Front of the Magnetic Cloud of January 10, 1997. *Advances of Space Research*, *25*, 1401, 2000. M. Wuest, M. Huddleston, J.L. Burch, D.L. Dempsey, P.D. Craven, M.O. Chandler, J.F. Spann, Jr., W.K. Peterson, H.L. Collin, and W. Lennartson.

57. The May 1997 SOHO-Ulysses Quadrature. *J. Geophys. Res.*, *105*, 25,033–25,051, November 1, 2000. S.T. Suess, G. Poletto, M. Romoli, M. Neugebauer, B.E. Goldstein, and G.M. Simnett.

58. A Measurement of the Coupling Between Close-Packed Shielded Cassegrain Antennas. *IEEE Transactions on Antennas and Propagation, 48*(5), 836–838, May 5, 2000. S. Padin, J.K. Cartwright, and M.K. Joy.

59. Measurements of Nitrogen Oxides at the Tropopause: Attribution to Convection and Correlation with Lightning. *J. Geophys. Res.*, *D*–105, 3679–3700, 2000. D.P. Jeker, L. Pfister, D. Brunner, D.J. Boccippio, K.E. Pickering, et al.

60. Melt Motion Due to Peltier Marking During Bridgman Crystal Growth With an Axial Magnetic Field. *Flow, Turbulence and Combustion*, *64,* 197–214, 2000. C.C. Sellers, J.S. Walker, F.R. Szofran, and S. Motakef.

61. Modeling Studies of PVT Growth of ZnSe: Current Status and Future Course. *J. Crys. Growth, 208*, 269–281, 2000, N. Ramachandran, C.-H. Su, and S.L. Lehoczky.

62. Molecular Modeling and Experimental Investigations of Nonlinear Optical Compounds—Mono-substituted Derivatives of Dicyanovinylbenzene. *J. Molecular Structure (THEOCHEM)*, *519*, 225–241, April 2000. T.V. Timofeeva, V.N. Nesterov, M.Y. Antipin, R.D. Clark, M. Sanghadasa, B.H. Cardelino, C.E. Moore, and D.O. Frazier.

63. A Multiphase Model for the Intracluster Medium. Roy. Astron. Soc., Mon. Not., *316*, 120–128, 2000. D. Nagai, M.E. Sulkanen, A.E. Evrard.

64. Multiwavelength Observations of Mkn501During the 1997 High State. *Astrophys. J.*, 536, 742, 2000. M. Bottcher, D. Petry, V. Connaughton, et al.

65. Noble Metal Immersion Spectroscopy of Silica Alcogels and Aerogels. *J. Porous Materials*, *7*, 499–508, 2000. D.D. Smith, L. Sibille, E. Ignont, R.J. Cronise, and D.A. Noever.

Refereed Journal Articles (Continued)

66. On the Relative Importance of Convection and Temperature on the Behavior of the Ionosphere in North America During January 6–12, 1997. *J. Geophys. Res.*, *105(A6)*, 12,763–12,776, June 1, 2000. P.G. Richards, M.J. Buonsanto, B.W. Reinisch, J. Holt, J.A. Fennelly, J.L. Scali, R.H. Comfort, G.A. Germany, J. F. Spann, Jr., M.J. Brittnacher, G.K. Parks, and M.-C. Fok.

67. Optical Amplifier for Space Applications. *Optics Express*, *5(12)*, 292–301, 2000. R.L. Fork, S.T. Cole, W.M. Diffey, L.J. Gamble, and A.S. Keys.

68. Optical Characterization of Bulk ZnSeTe Solid Solutions. *J. Appl. Phys.*, *88*(9), 5148–5152, November 1, 2000. C.-H. Su, S. Feth, S. Zhu, S.L. Lehoczky, and L.J. Wang.

69. The Optical Transient Detector (OTD): Instrument Characteristics and Cross-Sensor Validation. *J. Atmos. And Oceanic Tech.*, *17*, 441–458, 2000. D.J. Boccippio, K.T. Driscoll, W.J. Koshak, R.J. Blakeslee, W.L. Boeck, D.M. Mach, H.J. Christian, and S.J. Goodman.

70. Optical Variability of BL Lacertae During the Major Outburst of 1997. *Astrophys. J., 537*, 638–643, July 10, 2000. K.K. Ghosh, B.D. Ramsey, A.C. Sadun, S. Soundararajaperumal, and J. Wang.

71. Optical Variability of Blazars. *Astrophys. J., 127,* 11–26, March 2000. K.K. Ghosh, B.D. Ramsey, A.C. Sadun, and S. Soundararajaperumal.

72. The Photospheric Convection Spectrum. *Solar Physics*, *193,* 299–312, 2000. D.H. Hathaway, J.G. Beck, R.S. Bogart, K.T. Bachmann, G. Khatri, J.M. Petitto, S. Han, and J. Raymond.

73. Physical Mechanisms for the Variable Spin-Down and Light Curve of SGR 1900+14. *Astrophys. J.*, *543, Issue 1*, 340–350, 2000. C. Thompson, R.C. Duncan, P. Woods, C. Kouveliotou, M.H. Finger, and J. van Paradijs.

74. Physical Vapor Transport of Lead Telluride. *J. Crys. Growth*, *216*, 273–282, 2000. W. Palosz.

75. A Plasma Instability Theory of Gamma-Ray Burst Emission. *Astrophys. J.*, *538(2)*, 628–637, August 1, 2000. J.J. Brainerd.

76. Polar Spacecraft Based Comparisons of Intense Electric Fields and Pointing Flux Near and Within the Plasma Sheet-Tail Lobe Boundary to UVI Images: An Energy Source for the Aurora. *J. Geophys. Res.*, *105(18)*, 675–692, 2000. J.R. Wygnant, A. Keiling, C.A. Cattell, M. Johnson, R.L. Lysak, M. Temerin, F.S. Mozer, C.A. Kletzing, J.D. Scudder, W.K. Peterson, C.T. Russell, G.K. Parks, M.J. Brittnacher, G.A. Germany, and J.F. Spann, Jr.

77. Polar/TIDE Results on Polar Ion Outflow. Physics of Sun-Earth Plasma and Field Processes, edited by J.L. Burch, R.L. Carovillano, and S. Antiochos, *Geophys. Monograph No. 109*, 87–101, 2000. T.E. Moore, M.O. Chandler, C.R. Chappell, R.H. Comfort, P.D. Craven, D.C. Delcourt, H.A. Elliott, B.L. Giles, J.L. Horwitz, C.J. Pollock, and Y.-J. Su.

78. Polarity Effects of Substrate Surface in Epitaxial ZnO Film Growth. *J. Crys. Growth, 219,* 361–367, 2000. S. Zhu, C-H. Su, S.L. Lehoczky, M.T. Harris, M.J. Callahan, M.A. George, and P. McCarty.

79. Predictions of Substorms and Intensifications Following Northward Turnings of the IMF. *J. Geophys. Res.*, *105*, 375-384, 2000. G.T. Blanchard, L.R. Lyons, and J.F. Spann, Jr.

Refereed Journal Articles (Continued)

80. Pressure Effects in ZnO Films Using Off-Axis Sputtering Deposition. *J. Crys. Growth*, *211,* 106–110, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, P. Peters, and M.A. George.

81. Pulse Profiles, Accretion Column Dips and a Flare in GX 1+4 During a Faint State. *Astrophys. J.*, *529*, 447–452, 2000. A.B. Giles, D.K. Galloway, J.G. Greenhill, M.C. Storey, and C.A. Wilson.

82. A Quantitative Investigation of Entrainment and Detrainment in Numerically Simulated Cumulonimbus Clouds. *J. Atmos. Science*, *57*, 1657–1674, May 15, 2000. C. Cohen.

83. R6 Hexameric Insulin Complexed with m-Cresol or Rescorcinol. *Acta Crystallographica Section D*, *D56*, 1541–1548, 2000. G.D. Smith, E. Ciszak, L.A. Magrum, W. Pangborn, and R.H. Blessing.

84. The Radio Plasma Imager Investigation on the IMAGE Spacecraft. *Space Sci. Reviews*, *91*, 319–359, 2000. B.W. Reinisch, D.M. Haines, K. Bibl, G. Cheney, I.A. Galkin, X. Huang, S.H. Myers, G.S. Sales, R.F. Benson, S.F. Fung, J.L. Green, W.W.L. Taylor, J.-L. Bougeret, R. Manning, N. Meyer-Vernet, M. Moncuquet, D.L. Carpenter, D.L. Gallagher, and P.H. Reiff.

85. Radio Plasma Imager Simulations and Measurements. *Space Sci. Reviews*, *91*, 361–389, 2000. J.L. Green, R.F. Benson, S.F. Fung, W.W.L. Taylor, S.A. Boardsen, B.W. Reinisch, D.M. Haines, K. Bibl, G. Cheney, I.A. Galkin, X. Huang, S.H. Myers, G.S. Sales, J.-L. Bougeret, R. Manning, N. Meyer-Vernet, M. Moncuquet, D.L. Carpenter, D.L. Gallagher, and P.H. Reiff.

86. Regional Differences in Tropical Lightning Distributions. *J. Appl. Met.* (TRMM Special Issue), *39*, 2231–2248, 2000. D.J. Boccippio, S.J. Goodman, and S. Heckman.

87. Relationship of O+ Field-Aligned Flows and Densities to Convection Speed in the Polar Cap at 5000 Km Altitude. *J. Atmos. Sci. & Terrestrial Phys.*, 495–503, 2000. B.A. Stevenson, J.L. Horwitz, B. Creel, H.A. Elliott, R.H. Comfort, Y.-J. Su, T.E. Moore, and P.D. Craven.

88. The Role of Marangoni Convection for the FZ-Growth of Silicon. *Microgravity and Space Station Utilization 1*, 31–40, 2000. P. Dold, A. Croell, F.R. Szofran, S. Nakamura, T. Hibiya, and K.W. Benz.

89. Satellite Motions Effects on Current Collection in Low Earth Orbit. *Astronomical and Astrophysical Transactions, 18(6)*, 819–828, 2000. T.X. Zhang, K.S. Hwang, S.T. Wu, N.H. Stone, C.L. Chang, A.T. Drobot, and K.H. Wright.

90. A Satellite-Derived Upper-Tropospheric Water Vapor Transport Index for Climate Studies. *J. Applied Meteorology*, *39*(1), 15–41, 2000. G.J. Jedlovec, J.A. Lerner, and R.J. Atkinson.

91. Shear Band Formation in Plane Strain Experiments of Sand. *J. Geotechnical and Geoenvironmental Engineering*, *126*(6), 495–503, June 2000. K.A. Alshibli and S. Sture.

92. Sigmoid CME Source Regions at the Sun: Some Recent Results. *J. Atmos. and Solar-Terrestrial Phys.*, *62*, 1427–1435, 2000. A.C. Sterling.

93. A Simple Approach for Calibrating Imaging Systems with a Solid-State Sensor. *Rev. of Sci. Instruments*, *71(11)*, 4149–4154, November 2000. F.W. Leslie, S.S. Cha, and N. Ramachandran.

Refereed Journal Articles (Continued)

94. Solar Spicules: A Review of Recent Models and Targets for Future Observations. *Solar Phys*., *196*, 79–111, 2000. A.C. Sterling.

95. A Solid Case for Microgravity Processing. *Aerospace America*, 16–18, June 2000. R.N. Grugel.

96. Spectral Analysis of Vibrational Harmonic Motion by Use of a Continuous-Wave CO_2 Doppler Lidar. *J. Optical Soc. Of America A*, *17,* 1840–1845, 2000. M.A. Jarzembski and V. Srivastava.

97. Statistical Properties of SGR 1806–20 Bursts. *Astrophys. J. Lett*., *532*, L121–L124, April 1, 2000. E. Gogus, P. Woods, C. Kouveliotou, J. van Paradijs, M.S. Briggs, R.C. Duncan, and C. Thompson.

98. Studies of Solar Helicity Using Vector Magnetograms. *Solar Phys*., *189*, 25–43, 2000. M.J. Hagyard and A.A. Pevtsov.

99. The Sun and the Solar Wind Close to the Sun. *Advances in Space Research*, *26(5)*, 761–770, 2000. S.T. Suess.

100. The Sunyaev–Zel'dovich Effect in Abell 370. *Astrophys. J*., *539*, 39–51, April 10, 2000. L. Grego, J.E. Carlstrom, M.K. Joy, E.D. Reese, G.P. Holder, S.K. Patel, W.L. Holzapfel, and A.K. Cooray.

101. Sunyaev-Zel'dovich Effect-Derived Distances to the High-Redshift Clusters MS 0451.6-0305 and Cl 0016+16. *Astrophys. J*., *533*, 38–49, April 10, 2000. E.D. Reese, J.J. Mohr, J.E. Carlstrom, M.K. Joy, L. Grego, G.P. Holder, W.L. Holzapfel, J.P. Hughes, S.K. Patel, and M. Donahue.

102. Suppression/Reversal of Natural Convection by Exploiting the Temperature/Composition Dependence of Magnetic Susceptibility. *J. Appl. Phys*., *88(7)*, 4347–4351, 2000. C.D. Seybert, J.W. Evans, F.W. Leslie, and W.K. Jones.

103. Surface Texture and Structure of ZnO Films Synthesized by Off-Axis Sputtering Deposition. *J. Mater. Res*., *15*, 1125, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, M.A. George, and D.H. Lowndes.

104. Synchrotron X-Ray Reciprocal Space Mapping, Topography and Diffraction Resolution Studies of Macromolecular Crystal Quality. *Acta Cryst. D*., *D56*, 868–880, 2000. T.J. Boggon, J.R. Helliwell, R.A. Judge, D.P. Siddons, E.H. Snell, and V. Stojanoff.

105. Thermochemical Model and Experimental Studies on Physical Vapor Transport of Lead Telluride–Selenide. *J. Crys. Growth*, 216, 283–292, 2000. W. Palosz, H.A. Alexander, and K. Grasza.

106. Thermoelectric Magnetohydrodynamic Flow During Crystal Growth with a Moderate or Weak Magnetic Field. *J. Crys. Growth*, *212(3-4)*, 584–596, 2000. Y.Y. Khine, J.S. Walker, and F.R. Szofran.

107. The Timing Evolution of 4U1630-47 During Its 1998 Outburst. *Astrophys. J*., *538*, 307–314, July 20, 2000. S.W. Dieters, T. Belloni, E. Kuulkers, P. Woods, W. Cui, S.N. Zhang, W. Chen, M. van der Klis, J. van Paradijs, J.H. Swank, W.H.G. Lewin, and C. Kouveliotou.

108. Timing Noise in SGR 1806-20. *Astrophys. J. Lett*., *535*, L55–L58, May 24, 2000. P. Woods, C. Kouveliotou, M.H. Finger, E. Gogus, D.M. Scott, S.W. Dieters, C. Thompson, R.C. Duncan, K. Hurley, T. Strohmayer, J.H. Swank, and T. Murakami.

Refereed Journal Articles (Continued)

109. The Tropical Rainfall Measuring Mission (TRMM), Studying the Earth from Space. *TRMM Publication Galley*, *4*, 71–90, April 2000. J. Simpson, C.D. Kummerow, R. Meneghini, A. Hou, R.F. Adler, G. Huffman, B. Barkstrom, B. Wielicki, S.J. Goodman, H.J. Christian, T. Kozu, T.N. Krishnamurti, S. Yang, and B. Ferrier.

110. Use of Traveling Magnetic Fields to Control Melt Convection. *J. Japan Soc. Of Microgravity Applications*, *17(2)*, 98–103, 2000. N. Ramachandran, K. Mazuruk, and M.P. Volz.

111. Vapor Growth and Characterization of ZnSeTe Solid Solutions. *J. Crys. Growth*, *216*, 104–112, 2000. C.-H. Su, Y.G. Sha, M.P. Volz, P. Carpenter, and S.L. Lehoczky.

Contributions to Books, Conference Proceedings, Etc.

1. All-Optical Picosecond Switch in Polydiacetylene Fiber. *Proceedings of ILX–XVI: 16th Interdisciplinary Laser Science Conference, Optical Society of America*, October 22–26, 2000, p. 106, 2000. H.A. Abdeldayem, D.O. Frazier, and M.S. Paley.

2. Applications of Fractal Analytical Techniques in the Estimation of Operational Scale. *Proceedings of Amsterdam, RAI Exhibition and Congress Center*, The Netherlands, July 16–23, 2000, (available on CD-ROM only). C.W. Emerson and D.A. Quattrochi.

3. Assessment of Internal Fabric of Particulate Materials. *Proceedings of the 1st International Conference on Geotechnical, Geoenvironmental Engineering and Management in Arid Lands: Geoengineering in Arid Lands*, Balkema, Rotterdam, Al-Ain, United Arab Emirates, November 4–7, 2000, pp. 115–122, 2000. K.A. Alshibli.

4. Background Simulation of the MSFC GSPC Balloon Payload. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4140, p. 520, 2000. D.A. Swartz, Y. Chen, and B.D. Ramsey.

5. The Chandra X-Ray Observatory: Overview. *Proceedings of SPIE Meeting, Astronomical Telescopes and Instrumentation*, Munich, Germany, March 27–31, 2000, SPIE Vol. 4012, pp. 2–13, 2000. M.C. Weisskopf, H. Tananbaum, L.P. Speybroeck, and S.L. O'Dell.

6. Constitutive and Stability Behavior of Soils in Microgravity Environment. *Proceedings of Space Technology Application International Forum*, Albuquerque, NM, January 31–February 3, 2000, *AIP 504*, 248–250, 2000. K.A. Alshibli, S. Sture, and N.C. Costes.

7. Cryogenic Optical Systems and Instrumentation IX (AM116) Newly Modified Cryogenic Optical Test Facility at the Marshall Space Flight Center. *Proceedings of 45th Annual SPIE Meeting, Infrared Spaceborne Remote Sensing VIII Session 3*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4131, 382–391, 2000. R. Eng, J. Kegley, and J. Keidel.

8. Cygnus X–3. *IAU Circular No. 7365*, 2000. M.L. McCollough, G.J. Fishman, and E.B. Waltman.

9. Development of Constellation—X Optics Technologies at MSFC. *Proceedings of SPIE Meeting, Astronomical Telescopes and Instrumentation,* Munich, Germany, March 27–31, 2000, SPIE Vol. 4012, pp. 316–327, 2000. S.L. O'Dell, W.D. Jones, W.S. Smith, and B.D. Ramsey.

10. Developmental Changes in Expression of Beta-Adrenergic Receptors in Cultures of C2C12 Skeletal Muscle Cells. *Proceedings of In Vitro Biology Conference*, San Diego, CA, June 11, 2000, *36*, p. 86a, 2000. R.B. Young, K.Y. Bridge, and J.R. Vaughn.

11. The Earth Occultation Technique with the Burst and Transient Source Experiment. *Proceedings of Astronomical Data Analysis Software and Systems IX*, A.S.P. Conf. Ser. *216*, 587–590, 2000. C.A. Wilson, B.A. Harman, M.L. McCollough, G.J. Fishman, S.N. Zhang, and W.S. Paciesas.

12. Effects of End-Wall Vibration on Oscillatory Thermocapillary Flow. *Proceedings of TMS Conference*, Nashville, TN, March 13, 2000, (available on CD-ROM only). J. Bhowmick, Q. Kou, A. Anikumar, R.N. Grugel, and T. Wang.

13. Evaluation of Skin Temperatures Retrieved from GOES–8. *Proceedings of 10th Conference of Satellite Meteorology and Oceanography*, Long Beach, CA, January 10–12, 2000, pp. 137–140, 2000. R.J. Suggs, G.J. Jedlovec, W.M. Lapenta, and S.L. Haines.

Contributions to Books, Conference Proceedings, Etc. (Continued)

14. Experimental Evaluation of Bifurcation Phenomena in Sands. *Proceedings of 8th International Symposium on Plasticity*, British Columbia, Canada, July 16–20, 2000, pp. 276–278, 2000. K.A. Alshibli, S. Sture, and S.N. Batiste.

15. Experimental Results from a Grazing Incidence X-Ray Interferometer. *Proceedings of SPIE Conference on Astronomical Telescopes and Instrumentation,* Munich, Germany, March 27–31, 2000, SPIE, Vol. 4012, pp. 270–277, 2000. M.K. Joy, A. Shipley, W. Cash, J. Carter, D.E. Zissa, and M. Cuntz.

16. Fluorescence Studies of Protein Crystal Nucleation. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, August 1, 2000, SPIE, Vol. 4098, pp.1–10, 2000. M.L. Pusey and J. Sumida.

17. Global Climate Monitoring with the EOS PM-Platform's Advanced Microwave Scanning Radiometer (AMSR–E). *Proceedings of 10th Conference on Satellite Meteorology and Oceanography, 80th AMS Annual Meeting*, Long Beach, CA, January 9–14, 2000, IEEE Trans. Geosci. Rem. Sens., 28, pp. 800–810, 2000. R.W. Spencer.

18. Grazing Incidence Optics for X-Ray Interferometry. *Proceedings of SPIE Conference on Astronomical Telescopes and Instrumentation,* Munich, Germany, March 27–31, 2000, SPIE Vol. 4012, pp. 456-466, 2000. A. Shipley, D.E. Zissa, W. Cash, and M.K. Joy.

19. GRO J2058+42 Observations With BATSE and RXTE. *Proceedings of 5th Compton Symposium*, Portsmouth, NH, September 15, 1999, AIP Conf. Proc. No. 510, pp. 208–212, 2000. C.A. Wilson, M.H. Finger, and D.M. Scott.

20. HERO: High Energy Replicated Optics for a Hard X-Ray Balloon Payload. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4138, pp. 147–153, 2000. B.D. Ramsey, D. Engelhaupt, C.O. Speegle, S.L. O'Dell, R.A. Austin, R.F. Elsner, J.J. Kolodziejczak, and M.C. Weisskopf.

21. Imaging the Sunyaev-Zel'dovich Effect in Clusters of Galaxies. *Proceedings of the American Astronomical Society Meeting*, Atlanta, GA, *32*, p. 1801, 2000. M.K. Joy, S.K. Patel, J.E. Carlstrom, L. Grego, G.P. Holder, W.L. Holzapfel, J.P. Hughes, and E.D. Reese.

22. Integrated Modeling of a Semirigid Hybrid Mirror and a Highly Actuated Membrane Mirror as Candidates for the Next Generation Space Telescope. *Proceedings of SPIE Conference on Astronomical Telescopes and Instrumentation*, Munich, Germany, March 27–31, 2000. SPIE, Vol. 4013, pp. 810–826, 2000. L. Craig, D.N. Jacobson, G. Mosier, M. Nein, T. Page, D. Redding, S. Sutherlin, and G. Wilkerson.

23. Ion Transmission to the Focal Plane of the Chandra X-Ray Observatory. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000. SPIE, Vol. 4140, pp. 135–143, 2000. J.J. Kolodziejczak, R.F. Elsner, R.A. Austin, and S.L. O'Dell.

24. Large-Scale Coronal Heating from "Cool" Activity in the Solar Magnetic Network. *Proceedings of Solar Physics Division Meeting*, Lake Tahoe, NV, June 19–22, 2000, Bull. Am. Astron. Soc., 32, p. 812, 2000. D.A. Falconer, R.L. Moore, J.G. Porter, and D.H. Hathaway.

Contributions to Books, Conference Proceedings, Etc. (Continued)

25. Magnetic Field Suppression of Flow in Semiconductor Melt. *Proceedings of 38th AIAA Aerospace Sciences Meeting*, Reno, NV, January 10–13, 2000, AIAA Paper 2000–0698, 2000. A.I. Fedoseyev, E.J. Kansa, C. Marin, M.P. Volz, and A.G. Ostrogorsky.

26. The MAXIM Pathfinder Mission: X-Ray Imaging at 100 Microarcseconds. *Proceedings of SPIE Conference on Astronomical Telescopes and Instrumentation*, Munich, Germany, March 27–31, 2000, SPIE, Vol. 4012, pp. 258–269, 2000. W. Cash, N.E. White, and M.K. Joy.

27. Measurements with the Chandra Flight Contamination Monitor. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000. SPIE, Vol. 4138, pp. 1–9, 2000. R.F. Elsner, J.J. Kolodziejczak, S.L. O'Dell, D.A. Swartz, A.F. Tennant, and M.C. Weisskopf.

28. Measurements with the Chandra X-Ray Observatory's Flight Contamination Monitor. *Proceedings of SPIE Meeting, Astronomical Telescopes and Instrumentation*, Munich, Germany, March 27–31, 2000, SPIE Vol. 4012, pp. 612–618, 2000. R.F. Elsner, J.J. Kolodziejczak, S.L. O'Dell, D.A. Swartz, A.F. Tennant, and M.C. Weisskopf.

29. Modeling the Chandra Space Environment. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4140, pp. 111–112, 2000. W.C. Blackwell, J.I. Minow, K. Warren, R.M. Suggs, S.L. O'Dell, D.A. Swartz, A.F. Tennant, and S.N. Virani.

30. Morphology and Viability of Pleistocene Microbiota from the CRREL Permafrost Tunnel Near Fox, Alaska. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4137, pp. 22–34, 2000. R.B. Hoover.

31. Multi-Wavelength Analysis of the March 26, 1991, Solar Flare and Relation of Spatial and Temporal Characteristics of H-alpha Emission to the Dynamics of the Magnetic Field and Charged Particle Association. *Proceedings of High Energy Solar Physics Workshop*, Goddard Space Flight Center, MD, 1999. Astronom. Soc. Pacific Conf. Series, 206, pp. 426–438, 2000. V.G. Kurt, V.V. Akimov, M.J. Hagyard, and D.H. Hathaway.

32. NASA Microgravity Materials Science Conference Proceedings. *Proceedings of NASA Microgravity Materials Science Conference*, Huntsville, AL, June 6–8, 2000, (available on CD-ROM only). N. Ramachandran.

33. New Alloys for Electroformed Replicated X-Ray Optics. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4138, pp. 154–163, 2000. D. Engelhaupt, B.D. Ramsey, S.L. O'Dell, W.D. Jones, and J.K. Russell.

34. Numerical Calculation of the Drag Force Acting on an Insoluble Particle Moving in Front of a Solidifying Interface. *Proceedings of 12th International Symposium on Experimental Methods for Microgravity Materials Science Section in 129th TMS Annual Meeting*, Nashville, TN, March 13, 2000, (available on CD-ROM only). A.V. Catalina, D.M. Stefanescu, and S. Sen.

35. Optical Design of Segmented Hexagon Array Solar Mirror. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000. *SPIE, Vol. 4093*, p. 333, 2000. V.B. Huegele.

36. Over-Expression, Purification, and Crystallization of Human Dihydrolipoamide Dehydrogenase. *Proceedings of 8th International Conference on Crystallization of Biological Macromolecules,* Sandestin, FL, May 2000, *B-16*, 159, 2000. Y. Hong, E. Ciszak, and M. Patel.

Contributions to Books, Conference Proceedings, Etc. (Continued)

37. Overview of the Solar Ultraviolet Magnetograph Investigation. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4139, pp. 350–361, 2000. E.A. West, J.G. Porter, J.M. Davis, G.A. Gary, and J.F. Spann, Jr.

38. Potential Challenges in Near-Field Scanning Optical Microscopy for Space Applications. *Proceedings of SPIE Conference on Optical Devices and Diagnostics in Materials Science*, San Diego, CA, August 2, 2000, SPIE, Vol. 4098, pp. 26–30, 2000. C.S. Vikram and W.K. Witherow.

39. Preliminary Results of the Investigation of the Carbonaceous Chondrites Nogoya, Allende, and Murray. *Proceedings of SPIE Conference—Instruments, Methods, and Missions for Astrobiology,* III, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4137, pp. 87–99, 2000. R.B. Hoover and A.Y. Rozanov.

40. Quantifying Void Ratio Variation in Sand Using Computed Tomography. *Proceedings of Geo-Denver 2000, American Society of Civil Engineers,* Denver, CO, August 5–8, 2000. Geotechnical Measurements: Lab and Field, Geotechnical Special Publication No. 106, pp. 30–43, 2000. K.A. Alshibli, S.N. Batiste, R.A. Swanson, S. Sture, N.C. Costes, and M.R. Lankton.

41. Radiation Environment of the Chandra X-Ray Observatory. *Proceedings of 45th Annual SPIE Meeting*, San Diego, CA, July 30–August 4, 2000, SPIE, Vol. 4140, pp. 99–110, 2000. S.L. O'Dell, M. Bautz, W.C. Blackwell, Y.M. Butt, R. Cameron, R.F. Elsner, S. Gussenhoven, J.J. Kolodziejczak, J.I. Minow, D.A. Swartz, A.F. Tennant, S.N. Virani, and K. Warren.

42. Recent Developments in Hybrid Mirror Technology for the Next Generation Space Telescope. *Proceedings of SPIE Conference on Astronomical Telescopes and Instrumentation,* Munich, Germany, March 27–31, 2000, SPIE, Vol. 4013, pp. 935–941, 2000. G. Mehle, K. Dodson, and E. Ruch.

43. Reduction of Sample Rotation in Electrostatic Levitation. *Proceedings of TMS Conference*, Nashville, TN, March 15, 2000, (available on CD-ROM only). R.W. Hyers, W.L. Johnson, L. Savage and J.R. Rogers.

44. Remote Sensing Investigation of the Ancient Maya Landscape. *Proceedings of Annual Meeting 2000, Society of American Archaeology*, Philadelphia, PA, April 7, 2000. T.L. Sever.

45. Remote Sensing Methods. Chapter 2 in Science and Technology in Historic Preservation, *Advances in Archaeological and Museum Science, Volume 4,* pp. 21–51 edited by R. Williamson and P. Nickens, Kluwer Academic and Plenum Press, New York, 2000. T.L. Sever.

46. Remote Sensing of Aerosol Backscatter and Earth Surface Targets by Use of an Airborne Focused Continuous Wave CO_2 Doppler Lidar Over Western North America. *Proceedings of Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling, and Simulation*, Redstone Arsenal, AL, November 7–9, 2000, (available on CD-ROM only). M.A. Jarzembski and V. Srivastava.

47. Remote Sensing of Wind Fields and Aerosol Distribution with Airborne Scanning Doppler Lidar. *Proceedings of Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling, and Simulation*, Redstone Arsenal, AL, November 7–9, 2000, (available on CD-ROM only). J. Rothermel and D.R. Cutten.

Contributions to Books, Conference Proceedings, Etc. (Continued)

48. The Role of the BATSE Instrument Response in Creating the GRB E-Peak Distribution. *20th Texas Symposium on Relativistic Astrophysics*, Paris, France, December 1998, (available on CD-ROM only) 2000. J.J. Brainerd, G.N. Pendleton, R.S. Mallozzi, M.S. Briggs, and R.D. Preece.

49. The Solar–B Mission. *Proceedings of 31st Meeting of the Solar Physics Division (SPD), AAS*, Stateline, NV, June 19–22, 2000, *32*, 1602D, 2000. J.M. Davis.

50. Solidification Processing of Immiscible Liquids in the Presence of Applied Ultrasonic Energy. *Proceedings of TMS Conference*, Nashville, TN, March 13, 2000, (available on CD-ROM only). S. Kim and R.N. Grugel.

51. SUMI: The Solar Ultraviolet Magnetograph Investigation. *Proceedings of 31st Meeting of the Solar Physics Division (SPD) of the AAS*, Stateline, NV, June 19–22, 2000, *32*, p. 828, 2000. J.M. Davis, J.G. Porter, G.A. Gary, E.A. West, D.M. Rabin, R.J. Thomas, and J.M. Davila.

52. Tornadic Supercells on May 3, 1999, Viewed From Space During an Overpass of the NASA TRMM Observatory. *Proceedings of Severe Storms Conference*, Orlando, FL, September 11–15, 2000, pp. 638–641, 2000. S.J. Goodman, D. Buechler, K. Driscoll, and D.W. Burgess.

53. The Urban Fabric of the City as It Affects Thermal Energy Responses Derived From Remote Sensing Data. *Proceedings of 2000 AAG Meeting*, Pittsburgh, PA, April 4, 2000. (available on CD-ROM only). D.A. Quattrochi, J.C. Luvall, and M.G. Estes.

54. Urban Heat Islands and Summertime Convective Thunderstorms in Atlanta: Three Case Studies. Chapter in *Atmospheric Environment, 34,* pp. 507–516, 2000. R. Bornstein and Q. Lin.

55. XTE J1118–480. *IAU Circular No. 7390*, 2000. C.A. Wilson and M.L. McCollough.

56. XTE J1543–568. *IAU Circular No. 7366,* 2000. M.H. Finger and C.A. Wilson.

57. XTE J1550–564. *IAU Circular No. 7400*, 2000. M.L. McCollough, C.A. Wilson, and X. Sun.

Published Abstracts

1. Auroral Plasma Fountain and Polar Wind During Rising Solar Activity. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S391, 2000. B.E. Marji, B.L. Giles, T.E. Moore, M.O. Chandler, and H.A. Elliott.

2. Discrete and Diffuse Aurora During Varying Activity Levels: Simultaneous FAST and Polar UVI Observations. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1044, 2000. D. Chua, M.J. Brittnacher, B. Peria, G.K. Parks, G.A. Germany, J.F. Spann, Jr., and C.W. Carlson.

3. DyFK Simulation of Field-Aligned Ion Flows Observed by POLAR Within Convecting Flux Tubes Over the Polar Ionosphere. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1060, 2000. J.N. Tu, X.-Y. Wu, J.L. Horwitz, B.A. Stevenson, T.E. Moore, and V.N. Coffey.

4. The Effect of a Rotating Magnetic Field on Rayleigh-Benard Convection. Annual American Physical Society, Minneapolis, MN, March 21–24, 2000; *Bull. APS, 45*(1), 868–869, 2000. M.P. Volz and K. Mazuruk.

5. ENSO-Related Variability of Tropical Oceanic Precipitation as Represented in Satellite-Based Data Sets. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S110, 2000. F.R. Robertson, D. Fitzjarrald, R.W. Spencer, and E.W. McCaul.

6. Evolution of Plasmaspheric Refilling from Comparisons of Satellite Observations with Simulations by an Interhemispheric Plasmasphere Model. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S395, 2000. R.H. Comfort, P.G. Richards, J.-H. Liao, and P.D. Craven.

7. Hydrometeor Profiles Derived from Airborne Radar and Wideband Radiometer Observations. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F162, 2000. G.M. Skofronick-Jackson, J.R. Wang, G.M. Heymsfield, and R.E. Hood.

8. IMAGE Software Suite. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1033, 2000. D.L. Gallagher, G. Gurgiolo, R. Burley, J.L. Green, and R.D. Campbell.

9. Imaging Calorimeter for ACCESS Simulations with GEANT/FLUKA. The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000; *Bull. APS*, *45(2)*, 2000. J. Watts, L.W. Howell, and J. Lee.

10. The Immediate Auroral Response to the Interplanetary Shock Event. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1044, 2000. J.F. Spann, Jr.

11. An Intercomparison of Radiation Codes for Retrieving Upper Tropospheric Humidity in the 6.3-Micron Band: A Report From the 1st GvaP Workshop. *Bull. Amer. Met. Soc, 81*, 797–808, 2000. B. Soden, S. Tjemkes, J. Schmetz, R. Saunders, J. Bates, B. Ellingson, R. Engelen, L. Garand, D. Jackson, G.J. Jedlovec, T. Kleespies, and M. Koenig, et al.

Published Abstracts (Continued)

12. Large-Scale Coronal Heating from 'Cool' Activity in the Solar Magnetic Network. *Bull. AAS, 32*, 812, 2000. D.A. Falconer, Jr., R.L. Moore, J.G. Porter, and D.H. Hathaway.

13. LIS Validation at the KSC-ER. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F47, 2000. W.J. Koshak, E.P. Krider, and D.J. Boccippio.

14. Magnetosheath Flow Anomalies in 3-D. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F966, 2000. O.L. Vaisberg, J.L. Burch, V.N. Smirnov, L.A. Avanov, T.E. Moore, J.H. Waite, Jr., A.A. Skalsky, N.L. Borodkova, V.N. Coffey, and D.L. Gallagher.

15. Meeting Report on the Tenth AMS Conference on Satellite Meteorology and Oceanography. *Bull. of the American Meteorological Society*, pp. 2213–2221, 2000. R. Ferraro, M. Colton, G. Deblonde, G.J. Jedlovec, and T. Lee.

16. Near-Simultaneous POLAR and DMSP Measurements of Topside Ionospheric Up and Down Flows at High Latitudes. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S391, 2000. W. Zeng, J.L. Horwitz, B.A. Stevenson, X.-Y. Wu, Y.-J. Su, P.D. Craven, F.J. Rich, and T.E. Moore.

17. Photoemission of Single Dust Grains for Heliospheric Conditions. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S347, 2000. J.F. Spann, Jr., C.C. Venturini, M.M. Abbas, and R.H. Comfort.

18. Precipitation Signatures Observed by EDOP, AMPR and MIR During TRMM—LBA. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F141, 2000. J.R. Wang, G.M. Skofronick-Jackson, R.E. Hood, G.M. Heymsfield, and W. Manning.

19. Prediction of Coronal Mass Ejections from Vector Magnetograms: Results From More Active Regions. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F998, 2000. D.A. Falconer, Jr., R.L. Moore, and G.A. Gary.

20. The Proton and Electron Aurora as Seen by IMAGE–FUV and FAST. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1034, 2000. H.U. Frey, S.B. Mende, C.W. Carlson, H. Heetderks, M. Lampton, S.P. Geller, J.M. Stock, R. Abiad, O.H.W. Siegmund, T.J. Immel, J.-C. Cerard, B. Hubert, S. Habraken, E. Renotte, C. Jamar, P. Rochus, J.F. Spann, Jr., and R. Gladstone.

21. Relation to Field Aligned O+ Flows at 5000 km Altitude to Auroral Structure and Brightness. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S391, 2000. B.A. Stevenson, J.L. Horwitz, P.D. Craven, T.E. Moore, G.K. Parks, and Y.-J. Su.

22. Relative Influence of Initial Surface and Atmospheric Conditions on Seasonal Water and Energy Balances over the GCIP Region. American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S119, 2000. R.O. Oglesby, S. Marshall, J.O. Roads, and F.R. Robertson.

Published Abstracts (Continued)

23. Remote Sensing of Atlanta's Urban Sprawl and the Distribution of Land Cover and Surface Temperatures. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1041, 2000. C.A. Laymon, M.G. Estes, Jr., and D.A. Quattrochi.

24. Remote Sensing of Atomic Oxygen Column Densities with UVI Images. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S339, 2000. G.A. Germany, W.R. Swift, P.G. Richards, J.F. Spann, Jr., M.J. Brittnacher, and G.K. Parks.

25. The Response of the Ionospheric Cusp to the Solar Wind Through Two Perspectives: Low Energy Charged Particle In-Situ Measurements and Low–Energy Neutral Atom Imaging. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1036, 2000. V.N. Coffey, T.E. Moore, M.O. Chandler, and P.D. Craven.

26. Results of a Deep Chandra Observation of the Crab Nebula and Pulsar. Proceedings of American Astronomical Society, Honolulu, HI, November 8, 2000; *Bull. AAS., 32*, 3604, 2000. M.C. Weisskopf, W. Becker, R.F. Elsner, S. Kahn, J.J. Kolodziejczak, S. Murray, S. O'Dell, F. Paerels, N. Shibazaki, D.A. Swartz, A.F. Tennant, J. Trumper, and S.N. Zhang.

27. Scattering/Transmission of Energetic H+, He+, and O+ Through a Thin Composite Si/Lexan/C Foil. Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos, 81(48)*, F1041, 2000. M.L. Adrian, D.C. Hamilton, G.C. Ho, T.E. Moore, C.J. Pollock, B.I. Magi, and K.C. Hsieh.

28. Simulated Active Region Emission and Dynamics: A STEREO Perspective. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F977, 2000. D.A. Alexander, M.J. Aschwanden, N. Hurlburt, and G.A. Gary.

29. Solar Wind Influence on the Oxygen Content of Ion Outflow in the High Altitude Polar Cap During Solar Minimum Conditions. American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S370, 2000. H.A. Elliott, R.H. Comfort, P.D. Craven, M.O. Chandler, and T.E. Moore.

30. Spaceweather.com: Daily Updates on the Sun and the Effects of Solar Activity on Earth. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1041, 2000. T. Phillips and R.J. Koczor.

31. Stellar Calibration of the WIC and SI Imagers and the GEO Photometers on IMAGE/FUV. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1034, 2000. G.R. Gladstone, S.B. Mende, H.U. Frey, S.P. Geller, T.J. Immel, M. Lampton, J.F. Spann, Jr., J.-C. Gerard, S. Habraken, E. Renotte, C. Jamar, and P. Rochus.

32. The Storm-Time Plasmasphere as Seen by the Extreme Ultraviolet (EUV) Imager on the IMAGE Spacecraft. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1035, 2000. D.L. Gallagher, B.R. Sandel, and D.L. Carpenter.

33. A Study of Magnetospheric-Ionospheric Coupling Processes in the Cusp. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S391, 2000. V.N. Coffey, M.O. Chandler, and T.E. Moore.

Published Abstracts (Continued)

34. SUMI: The Solar Ultraviolet Magnetograph. *Bull. AAS*, *32*, 828, 2000. J.G. Porter, J.M. Davis, G.A. Gary, E.A. West, D.M. Rabin, R.J. Thomas, and J.M. Davila.

35. Topside Ionosphere Parameters Observed by POLAR and DMSP at High Latitudes. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, *81(48)*, F1009, 2000. W. Zeng, J.L. Horwitz, B.A. Stevenson, G.A. Germany, P.D. Craven, F.J. Rich, and T.E. Moore.

36. The Use of Indirect Estimates of Soil Moisture to Initialize Coupled Models and Its Impact on Land Surface/Atmosphere Interactions. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S128, 2000. W.M. Lapenta, W. Crosson, and S. Dembek.

37. Water Vapor Transport Over the Tropical Oceans During ENSO as Diagnosed from TRMM and SSM/1 Data. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, *81(19)*, S123, 2000. B.-J. Sohn, F.R. Robertson, E.A. Smith, and S.-C. Park.

PRESENTATIONS

1. An Algorithm to Atmospherically Correct Visible and Thermal Airborne Imagery. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. D.L. Rickman, J.C. Luvall, and S. Schiller.

2. Assessment of Constitutive and Stability Behavior of Sands Under Plane Strain Condition. Fifth Microgravity Fluid Physics and Transport Phenomena Conference, Cleveland, OH, August 9–11, 2000. K.A. Alshibli.

3. Biological Molecules: Have Most of our Problems Already Been Solved? Nanotech 2000 Conference, Houston, TX, September 24–29, 2000. J.P. Downey.

4. C/SiC Advanced Mirror System Demonstrator Design. SPIE Conference on Astronomical Telescopes and Instrumentation, Munich, Germany, March 27–31, 2000. B. Catanzaro, G. Mehle, M. Seilonen, U. Papenburg, C. Muller, W. Pfrang, S. Kutter, E. Ruch, R. Mercier, P. Lightsey, et al.

5. Case Study of Solar Wind and IMF Influence on Ionospheric Outflow. Huntsville 2000 Workshop in Calloway Gardens, GA, October 30, 2000. H.A. Elliott, R.H. Comfort, P.D. Craven, M.O. Chandler, and T.E. Moore.

6. The Chandra X-Ray Observatory—An Overview. 33rd COSPAR Scientific Assembly, Warsaw, Poland, July 20, 2000. M.C. Weisskopf.

7. The Chandra X-Ray Observatory Overview—Part I. American Physical Society Meeting, Long Beach, CA, April 30, 2000. M.C. Weisskopf.

8. The Chandra X-Ray Observatory Overview. *American Astronomical Society Meeting,* Rochester, NY, June 4–8, 2000. M.C. Weisskopf.

9. The Chandra X-Ray Observatory: First Year of Operation. 45th Annual SPIE Meeting, San Diego, CA, July 30–August 4, 2000. M.C. Weisskopf, H. Tananbaum, L. Van Speybroeck, and S.L. O'Dell.

10. Characterization of a Fabry-Perot-Based Electrooptic Modulator. Optical Society of America ILS Conference, Providence, RI, October 23, 2000. C.E. Banks, C. Yelleswarapu, A. Sharma, D.O. Frazier, B.G. Penn, and H.A. Abdeldayem.

11. Characterization of Electronic Materials HgZnSe and HgZnTe Using Innovative and Conventional Techniques. AIAA Annual Meeting, Reno, NV, January 10–12, 2000. G. Tanton, R. Kesmodel, J. Burden, C.-H. Su, S.D. Cobb, and S.L. Lehoczky.

12. Characterizing the Use of Ultrasonic Energy in Promoting Uniform Composite Growth in Immiscible Alloys. International Conference on Scientific Computing and Mathematical Modeling, Milwaukee, WI, May 27, 2000. R.N. Grugel and A.I. Fedoseyev.

PRESENTATIONS (Continued)

13. Charge Detector for the Imaging Calorimeter for ACCESS (ICA). The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. J. Lee and J.H. Adams.

14. Coherent Doppler Laser Radar: Technology Development and Applications. Workshop on Multi/ Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. M.J. Kavaya.

15. Confirmation of NLDN Long Range Strike Locations with LIS Observations. Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000. W.L. Boeck, D.J. Boccippio, S.J. Goodman, K. Cummins, and J. Cramer.

16. Considerations for a Next Generation GRB Observatory. American Physical Society Meeting, Long Beach, CA, April 29–May 2, 2000. G.J. Fishman.

17. Considerations for a Next Generation GRB Observatory. High Energy Astrophysics Division of the American Astronomical Society, Honolulu, HI, November 6–10, 2000. G.J. Fishman.

18. Constitutive and Stability Behavior of Soils in Microgravity Environment. Space Technology App. International Forum, Albuquerque, NM, January 28, 2000. K.A. Alshibli, S. Sture, and N.C. Costes.

19. Control of Convection by Dynamic Magnetic Fields for VB, FZ and THM Crystal Growth Applications. FSRC Crystal Growth and Epitaxy 2000, La Jolla, CA, April 3–5, 2000. K. Mazuruk.

20. Convection Induced by Traveling Magnetic Fields in Semiconductor Melts. Poster presentation at American Conference on Crystal Growth and Epitaxy, Vail, CO, August 12–18, 2000. K. Mazuruk.

21. Correlations and Gravitational Temperature in Settling Suspensions. American Institute of Chemical Engineers Conference, Los Angeles, CA, November 13, 2000. P.N. Segre, F. Liu, P. Umbanhower, and D.A. Weitz.

22. Cross-Linking Studies of Lysozyme Nucleation. International Conference on Crystallization of Biological Micromolecules, Sandestin, FL, May 15, 2000. E. Forsythe and M.L. Pusey.

23. Cryogenic Optical Testing at the Marshall Space Flight Center. OSA Optical Fabrication and Testing Topical Meeting, Quebec, Canada, 2000. R. Eng, J. Keidel, J. Kegley, and J.M. Geary.

24. Crystal Growth of ZnSe and Related Ternary Compound Semiconductors by Vapor Transport. Materials Science Conference, Huntsville, AL, June 8, 2000. C.-H. Su, R.F. Brebrick, A. Burger, M. Dudley, R. Matyi, N. Ramachandran, M.P. Volz, and H. Shih.

25. Crystallization of bFGF-DNA Aptamer Complexes Using a Novel Sparse Matrix for Protein-Nuclei Acid Complexes. ICCBM–8, Sandestin, FL, May 14–19, 2000. C.E. Kundrot and C.L. Barnes.

26. Current Experiments in Microgravity. Gordon Conference, Plymouth, NH, July 26, 2000. D.C. Gillies.

PRESENTATIONS (Continued)

27. The Current Microgravity Materials Science Program. Materials Science Conference, Huntsville, AL, June 8, 2000. D.C. Gillies.

28. Development Approach for the Accommodation of Materials Science Research for the Materials Science Research Facility on the *International Space Station*. Space Technology and Application International Forum (STAIF–00), Albuquerque, NM, January 30–February 3, 2000. D.A. Schaefer, S.D. Cobb, and F.R. Szofran.

29. Development of Constellation-X Optics Technologies at MSFC. 45th Annual SPIE Meeting, San Diego, CA, July 30–August 4, 2000. S.L. O'Dell, W.D. Jones, W.S. Smith, B.D. Ramsey, and D. Engelhaupt.

30. Development of Constellation-X Optics Technologies at MSFC. Yamagata University, Kojirakawa, Yamagata, Japan, February 13–22, 2000. S.L. O'Dell, W.D. Jones, W.S. Smith, and B.D. Ramsey.

31. Development of Materials Science Research Facility (MSRF) and Experiment Apparatus for the *International Space Station* (*ISS*). TMS Minerals, Metals, Materials Society Meeting, Nashville, TN, March 12–16, 2000. D.A. Schaefer, S.D. Cobb, and F.R. Szofran.

32. Direct Visualization of an Impurity Depletion Zone. Laboratoire de Cristallographie et Modelisation des Materiaus, Mineraus et Biologiques Symposium, Nancy, France, August 26, 2000. A.A. Chernov, J.M. Garcia-Ruiz, and B.R. Thomas.

33. Dispersion Relation and the Associated Instabilities Occurring in the Plumes. Solar, Heliospheric, and Interplanetary Environments, South Lake Tahoe, NV, June 14–17, 2000. S. Parhi and S.T. Suess.

34. Does Warming a Lysozyme Solution Cook One's Data? American Crystallographic Association Meeting, St. Paul, MN, July 23-28, 2000. M.L. Pusey, M. Burke, and R.A. Judge.

35. Dry Air Entrainment into Hurricane Earl. Institute of Electrical and Electronics Engineers, 2000 International Geoscience and Remote Sensing Symposium, July 24–28, 2000. A.R. Guillory, G.J. Jedlovec, R.J. Atkinson, R.E. Hood, and F.J. LaFontaine.

36. A Dust Grain Photoemission Experiment. 8th Workshop on the Physics of Dusty Plasma, Santa Fe, NM, April 26–28, 2000. C.C. Venturini, J.F. Spann, Jr., M.M. Abbas, and R.H. Comfort.

37. Dusty Plasma Experiments Using an Electrodynamic Balance. International Topical Conference on Plasma Physics: Colloidal Plasma Science, Trieste, Italy, July 3–7, 2000. J.F. Spann, Jr., C.C. Venturini, M.M. Abbas, S.T. Suess, and R.H. Comfort.

38. Effect of Beta-Adrenergic Agonists on Cyclic AMP Synthesis in Chicken Skeletal Muscle Cells in Culture. American Society for Cell Biology, San Francisco, CA, December 10, 2000. R.B. Young and K.Y. Bridge.

PRESENTATIONS (Continued)

39. Effect of Elevated Pressure on the Heat Transfer and Power Requirements During Bridgman Growth of PMN-PT Crystals. 3rd International Workshop Modeling in Crystal Growth, Stony Brook, NY, October 18–20, 2000. A.V. Bune, A.G. Ostrogorsky, C. Martin, and I. Nicoara.

40. The Effect of pH on the Growth and Aspect Ratio of Chicken Egg White Lysozyme Crystals Prepared in Different Buffers. ICCBM–8, Sandestin, FL, May 15, 2000. U.J. Gibson, E.E. Horrell, Y. Kou, and M.L. Pusey.

41. Effect of UV Absorption on Fabrication of Fiber-Optic Bragg Gratings. ILS-VI: 16th Interdisciplinary Laser Science Conference, Providence, RI, October 22–26, 2000. Y. Wang, A. Sharma, and J. Grant.

42. Effects of Gravity on ZBLAN Glass. International Symposium on Non-Oxide Glasses, Florianopolis, Brazil, April 10–11, 2000. D.S. Tucker, G.L. Workman, and G.A. Smith.

43. The Effects of Thermal History on Nucleation of Tetragonal Lysozyme Crystals, or Hot Protein and Cold Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. M. Burke, R.A. Judge, and M.L. Pusey.

44. Electrophoretic Porosimetry of Sol-Gels. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. L.A. Snow, D.D. Smith, L. Sibille, A.J. Hunt, and J. Ng.

45. The Electrostatic Levitation Facility at NASA's Marshall Space Flight Center. 14th Symposium on Thermophysical Properties, Boulder, CO, June 26, 2000. J.R. Rogers, R.W. Hyers, L. Savage, and M.B. Robinson.

46. Entrainment of Upper Level Dry Air Into Hurricane Earl. 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, May 29–June 2, 2000. A.R. Guillory, G.J. Jedlovec, R.E. Hood, R.J. Atkinson, and F.J. LaFontaine.

47. Estimating Cosmic Ray Spectral Parameters from Simulated Detector Responses. The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. L.W. Howell, J. Watts, J. Lee.

48. An Experimental and Mathematical Study to Evaluate the Role of Ultrasonic Energy in Promoting Microstructural Uniformity During Controlled Directional Solidification Processing. 3rd International Aerospace Congress, Moscow, Russia, August 24, 2000. R.N. Grugel and A.I. Fedoseyev.

49. Exploiting the Temperature Dependence of Magnetic Susceptibility to Control Convection in Fundamental Studies of Solidification Phenomena. Microgravity Materials Science Conference, Huntsville, AL, June 6–8, 2000. C.D. Seybert, J.W. Evans, F.W. Leslie, and W.K. Jones.

50. The Fall 2000 and Fall 2001 SOHO-Ulysses Quadratures. 34th ESLAB Symposium, Noordwijk, The Netherlands, October 3–5, 2000. S.T. Suess and G. Poletto.

PRESENTATIONS (Continued)

51. Fine Structure in the Corona and Solar Wind at High Heliographic Latitudes at Solar Maximum. 34th ESLAB Symposium, Noordwijk, The Netherlands, October 3–5, 2000. S.T. Suess and G. Poletto.

52. Fluid Physics and Macromolecular Crystal Growth in Microgravity. Fifth Microgravity Fluid Physics and Transport Phenomena Conference, Cleveland, OH, August 10, 2000. R.A. Judge, M.L. Pusey, E.H. Snell, N. Chayen, T.J. Boggon, and J.R. Helliwell.

53. Fluorescence Studies of Protein Crystal Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. J. Sumida and M.L. Pusey.

54. Future Missions for Gamma-Ray Astronomy. Annual Meeting of the American Physical Society, Starkville, MS, November 3, 2000. C.A. Meegan.

55. The Generation of Smooth High Solar Wind From Plume-Interplume Mixing. Ultra Violet Coronagraph Spectrometer Team Meeting, Northeast Harbor, ME, September 27, 2000. S.T. Suess and S. Parhi.

56. Glass/Jamming Transition in Colloidal Aggregation. AICHE Conference, Los Angeles, CA, November 13, 2000. P.N. Segre, V. Prasad, and D.A. Weitz.

57. The GLAST Burst Monitor. Marcel Grossman Meeting, Rome, Italy, July 2, 2000. C.A. Meegan.

58. Global Climate Monitoring with the EOS PM-Platform's Advanced Microwave Scanning Radiometer (AMSR–E). 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9–14, 2000. R.W. Spencer.

59. The Global Precipitation Mission: Understanding Rainfall Across the Scale Spectrum. Jet Propulsion Laboratory, Pasadena, CA, October 2, 2000. E.A. Smith.

60. Gravitational Influences on the Growth of Polydiacetylene Films by Ultraviolet Solution Polymerization. American Chemical Society Conference, San Francisco, CA, March 25–31, 2000. D.O. Frazier.

61. Gravity Effects in Diffusive Coarsening of Bubble Lattices: von Neumann's Law. Annual Microgravity Science and Space Symposium, Reno, NV, January 12, 2000. D.A. Noever.

62. Gravity-Related Transport Process in Off-Axis Sputtering Deposition. 12th American Conference on Crystal Growth and Epitaxy, Vail, CO, August 13–18, 2000. S. Zhu, C.-H. Su, and S.L. Lehoczky.

63. Growth of Carbon Nanostructure Materials Using Laser Vaporization. 11th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes, Nitrides and Silicon Carbide, Porto, Portugal, September 3–8, 2000. S. Zhu, C.-H. Su, and S.L. Lehoczky.

64. Growth of Solid Solution Single Crystals. Materials Science Conference, Huntsville, AL, June 8, 2000. S.L. Lehoczky, F.R. Szofran, and D.C. Gillies.

PRESENTATIONS (Continued)

65. Halting Convection During Solidification by Application of a Susceptibility Dependent Magnetic Body Force. The Annual Meeting of the Minerals, Metals and Materials Society, Symposium on Experimental Methods in Microgravity, Nashville, TN, March 12–16, 2000. C.D. Seybert, J.W. Evans, F.W. Leslie, and W.K. Jones, Jr.

66. High Resolution X-Ray Diffraction Imaging of Macromolecules with Synchrotron Radiation. American Crystallographic Association, St. Paul, MN, July 23, 2000. V. Stojanof, T.J. Boggon, J.R. Helliwell, R.A. Judge, A. Olczak, E.H. Snell, and D.P. Siddons.

67. High Spatial Resolution Airborne Multispectral Thermal Infrared Remote Sensing Data for Analysis of Urban Landscape Characteristics. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone, AL, November 7–9, 2000. D.A. Quattrochi, J.C. Luvall, and M.G. Estes, Jr.

68. Homoepitaxial ZnO Film Growth. 2000 U.S. Workshop on the Physics and Chemistry of II–VI Materials, Albuquerque, NM, November 1, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, M.T. Harris, M.J. Callahan, P. McCarty, and M.A. George.

69. Hurricane Wind Field Measurements with Scanning Airborne Doppler Lidar During CAMEX–3. 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, May 29–June 2, 2000. J. Rothermel, D.R. Cutten, J.N. Howell, L.S. Darby, R.M. Hardesty, D.M. Tratt, and R.T. Menzies.

70. IMAGE and the Plasmasphere: Model and Data Comparison. Huntsville 2000 Workshop, Callaway Gardens, GA, October 29–November 3, 2000. D.L. Gallagher, B.R. Sandel, and D. Ober.

71. IMAGE EUV Observations and Modeling of the Plasmaspheric Density Trough Associated with the 24 May 2000 Geomagnetic Storm. Huntsville Workshop 2000 "A New View of Space," 2000. M.L. Adrian, D.L. Gallagher, J.L. Green, and B.R. Sandel.

72. Imaging Calorimeter for ACCESS Simulations with GEANT/FLUKA. The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. J. Watts, L.W. Howell, and J. Lee.

73. Imaging of the Sunyaev-Zel'dovich Effect in Clusters of Galaxies. High Energy Astrophysics Division (HEAD), American Astronomical Society, Honolulu, HI, November 6–10, 2000. M.K. Joy.

74. Influence of Microgravity on Silica Sol-Gel Formation. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. L. Sibille, D.D. Smith, R. Cronise, A.J. Hunt, D.B. Wolfe, L.A. Snow, S. Oldenberg, and N. Halas.

75. Insert Concepts for the Material Science Research Rack (MSRR–1) of the Material Science Research Facility (MSRF) on the *International Space Station* (*ISS*). TMS Minerals, Metals, Materials Society Meeting, Nashville, TN, March 12–16, 2000. M. Crouch, B. Carswell, J. Farmer, F. Rose, P. Tidwell.

PRESENTATIONS (Continued)

76. Integration of the Empirical Exospheric GCPM Plasma Model into IRI. 33rd Committee on Space Research, Scientific Assembly, Warsaw, Poland, July 16–23, 2000. D.L. Gallagher and D. Bilitza.

77. Interannual Variability of the Tropical Energy Balance: Reconciling Observations and Models. TRMM Science Meeting, Greenbelt, MD, October 20–November 2, 2000. F.R. Robertson and D.E. Fitzjarrald.

78. Interannual Variability of Tropical Precipitation as Represented in Satellite-Based Data Sets. 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9-14, 2000. F.R. Robertson, D.E. Fitzjarrald, J. Roads, and E.W. McCaul.

79. Interannual Variations in Satellite Observed Top-of-Atmosphere Longwave Clear-Sky Radiation and Consistency with Diagnostics from Global Climate Models. 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9–14, 2000. F.R. Robertson, W.D. Braswell, and D.E. Fitzjarrald.

80. Investigating the Role of the Earth's Ionosphere in Space Weather: Modeling and Observations of High-Latitude Ionospheric Outflows. Space Storms & Space Weather Hazards, NATO Adv. Study Institute, Crete, Greece, June 19–29, 2000. J.L. Horwitz, W. Zeng, B.A. Stevenson, X.-Y. Wu, G.A. Germany, Y.J. Su, P.D. Craven, F.J. Rich, and T.E. Moore.

81. Is It Possible to Have the Similar Unit Cell in Crystals of Different Form From the Same Macromolecule? (A Case Study of Ribosome Crystals). ICCMB–8 Conference, Sandestin, FL, May 18, 2000. E.A. Karpova.

82. I–V Characteristics of a Ferroelectric Field Effect Transistor. 12th Symposium on Integrated Ferroelectrics, Aachen, Germany, March 12, 2000. T.C. MacLeod and F.D. Ho.

83. Laboratory Studies of Optical Characteristics and Condensation Processes of Cosmic Dust Particles. 8th Workshop on the Physics of Dusty Plasma, Santa Fe, NM, April 26–28, 2000. J.F. Spann, Jr., M.M. Abbas, and C.C. Venturini.

84. Lessons From Communicating Space Science Over the Web. IEEE Aerospace 2000, Big Sky, MT, March 18–25, 2000. D. Dooling and D. Triese.

85. Lingering Problems in Gamma-Ray Observations of GRBs. Marcel Grossman Meeting, Rome, Italy, July 2, 2000. C.A. Meegan.

86. Macromolecule Crystal Quality Improvement in Microgravity: The Role of Impurities. American Crystallographic Association Annual Meeting, St. Paul, MN, July 23, 2000. R.A. Judge, E.H. Snell, M.L. Pusey, M.G. Sportiello, P. Todd, H. Bellamy, G. Borgstahl, M. Pokross, and J.M. Cassanto.

87. Materials Science Research Hardware for Applications on the *International Space Station*: An Overview of Typical Hardware Requirements and Features. 38th American Institute of Aeronautics and Astronautics (AIAA) Conference, Reno, NV, January 10–13, 2000. D.A. Schaefer, M.R. Fiske, and R. Srinivas.

PRESENTATIONS (Continued)

88. May 3 Tornadic Supercells Viewed from Space During an Overpass of the NASA TRMM Observatory Poster Presentation. National Symposium on the Great Plains Tornado Outbreak of 3 May, 1999, Oklahoma City, OK, April 30–May 3, 2000. S.J. Goodman, D. Buechler, K. Driscoll, D.W. Burgess, and M.A. Magsig.

89. Measurement of Temperature Fluctuations and Microscopic Growth Rates in a Silicon Floating Zone on TEXUS36. European Space Components Conference, Noordwijk, The Netherlands, March 20, 2000. A. Croell, M. Schweizer, P. Dold, T. Kaiser, M. Lichtensteiger, and K.W. Benz.

90. Mechanisms for the Crystallization of ZBLAN. NASA Microgravity Materials Conference, Huntsville, AL, June 8, 2000. E.C. Ethridge and D.S. Tucker.

91. Metal Nanoparticle Aerogel Composites. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. D.D. Smith, L. Sibille, E. Ignont, and L.A. Snow.

92. Metrology of Optical Beam Expander for Space Readiness Coherent Lidar Experiment (SPARCLE). OSA Optical Fabrication and Testing Topical Meeting, Quebec City, Canada, June 18–22, 2000. T. Blackwell, F. Amzajerdian, and T.J. Kester.

93. Microgravity Research Results and Experiences from the NASA *Mir* Space Station Program. Space Station Symposium, T6—Joint Session on Recent International Research Results from Mir, Rio de Janeiro, Brazil, October 26, 2000. R.A. Schlagheck and B.Trach.

94. Modeling of a Non-Dilute Alloy Solidification Under Terrestrial and Microgravity Conditions. International Congress of Theoretical and Applied Mechanics, Chicago, IL, August 28, 2000. A.V. Bune, D.C. Gillies, and S.L. Lehoczky.

95. Modeling of Ultrasonically Generated Liquid-Liquid Dispersions During Controlled Directional Solidification. University of New York, Stony Brook, NY, October 8, 2000. R.N. Grugel and A.I. Fedoseyev.

96. Molecular View of Protein Crystal Growth: Molecular Interactions, Surface Reconstruction, and Growth Mechanism. ICCBM–8, Sandestin, FL, May 15, 2000. A. Nadarajah, H. Li, J.H. Konnert, and M.L. Pusey.

97. MSFC Research in Lightweight, X-Ray Mirrors for the Constellation-X Mission. OSA Optical Fabrication and Testing Topical Meeting, Quebec City, Canada, June 18–22, 2000. W.D. Jones and S.L. O'Dell.

98. Multiple Satellite Observations of High-Latitude Ionospheric Outflows. The First S-Ramp Conference, Sapporo, Japan, October 4, 2000. J.L. Horwitz, W. Zeng, B.A. Stevenson, X.-Y. Wu, G.A. Germany, P.D. Craven, F.J. Rich, and T.E. Moore.

PRESENTATIONS (Continued)

99. Multi-Use Space Optics Test Facility. OSA Optical Meeting, Quebec, Canada, June 18–23, 2000. J.C. Reily, J. Kegley, J. Keidel, R. Siler, E. Wright, D. Jacobson, S. Smith, R. Eng, and H.P. Stahl.

100. The NASA Materials Science Research Program. The Future of New Discoveries on the International Space Station. Canadian Space Agency—Spacebound 2000, Vancouver, Canada, May 16, 2000. R.A. Schlagheck and B. Trach.

101. NASA Sponsored Research Involving Crystallization of Biological Materials. ICCBM–8, Sandestin, FL, May 14–19, 2000. J.P. Downey.

102. NASA's Needs for Biomaterials Within the HEDS Initiative. Spacebound 2000, Vancouver, Canada, May 15, 2000. D.C. Gillies.

103. New Directions in NASA's Biological Crystal Growth Program on the International Space Station. Gordon Research Conference, Boston, MA, July 6, 2000. C.E. Kundrot.

104. New Directions in NASA's Biological Crystal Growth Program on the International Space Station. American Crystallographic Association Meeting, St. Paul, MN, July 22, 2000. C.E. Kundrot.

105. Novel Directional Solidification of Hypermonotectic Alloys. Materials Science Conference, Huntsville, AL, June 8, 2000. R.N. Grugel and A.I. Fedoseyev.

106. Novel Materials for Application as Shielding During Extended Space Flights. Radiation Shielding Workshop, Berkeley, CA, August 8, 2000. R.N. Grugel.

107. Numerical and Experimental Investigation of the Effects of Acceleration Disturbances on Microgravity Experiments. First International Symposium on Microgravity Research and Applications in Physical Sciences and Biotechnology, Sorrento, Italy, September 11, 2000. N. Ramachandran.

108. Observational Review of Gamma-Ray Bursts. Joint European Nations Astronomical meeting, Moscow, Russia, May 29–June 3, 2000. G.J. Fishman.

109. Observations with the Chandra X-Ray Observatory—The First Year. Annual Meeting of the American Physical Society, Starkville, MS, November 3, 2000. M.C. Weisskopf.

110. On Measuring Cosmic Ray Energy Spectra with the Rapidity Distributions. American Physical Society Meeting, Long Beach, CA, April 30, 2000. J.H. Adams, G. Hachindzhagyan, A. Chilingarian, L. Drury, et al.

111. Onset of the Magnetic Explosion in Filament-Eruption Flares and CMEs. Catholic University of America, Washington, DC, March 6–9, 2000. R.L. Moore and A.C. Sterling.

PRESENTATIONS (Continued)

112. Onset of the Magnetic Explosion in Filament-Eruption Flares and Coronal Mass Ejections: Single-Bipole Events. SHINE 2000, South Lake Tahoe, NV, June 14–17, 2000. R.L. Moore and A.C. Sterling.

113. Onset of the Magnetic in Coronal Mass Ejections. Ultraviolet Coronal Spectrometer/Solar Heliospheric Observatory 2000 Science Meeting, Northeast Harbor, Maine, September 27, 2000. R.L. Moore, A.C. Sterling, H. Hudson, and J.R. Lemen.

114. Optical Lightning Detection from Space. Lecture at University of Arizona, Tucson, AZ, November 6, 2000. H.J. Christian.

115. Optical Test of NGST Developmental Mirrors. Astronomical Telescopes and Instrumentation Conference, Munich, Germany, March 27–31, 2000. J.B. Hadaway, J.M. Geary, P. Reardon, B. Peters, J. Keidel, and G. Chavers.

116. Overexpression of Human Bone Alkaline Phosphatase in Pichia Pastoris. 2000 Current Topics in Gene Expressions Systems Conference, San Diego, CA, September 25, 2000. C. Malone and L.J. Karr.

117. Overview of Mirror Technology Development for Large Lightweight Space-Based Optical Systems. SPIE Conference on Intelligent Systems and Advanced Manufacturing, Boston, MA, November 5–8, 2000. W.S. Smith and H.P. Stahl.

118. An Overview of the MSFC Electrostatic Levitation Facility. Materials Science Conference, Huntsville, AL, June 8, 2000. J.R. Rogers, M.B. Robinson, R.W. Hyers, L. Savage, and T. Rathz.

119. Particle Engulfment and Pushing by Solidifying Interfaces. Materials Science Conference, Huntsville, AL, June 7, 2000. D.M. Stefanescu, S. Mukherjee, F.R. Juretzko, A.V. Catalina, S. Sen, and P.A. Curreri.

120. Particle Engulfment and Pushing Microgravity Experiments and Mathematical Modeling. First International Symposium on Microgravity Research and Application, Sorrento, Italy, September 11, 2000. D.M. Stefanescu, A.V. Catalina, F.R. Juretzko, S. Mukherjee, and S. Sen.

121. Particle Identification in the ACCESS Mission. American Physical Society Meeting, Long Beach, CA, April 30, 2000. J.H. Adams, K.C. Kim, E.S. Seo, and J.Z. Wang.

122. Phase Shift Interferometer and Growth Set Up to Study Step Pattern Formation During Growth from Solutions. Influence of the Oscillatory Solution Flow on Stability. NASA Microgravity Materials Conference, Huntsville, AL, June 8, 2000. A.A. Chernov, N.A. Booth, P.G. Vekilov, B.T. Murray, S.R. Coriell, and G.B. McFadden.

123. Physics for the Correction of a Calibrated Airborne Scanner, Visible to Thermal Bands. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. D.L. Rickman, S. Schiller, and J.C. Luvall.

PRESENTATIONS (Continued)

124. The Plasmasphere as Seen by the IMAGE EUV Instrument. The Geospace Environment Modeling (GEM) Workshop, Aspen, CO, June 19–23, 2000. D.L. Gallagher and B.R. Sandel.

125. A Portable Ground-Based Atmospheric Monitoring System (PGAMS) for the Calibration and Validation of Atmospheric Correction Algorithms Applied to Aircraft and Satellite Images. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. S. Schiller, J.C. Luvall, and D.L. Rickman.

126. Potential Pitfalls Related to Space-Based Lidar Remote Sensing of the Earth with an Emphasis on Wind Measurement. SPIE's Second International Asia-Pacific Symposium on Remote Sensing of the Atmosphere, Osaka, Japan, October 12, 2000. M.J. Kavaya, G.D. Spiers, and R.G. Frehlich.

127. Preparation and Characterization of Fluorescent Derivatives of Chicken Egg White Lysozyme. ICCBM–8, Sandestin, FL, May 15, 2000. J. Sumida, E. Forsythe, and M.L. Pusey.

128. The Preparation Conditions of Chromium Doped ZnSe and Their Effect on the Infrared Luminescence Properties. 12th American Conference on Crystal Growth and Epitaxy, Vail, CO, August 14, 2000. A. Burger, K. Chattopadhyay, J.O. Ndap, X. Ma, S.H. Morgan, C.I. Rablau, C.-H. Su, and S. Feth.

129. Propulsion from a Rotating EM Tether at Jupiter. 38th Aerospace Science Conference, Reno, NV, January 10–13, 2000. D.L. Gallagher and J. Moore.

130. Protein Crystal Growth Dynamics and Impurity Incorporation. LCM3B Symposium, Nancy, France, August 26, 2000. A.A. Chernov and B.R. Thomas.

131. Protein Crystals Grow Purer in Space: Physics of Phenomena. First International Symposium on Microgravity Research and Application in Physical Science and Biotechnology, Sorrento, Italy, September 10, 2000. A.A. Chernov.

132. Purification of Restriction Endonuclease EcoRII and Its Co-Crystallization with DNA-Substrate. ICCMB–8 Conference, Sandestin, FL, May 18, 2000. E.A. Karpova, L. Chen, E.J. Meehan, and M.L. Pusey.

133. Quench Module Insert (QMI) and the Diffusion Module Insert (DMI) Furnace Development. Space Technology and Application International Forum (STAIF–00), Albuquerque, NM, January 30–February 3, 2000. M. Crouch, B. Carswell, J. Farmer, F. Rose, and P. Tidwell.

134. The Question of Impurities in Macromolecule Crystal Quality Improvement in Microgravity. Spacebound 2000, Vancouver, Canada, May 15, 2000. R.A. Judge, E.H. Snell, M.L. Pusey, M.G. Sportiello, P. Todd, H. Bellamy, G. Borgstahl, M. Pokross, and J.M. Cassanto.

PRESENTATIONS (Continued)

135. Recent Enhancements of the Phased Array Mirror Extendible Large Aperture (PAMELA) Telescope Testbed at MSFC. Astronomical Telescopes and Instrumentation Conference, Munich, Germany, March 27–31, 2000. J. Rakoczy, E.E. Montgomery, and J. Lindner.

136. Reduced Gravity Z-Blan Optical Fiber. 38th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 10–13, 2000. D.S. Tucker, G.L. Workman, and G.A. Smith.

137. Reduction of Defects in Germanium-Silicon. Microgravity Materials Science Conference, Huntsville, AL, June 8, 2000. F.R. Szofran, K.W. Benz, S.D. Cobb, A. Croell, P. Dold, N. Kaiser, S. Motakef, M. Schweizer, M.P. Volz, L. Vujisic, and J.S. Walker.

138. Reduction of Effective Acceleration to Microgravity Levels. American Chemical Society Conference, San Francisco, CA, March 25–31, 2000. J.P. Downey.

139. Reduction of Sample Rotation in Electrostatic Levitation. TMS Conference, Nashville, TN, March 14, 2000. R.W. Hyers, W.L. Johnson, L. Savage, and J.R. Rogers.

140. Replication of Low Density Electroformed Normal Incidence Optics. Diffractive Optics and Micro-Optical/Optical Fabrication and Testing Topical Meeting, Quebec City, Canada. J.M. Ritter.

141. Results of the "Find It" Focus Area of the SERDP/Legacy Jointly Sponsored Cultural Resource Management Workshop. Partners in Environmental Technology (Environmental Challenging for Next Decade) Technical Workshop, Arlington, VA, November 28–30, 2000, p. 93. T.L. Sever.

142. SHIVA: Spaceflight Holography Investigation in a Virtual Apparatus. 10th International Conference on the Applications of Lasers in Fluid Mechanics, Lisbon, Portugal, July 8, 2000. J.D. Trolinger, R. Rangel, C. Coimbra, W.K. Witherow, and J.R. Rogers.

143. SHIVA: Spaceflight Holography Investigation in a Virtual Apparatus. AIAA Aerospace Conference, Reno, NV, January 12, 2000. J.D. Trolinger, R. Rangel, C. Coimbra, R.B. Lal, W.K. Witherow, and J.R. Rogers.

144. Shock Formation of Slow Magnetosonic Waves in Coronal Plumes. UVCS Team Meeting, Northeast Harbor, ME, September 26, 2000. M. Cuntz and S.T. Suess.

145. Size Exclusion Chromatography Studies of the Initial Self-Association Steps of Chicken Egg White Lysozyme Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. F. Ewing, D. Donovan, and M.L. Pusey.

146. Solidification Studies from the Electrostatic Levitation System at the Marshall Space Flight Center. TMS Conference, Nashville, TN, March 13, 2000. J.R. Rogers, R.W. Hyers, M.B. Robinson, L. Savage.

147. Specifications of a Plasmasphere Modeling Code for GGCM. The Geospace Environment Modeling (GEM) Workshop, Aspen, CO, June 19–23, 2000. D.L. Gallagher and D. Ober.

PRESENTATIONS (Continued)

148. Status of Cycle 23 Forecasts. Chapman Conference on Space Weather, Clearwater, FL, March 20–24, 2000. D.H. Hathaway.

149. Status on NGST Mirror Technology. A Discussion Session on NGST Mirror Technology. H2L2 Workshop ISAS (Institute of Space and Astronautical Science), Japan, April 17–18, 2000. D. Jacobson.

150. Stratospheric Sampling and In Situ Atmospheric Chemical Element Analysis During Meteor Showers: A Resource Study. Space 2000 Conference, Albuquerque, NM, February 28–March 2, 2000. D.A. Noever.

151. Structural Fluctuations and Thermophysical Properties of Molten II–VI Compounds. Materials Science Conference, Huntsville, AL, June 8, 2000. C.-H. Su, S. Feth, H. Mook, R. Scripa, S. Zhu, and S.L. Lehoczky.

152. Substrate Preparations in Epitaxial ZnO Film Growth. Twelfth American Conference on Crystal Growth and Epitaxy, Vail, CO, August 13–18, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, M.T. Harris, M.J. Callahan, and M.A. George.

153. SUMI: The Solar Ultraviolet Magnetograph Investigation. 31st Meeting of the Solar Physics Division (SPD) of the AAS, Stateline, NV, June 19–22, 2000. J.M. Davis, J.G. Porter, G.A. Gary, E.A. West, D.M. Rabin, R.J. Thomas, and J.M. Davila.

154. Sunspots and Giant-Cell Convection. 31st Meeting of the Solar Physics Division of the AAS, South Lake Tahoe, NV, June 18–22, 2000. R.L. Moore, D.H. Hathaway, and E.J. Reichmann.

155. Ten Years of Gamma-Ray Bursts Observations with BATSE. Gamma-Ray Bursts in the Afterglow Era Workshop, Rome, Italy, October 17-20, 2000. G.J. Fishman.

156. Thermal Remote Sensing and the Thermodynamics of Ecosystem Development. International Workshop "Advances in Energy Studies," Porto Venere, Italy, May 20–29, 2000. J.C. Luvall, J.J. Kay, and R.F. Fraser.

157. Thermophysical Property Measurement and Materials Research in the NASA/MSFC Electrostatic Levitator. Space Technology and Applications International Forum, Albuquerque, NM, February 12, 2001. J.R. Rogers, R.W. Hyers, T. Rathz, L. Savage, and M.B. Robinson.

158. Tornadic Supercells on May 3, 1999 Viewed from Space During an Overpass of the NASA TRMM Observatory. TRMM Science Meeting, Greenbelt, MD, October 29–November 2, 2000. S.J. Goodman, D. Buechler, K. Driscoll, D.W. Burgess, and M.A. Magsig.

159. TRMM/LIS Lightning: Going Beyond Climatological Composites. TRMM Science Meeting, Greenbelt, MD, October 29–November 2, 2000. D. J. Boccippio, S. Heckman, N.O. Renno, P.C.D. Milly.

PRESENTATIONS (Continued)

160. Turbulent Transition in Electromagnetically Levitated Droplets. Poster presentation at Materials Research Society 2000 Fall Meeting, Boston, MA, November 28, 2000. R.W. Hyers, G. Trapaga, B. Abedian, and D.M. Matson.

161. Use of Computed Tomography for Characterizing Materials Grown Terrestrially and in Microgravity. Materials Science Conference, Huntsville, AL, June 8, 2000. D.C. Gillies and H.P. Engel.

162. Use of Geostationary Satellite Data to Force Land Surface Schemes Within Atmospheric Mesoscale Models. Proceedings of Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling, and Simulation, Redstone Arsenal, AL, November 7–9, 2000. W.M. Lapenta, R.J. Suggs, R.T. McNider, G.J. Jedlovec, and S.R. Dembek.

163. The Use of Thermal Remote Sensing to Study Thermodynamics of Ecosystem Development. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. J.C. Luvall and D.L. Rickman.

164. Utilizing Controlled Vibrations in a Microgravity Environment to Understand and Promote Microstructural Homogeneity During Float-Zone Crystal Growth. Materials Science Conference, Huntsville, AL, June 7, 2000. A.V. Anilkumar, J. Bhowmick, and R.N. Grugel.

165. Visualizing the Impurity Depletion Zone Around Holoferritin Crystals Growing in Gel with Ferritin Dimers. ICCBM–8 Conference, Sandestin, FL, May 15, 2000. A.A. Chernov, B.R. Thomas, J.M. Garcia-Ruiz.

166. A Workshop on High Energy Astrophysics for Amateur Astronomers. High Energy Astrophysics Division of the American Astronomical Society, Honolulu, HI, November 6–10, 2000. G.J. Fishman and J.A. Mattei.

167. XTE J1906+09 Observations with RXTE. High Energy Astrophysics Division Meeting, Honolulu, HI, November 8, 2000. C.A. Wilson, M.H. Finger, P. Woods, and E. Gogus.

168. XTE J1946+274 = GRO J1944+26 Observations with RXTE and BATSE. Rossi 2000: Astrophysics with the Rossi X-Ray Timing Explorer, Greenbelt, MD, March 22–24, 2000. C.A. Wilson, M.H. Finger, and D.M. Scott.

APPENDIX—SCIENCE DIRECTORATE PREPRINTS

1. Comparison of Total Precipitable Water from Satellite and Model Reanalysis Fields. Preprints, 10th Conference On Satellite Meteorology and Oceanography, Long Beach, CA, pp. 418–421; January 9–14, 2000. G.J. Jedlovec, R.J. Suggs, and S. Haines.
2. Entrainment of Upper Level Dry Air Into Hurricane Earl. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, 11A.5, pp. 358–359; May 20–June 2, 2000. A.R. Guillory, G.J. Jedlovec, R.E. Hood, R.J. Atkinson, and F.J. Lafontaine.
3. Evaluation of Skin Temperatures Retrieved from GOES–8. Preprints, 10th Conference on Satellite Meteorology and Oceanography, Long Beach, CA, pp. 137–140; January 9–14, 2000. R.J. Suggs, G.J. Jedlovec, W.M. Lapenta, and S. Haines.
4. Hurricane Wind Field Measurements with Scanning Airborne Doppler Lidar During CAMEX–3. Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, pp. 354–355; May 29–June 2, 2000. J. Rothermel, D.R. Cutten, J.N. Howell, L.S. Darby, R.M. Hardesty, D.M. Tratt, and R.T. Menzies.
5. An Investigation of Precipitation Structures in Hurricane Bonnie. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, P1.35, p. 183; May 29–June 2, 2000. D.J. Cecil, E.J. Zipser, G.M. Heymsfield, R.E. Hood, and M.G. Bateman.
6. Passive Microwave Observations of Hurricanes Bonnie, Danielle, and Georges. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, 11A.1, pp. 596–597, May 29–June 2, 2000. R.E. Hood, A.R. Guillory, and F.J. Lafontaine.
7. Tropical Microwave Brightness Temperature Data from AMPR. American Meteorological Society, Preprints of 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, P1–21, pp. 594–595, May 29–June 2, 2000. F.J. Lafontaine, R.E. Hood, and A.R. Guillory.

SCIENCE DIRECTORATE AUTHOR INDEX

NASA REPORTS AND OTHER PUBLICATIONS

Technical Memorandums

Summers, F.G. 1

Technical Papers

Gerasimenko, L.M. 1
Hoover, R.B. 1
Leslie, F.W. 1
Ragozina, A.L. 1
Ramachandran, N. 1
Rozanov, A.Y. 1
Ushatinskaya, G.T. 1
Wilson, R.M. 1
Zhegallo, E.A. 1

Conference Publications

Kavaya, M.J. 1

OPEN LITERATURE

Refereed Journal Articles

Adams, M.L. 4
Adler, R.F. 10
Alexander, H.A. 9
Alshibli, K.A. 2, 8
Antiochos, S. 7
Antipin, M.Y. 6
Arvai, A. 2
Atkinson, P.M. 4, 5
Atkinson, R.J. 8
Bachmann, K.T. 7
Bailey, J.C. 3
Band, D.L. 2
Barkstrom, B. 10
Bassani, L. 5
Batiste, S.N. 2
Beck, J.G. 7
Bellamy, H. 5
Bellar, H. 2
Belloni, T. 9
Benson, R.F. 5, 8
Benz, K.W. 8
Bergstrom, J.W. 5
Bibl, K. 8
Blakeslee, R.J. 3, 7
Blanchard, G.T. 7
Blessing, R.H. 8
Boardsen, S.A. 8
Boccippio, D.J. 2, 3, 4, 6, 7, 8
Boeck, W.L. 7
Bogart, R.S. 7
Boggon, T.J. 9
Borgstahl, G. 2, 3, 5
Bottcher, M. 6
Bougeret, J.-L. 8
Brainerd, J.J. 7

Refereed Journal Articles (Continued)

Bridge, K.Y. 2, 3
Briggs, M.S. 2, 3, 9
Brittnacher, M.J. 2, 4, 7
Brunner, D. 6
Buechler, D.E. 2, 6
Bune, A.V. 4
Buonsanto, M.J. 7
Burch, J.L. 6, 7
Callahan, M.J. 7
Campbell-Wilson, D. 6
Cardelino, B.H. 6
Carlstrom, J.E. 3, 5, 6, 9
Carovillano, R.L. 7
Carpenter, D.L. 5, 8
Carpenter, P. 10
Cartwright, J.K. 6
Cash, W. 5
Catalina, A.V. 3, 4
Cattell, C.A. 7
Cha, S.S. 8
Chandler, M.O. 6, 7
Chang, C.L. 8
Chappell, C.R. 7
Chayen, N.E. 3
Chen, L.J. 2
Chen, W. 9
Cheney, G. 8
Christian, H.J. 2, 3, 5, 6, 7, 10
Chua, D. 4
Ciszak, E. 3, 4, 8
Clark, R.D. 6
Cohen, C. 8
Cole, S.T. 7
Collin, H.L. 6
Comfort, R.H. 4, 7, 8
Connaughton, V. 6
Cooray, A.K. 9
Costes, N.C. 2
Craven, P.D. 4, 6, 7, 8
Creel, B. 8
Croell, A. 8
Cronise, R.J. 6
Cui, W. 9
Cummins, K. 2
de la Force, C.J. 6
Dean, A.J. 5
Delcourt, D.C. 7
Dempsey, D.L. 6
Dieters, S.W. 9
Diffey, W.M. 7
Dold, P. 8
Donahue, M. 9
Dougani, H. 4
Driscoll, K.T. 2, 6, 7
Drobot, A.T. 8
Dudley, M. 2
Duncan, R.C. 7, 9
Elliott, H.A. 7, 8
Elsner, R.F. 3
Estes, Jr., M.G. 3
Evans, J.W. 9
Evrard, A.E. 6
Falconer, D.A. 2
Fender, R.P. 6
Fennelly, J.A. 7
Ferrier, B. 10
Feth, S. 2, 3, 5, 7
Fillingim, M.O. 2, 4
Finger, M.H. 3, 7, 9
Fishman, G.J. 3, 5
Fok, M.-C. 7
Fork, R.L. 4, 7
Frank, M.L. 2
Frazier, D.O. 6
Frey, H. 4
Frontera, F. 5
Fruchter, A.S. 4
Fung, S.F. 5, 8
Fuselier, S. 4
Gaensler, B.M. 6
Galama, T.J. 4, 5
Galkin, I.A. 8
Gallagher, D.L. 4, 5, 8
Galloway, D.K. 8
Gamble, L.J. 7
Garringtron, S.T. 6
Gary, G.A. 2

Refereed Journal Articles (Continued)

Geerts, B. 5
Geller, S.P. 4
George, M.A. 3, 7, 8, 9
Gerard, J.C. 4
Germany, G.A. 2, 4, 7
Ghigo, F.D. 6
Ghosh, K.K. 7
Gibson, W.M. 4
Giles, A.B. 8
Giles, B.L. 7
Gladstone, G.R. 4
Gogus, E. 9
Goldstein, B.E. 6
Gomez, P.L. 3
Goodman, S.J. 2, 3, 6, 7, 8, 10
Grasza, K. 9
Green, J.L. 8
Greenhill, J.G. 8
Grego, L. 3, 5, 6, 9
Groot, P.J. 4
Grugel, R.N. 9
Gubarev, M.V. 3, 4
Guillory, A.R. 5
Haarsma, D. 4
Habraken, S. 4
Haglin, D.J. 4
Hagyard, M.J. 4, 9
Haines, D.M. 8
Hakkila, J. 4
Hall, J.M. 5
Halverson, J.B. 5
Hamlin, T. 3
Han, S. 7
Harris, M.T. 7
Hathaway, D.H. 7
Heckman, S. 8
Heetderks, H. 4
Helliwell, J.R. 3, 9
Hester, J.J. 3
Heymsfield, G.M. 5
Hibiya, T. 8
Hjellming, R.M. 6
Holder, G.P. 3, 6, 9
Holt, J. 7
Holzapfel, W.L. 3, 5, 6, 9
Horwitz, J.L. 7, 8
Hou, A. 10
Howell, B.F. 3
Huang, X. 8
Huddleston, M. 6
Huffman, G. 10
Hughes, J.P. 3, 9
Hunstead, R.W. 6
Hurley, K. 9
Hwang, K.S. 8
Hyers, R.W. 5
Ignont, E. 6
Jamar, C. 4
Jarzembski, M.A. 9
Jedlovec, G.J. 8
Jeker, D.P. 6
Johnson, M. 7
Jones, W.K. 9
Joy, M.K. 3, 4, 5, 6, 9
Judge, R.A. 9
Kaper, L. 5
Karovska, M. 3
Keiling, A. 7
Keys, A.S. 4, 7
Khatri, G. 7
Khazanov, G.V. 3
Khine, Y.Y. 9
Kletzing, C.A. 7
Knupp, K. 2
Kolodziejczak, J.J. 3
Kommers, J.M. 5
Koshak, W.J. 3, 5, 7
Koshut, T.M. 3
Kouveliotou, C. 3, 4, 5, 7, 9
Kozu, T. 10
Krehbiel, P.R. 3
Krishnamurti, T.N. 10
Krivorutsky, E.N. 3
Kummerow, C.D. 10
Kuulkers, E. 9
Lampton, M. 4
Lankton, M.R. 2

Refereed Journal Articles (Continued)

Larson, D.E. 2
Laymon, C.A. 3
Leahy, D. 2
Lehoczky, S.L. 2, 3, 5, 6, 7, 8, 9, 10
Lennartson, W. 6
Lerner, J.A. 8
Leslie, F.W. 8, 9
Lewin, W.H.G. 3, 5, 9
Li, D. 5
Liemohn, M.W. 3
Lin, R.P. 2
Lovelace, J. 2
Lowndes, D.H. 9
Luvall, J.C. 3
Lyons, L.R. 7
Lysak, R.L. 7
Mach, D.M. 7
Magrum, L.A. 8
Malizia, A. 5
Mallozzi, R.S. 2, 4
Manning, R. 8
Marshall, H.L. 3
Masetti, N. 4, 5
Matyi, R. 2
Mazuruk, K. 10
McCarty, P. 7
McCaul, E.W. 2
McCollough, M.L. 5, 6
Meegan, C.A. 4, 5
Mejia, M.I. 5
Mende, S. 4
Meneghini, R. 10
Meyer-Vernet, N. 8
Mioduszewski, A.J. 6
Mohr, J.J. 9
Moncuquet, M. 8
Moore, C.E. 6
Moore, R.L. 2
Moore, T.E. 7, 8
Motakef, S. 6
Mozer, F.S. 7
Mukherjee, S. 3, 4
Murakami, T. 9
Murphree, S. 4
Myers, S.H. 8
Nagai, D. 6
Nakamura, S. 8
Nesterov, V.N. 6
Neugebauer, M. 6
Nichols, J.S. 3
Nielson, C. 2
Noever, D.A. 6
O'Dell, S.L. 3
Osterman, S. 5
Paciesas, W.S. 2
Padin, S. 6
Palazzi, E. 5
Palosz, W. 3, 7, 9
Pangborn, W. 8
Parhi, S. 2
Parks, G.K. 2, 4, 7
Partridge, B. 4
Patel, S.K. 3, 9
Pendleton, G.N. 2, 4, 5
Peters, P. 8
Peterson, W.K. 6, 7
Petitto, J.M. 7
Petry, D. 6
Pevtsov, A.A. 9
Pfister, L. 6
Pian, E. 5
Pickering, K.E. 6
Pokross, M. 2
Poletto, G. 6
Pollock, C.J. 7
Ponomarev, I.Y. 3, 4
Porter, J.G. 2
Preece, R.D. 2
Quattrochi, D.A. 3, 4, 5
Ramachandran, N. 6, 8, 10
Ramsey, B.D. 7
Raymond, J. 7
Reese, E.D. 3, 5, 6, 9
Reiff, P.H. 8
Reinisch, B.W. 5, 7, 8
Richards, A.M. 6
Richards, E.A. 4

Refereed Journal Articles (Continued)

Richards, P.G. 7
Rickman, D.L. 3
Rison, W. 3
Robinson, M.B. 5
Rochus, P. 4
Rogers, J.R. 5
Roiger, R.J. 4
Rol, E. 4, 5
Romoli, M. 6
Rothkin, K. 4
Rupen, M. 6
Russell, C.T. 7
Sadun, A.C. 7
Sales, G.S. 8
Sanghadasa, M. 6
Sault, R.J. 6
Savage, L. 5
Scali, J.L. 7
Schulz, N.S. 3
Scott, D.M. 2, 9
Scudder, J.D. 7
Sellers, C.C. 6
Sen, S. 4
Seybert, C.D. 9
Sha, Y.G. 10
Shipley, A. 5
Sibille, L. 6
Siddons, D.P. 9
Simnett, G.M. 6
Simpson, J. 10
Smith, D.A. 6
Smith, D.D. 6
Smith, G.D. 8
Smith, J.E. 4
Snell, E.H. 2, 3, 5, 9
Solakiewicz, R.J. 5
Soundararajaperumal, S. 7
Spann, Jr., J.F. 2, 4, 6, 7
Spencer, R.E. 6
Srivastava, V. 9
Stefanescu, D.M. 3, 4
Stephen, J.B. 5
Sterling, A.C. 8, 9
Stevenson, B.A. 8
Stevenson, D. 4
Stewart, M.F. 5
Stojanoff, V. 9
Stone, N.H. 3, 8
Storey, M.C. 8
Strietzel, C.J. 3
Strohmayer, T. 9
Sture, S. 2, 8
Su, C.-H. 2, 3, 5, 6, 7, 8, 9, 10
Su, Y.-J. 7, 8
Suess, S.T. 2, 6, 9
Sulkanen, M.E. 6
Swank, J.H. 9
Swanson, R.A. 2
Swartz, D.A. 3
Szofran, F.R. 6, 8, 9
Tanvir, N. 4
Taylor, W.W.L. 8
Temerin, M. 7
Tennant, A.F. 3
Thomas, R.J. 3
Thompson, C. 7, 9
Tian, L. 5
Timofeeva, T.V. 6
Trushkin, S. 6
van den Heuvel, E.P.J. 5
van der Klis, M. 9
van Paradijs, J. 3, 4, 5, 7, 9
Vaughn, J.R. 2
Vikram, C.S. 5
Volz, M.P. 10
Vreeswijk, P.M. 4, 5
Walker, J.S. 6, 9
Waltman, E.B. 6
Wang, J. 7
Wang, L.J. 7
Weisskopf, M.C. 3
West, E.A. 4
Wielicki, B. 10
Wijers, R.A. 4, 5
Wilber, M. 4
Williams, E. 4
Wilson, C.A. 2, 8

Refereed Journal Articles (Continued)

Wilson, R.B 2
Wilson, R.M. 3
Windhorst, R. 4
Witherow, W.K. 5
Woods, P. 3, 7, 9
Wright, K.H. 8
Wu, S.T. 8
Wuest, M. 6
Wygnant, J.R. 7
Yang, S. 10
Young, R.B. 2, 3
Zhang, S.N. 5, 9
Zhang, T.X. 8
Zhu, S. 7, 8, 9

Contributions to Books, Conference Proceedings, Etc.

Abdeldayem, H.A. 11
Akimov, V.V. 13
Alshibli, K.A. 11, 12, 14
Anikumar, A. 11
Austin, R.A. 12
Batiste, S.N. 12, 14
Bautz, M. 14
Bhowmick, J. 11
Blackwell, W.C. 13, 14
Bornstein, R. 15
Brainerd, J.J. 15
Bridge, K.Y. 11
Briggs, M.S. 15
Buechler, D. 15
Burgess, D.W. 15
Butt, Y.M. 14
Cameron, R. 14
Carlstrom, J.E. 12
Carter, J. 12
Cash, W. 12, 13
Catalina, A.V. 13
Chen, Y. 11
Ciszak, E. 13
Costes, N.C. 11, 14
Craig, L. 12
Cuntz, M. 12
Cutten, D.R. 14
Davila, J.M. 15
Davis, J.M. 14, 15
Dodson, K. 14
Driscoll, K. 15
Elsner, R.F. 12, 13, 14
Emerson, C.W. 11
Eng, R. 11
Engelhaupt, D. 12, 13
Estes, M.G. 15
Falconer, D.A. 12
Fedoseyev, A.I. 13
Finger, M.H. 12, 15
Fishman, G.J. 11
Frazier, D.O. 11
Gary, G.A. 14, 15
Goodman, S.J. 15
Grego, L. 12
Grugel, R.N. 11, 15
Gussenhoven, S. 14
Hagyard, M.J. 13
Haines, S.L. 11
Harman, B.A. 11
Hathaway, D.H. 12, 13
Holder, G.P. 12
Holzapfel, W.L. 12
Hong, Y. 13
Hoover, R.B. 13, 14
Huegele, V.B. 13
Hughes, J.P. 12
Hyers, R.W. 14
Jacobson, D.N. 12
Jarzembski, M.A. 14
Jedlovec, G.J. 11
Johnson, W.L. 14
Jones, W.D. 11, 13
Joy, M.K. 12, 13
Kansa, E.J. 13
Kegley, J. 11
Keidel, J. 11
Kim, S. 15
Kolodziejczak, J.J. 12, 13, 14
Kou, Q. 11
Kurt, V.G. 13
Lankton, M.R. 14
Lapenta, W.M. 11
Lin, Q. 15
Luvall, J.C. 15
Mallozzi, R.S. 15
Marin, C. 13
McCollough, M.L. 11, 15
Mehle, G. 14
Minow, J.I. 13, 14
Moore, R.L. 12
Mosier, G. 12
Nein, M. 12
Nickens, P. 14
O'Dell, S.L. 11, 12, 13, 14
Ostrogorsky, A.G. 13
Paciesas, W.S. 11

Contributions to Books, Conference Proceedings, Etc. (Continued)

Page, T., ... 12
Paley, M.S. 11
Patel, M. 13
Patel, S.K. 12
Pendleton, G.N. 15
Porter, J.G. 12, 14, 15
Preece, R.D. 15
Pusey, M.L. 12
Quattrochi, D.A. 11, 15
Rabin, D.M. 15
Ramachandran, N. 13
Ramsey, B.D. 11, 12, 13
Redding, D. 12
Reese, E.D. 12
Rogers, J.R. 14
Rothermel, J. 14
Rozanov, A.Y. 14
Ruch, E. 14
Russell, J.K. 13
Savage, L. 14
Scott, D.M. 12
Sen, S. 13
Sever, T.L. 14
Shipley, A. 12
Smith, W.S. 11
Spann, Jr., J.F. 14
Speegle, C.O. 12
Spencer, R.W. 12
Speybroeck, L.P. 11
Srivastava, V. 14
Stefanescu, D.M. 13
Sture, S. 11, 12, 14
Suggs, R.J. 11
Suggs, R.M. 13
Sumida, J. 12
Sun, X. 15
Sutherlin, S. 12
Swanson, R.A. 14
Swartz, D.A. 11, 13, 14
Tananbaum, H. 11
Tennant, A.F. 13, 14
Thomas, R.J. 15
Vaughn, J.R. 11
Vikram, C.S. 14
Virani, S.N. 13, 14
Volz, M.P. 13
Waltman, E.B. 11
Wang, T. 11
Warren, K. 13, 14
Weisskopf, M.C. 11, 12, 13
West, E.A. 14, 15
White, N.E. 13
Wilkerson, G. 12
Williamson, R. 14
Wilson, C.A. 11, 12, 15
Witherow, W.K. 14
Young, R.B. 11
Zhang, S.N. 11
Zissa, D.E. 12

Published Abstracts

Abbas, M.M. 17
Abiad, R. 17
Adrian, M.L. 18
Alexander, D.A. 18
Aschwanden, M.J. 18
Avanov, L.A. 17
Bates, J. 16
Becker, W. 18
Boccippio, D.J. 17
Borodkova, N.L. 17
Brittnacher, M.J. 16, 18
Burch, J.L. 17
Burley, R. 16
Campbell, R.D. 16
Carlson, C.W. 16, 17
Carpenter, D.L. 18
Cerard, J.-C. 17
Chandler, M.O. 16, 18
Chua, D. 16
Coffey, V.N. 16, 17, 18
Colton, M. 17
Comfort, R.H. 16, 17, 18
Craven, P.D. 16, 17, 18, 19
Crosson, W. 19
Davila, J.M. 19
Davis, J.M. 19
Deblonde, G. 17
Dembek, S. 19
Ellingson, B. 16
Elliott, H.A. 16, 18
Elsner, R.F. 18
Engelen, R. 16
Estes, Jr., M.G., ... 18
Falconer, Jr., D.A. 17
Ferraro, R. 17
Fitzjarrald, D. 16
Frey, H.U. 17, 18
Gallagher, D.L. 16, 17, 18
Garand, L. 16
Gary, G.A. 17, 18, 19
Geller, S.P. 17, 18
Gerard, J.-C. 18
Germany, G.A. 16, 18, 19
Giles, B.L. 16
Gladstone, G.R. 18
Gladstone, R. 17
Green, J.L. 16
Gurgiolo, G. 16
Habraken, S. 17, 18
Hamilton, D.C. 18
Hathaway, D.H. 17
Heetderks, H. 17
Heymsfield, G.M. 16, 17
Ho, G.C. 18
Hood, R.E. 16, 17
Horwitz, J.L. 16, 17, 19
Howell, L.W. 16
Hsieh, K.C. 18
Hubert, B. 17
Hurlburt, N. 18
Immel, T.J. 17, 18
Jackson, D. 16
Jamar, C. 17, 18
Jedlovec, G.J. 16, 17
Kahn, S. 18
Kleespies, T. 16
Koczor, R.J. 18
Koenig, M. 16
Kolodziejczak, J.J. 18
Koshak, W.J. 17
Krider, E.P. 17
Lampton, M. 17, 18
Lapenta, W.M. 19
Laymon, C.A. 18
Lee, J. 16
Lee, T. 17
Liao, J.-H. 16
Magi, B.I. 18
Manning, W. 17
Marji, B.E. 16
Marshall, S. 17
Mazuruk, K. 16
McCaul, E.W. 16
Mende, S.B. 17, 18
Moore, R.L. 17
Moore, T.E. 16, 17, 18, 19
Murray, S. 18
O'Dell, S. 18
Oglesby, R.O. 17

Published Abstracts (Continued)

Paerels, F. 18
Park, S.-C. 19
Parks, G.K. 16, 17, 18
Peria, B. 16
Phillips, T. 18
Pollock, C.J. 18
Porter, J.G. 17, 19
Quattrochi, D.A. 18
Rabin, D.M. 19
Renotte, E. 17, 18
Rich, F.J. 17, 19
Richards, P.G. 16, 18
Roads, J.O. 17
Robertson, F.R. 16, 17, 19
Rochus, P. 17, 18
Sandel, B.R. 18
Saunders, R. 16
Schmetz, J. 16
Shibazaki, N. 18
Siegmund, O.H.W. 17
Skalsky, A.A. 17
Skofronick-Jackson, G.M. 16, 17
Smirnov, V.N. 17
Smith, E.A. 19
Soden, B. 16
Sohn, B.-J. 19
Spann, Jr., J.F. 16, 17, 18
Spencer, R.W. 16
Stevenson, B.A. 16, 17, 19
Stock, J.M. 17
Su, Y.-J. 17
Swartz, D.A. 18
Swift, W.R. 18
Tennant, A.F. 18
Thomas, R.J. 19
Tjemkes, S. 16
Trumper, J. 18
Tu, J.N. 16
Vaisberg, O.L. 17
Venturini, C.C. 17
Volz, M.P. 16
Waite, Jr., J.H. 17
Wang, J.R. 16, 17
Watts, J. 16
Weisskopf, M.C. 18
West, E.A. 19
Wu, X.-Y. 16, 17
Zeng, W. 17, 19
Zhang, S.N. 18

PRESENTATIONS

Abbas, M.M. 22, 26
Abdeldayem, H.A. 20
Abedian, B. 33
Adams, J.H. 21, 28, 29
Adrian, M.L. 25
Alshibli, K.A. 20, 21
Amzajerdian, F. 27
Anilkumar, A.V. 33
Atkinson, R.J. 22, 23
Banks, C.E. 20
Barnes, C.L. 21
Bellamy, H. 26, 30
Benz, K.W. 27, 31
Bhowmick, J. 33
Bilitza, D. 26
Blackwell, T. 27
Boccippio, D.J. 21, 32
Boeck, W.L. 21
Boggon, T.J. 24, 25
Booth, N.A. 29
Borgstahl, G. 26, 30
Braswell, W.D. 26
Brebrick, R.F. 21
Bridge, K.Y. 22
Buechler, D. 27, 32
Bune, A.V. 23, 27
Burden, J. 20
Burger, A. 21, 30
Burgess, D.W. 27, 32
Burke, M. 22, 23
Callahan, M.J. 25, 32
Carswell, B. 25, 30
Cassanto, J.M. 26, 30
Catalina, A.V. 29
Catanzaro, B. 20
Chandler, M.O. 20
Chattopadhyay, K. 30
Chavers, G. 29
Chayen, N. 24
Chen, L. 30
Chernov, A.A. 22, 29, 30, 33
Chilingarian, A. 28
Christian, H.J. 29
Cobb, S.D. 20, 22, 31
Coimbra, C. 31
Comfort, R.H. 20, 22
Coriell, S.R. 29
Costes, N.C. 21
Cramer, J. 21
Craven, P.D. 20, 26, 27
Croell, A. 27, 31
Cronise, R. 25
Crouch, M. 25, 30
Cummins, K. 21
Cuntz, M. 31
Curreri, P.A. 29
Cutten, D.R. 25
Darby, L.S. 25
Davila, J.M. 32
Davis, J.M. 32
Dembek, S.R. 33
Dold, P. 27, 31
Donovan, D. 31
Dooling, D. 26
Downey, J.P. 20, 28, 31
Driscoll, K. 27, 32
Drury, L. 28
Dudley, M. 21
Elliott, H.A. 20
Eng, R. 21, 28
Engel, H.P. 33
Engelhaupt, D. 22
Estes, Jr., M.G. 25
Ethridge, E.C. 27
Evans, J.W. 23, 25
Ewing, F. 31
Farmer, J. 25, 30
Fedoseyev, A.I. 20, 23, 27, 28
Feth, S. 30, 32
Finger, M.H. 33
Fishman, G.J. 21, 28, 32, 33
Fiske, M.R. 26
Fitzjarrald, D.E. 26
Forsythe, E. 21, 30
Fraser, R.F. 32
Frazier, D.O. 20, 24
Frehlich, R.G. 30

PRESENTATIONS (Continued)

Gallagher, D.L. 25, 26, 30, 31
Garcia-Ruiz, J.M. 22, 33
Gary, G.A. 32
Geary, J.M. 21, 29
George, M.A. 25, 32
Germany, G.A. 26, 37
Gibson, U.J. 23
Gillies, D.C. 21, 22, 24, 27, 28, 33
Gogus, E. 33
Goodman, S.J. 21, 27, 32
Grant, J. 23
Green, J.L. 25
Grugel, R.N. 20, 23, 27, 28, 33
Guillory, A.R. 22, 23
Hachindzhagyan, G. 28
Hadaway, J.B. 29
Halas, N. 25
Hardesty, R.M. 25
Harris, M.T. 25, 32
Hathaway, D.H. 32
Heckman, S. 32
Helliwell, J.R. 24, 25
Ho, F.D. 26
Hood, R.E. 22, 23
Horrell, E.E. 23
Horwitz, J.L. 26, 27
Howell, J.N. 25
Howell, L.W. 23, 25
Hudson, H. 29
Hunt, A.J. 23, 25
Hyers, R.W. 23, 29, 31, 32, 33
Ignont, E. 27
Jacobson, D. 28, 32
Jedlovec, G.J. 22, 23, 33
Johnson, W.L. 31
Jones, W.D. 22, 27
Jones, W.K. 23
Jones, Jr.,W.K. 25
Joy, M.K. 25
Judge, R.A. 22, 23, 24, 25, 26, 30
Juretzko, F.R. 29
Kaiser, N. 31
Kaiser, T. 27
Karpova, E.A. 26, 30
Karr, L.J. 29
Kavaya, M.J. 21, 30
Kay, J.J. 32
Kegley, J. 21, 28
Keidel, J. 21, 28, 29
Kesmodel, R. 20
Kester, T.J. 27
Kim, K.C. 29
Konnert, J.H. 27
Kou, Y. 23
Kundrot, C.E. 21, 28
Kutter, S. 20
LaFontaine, F.J. 22, 23
Lal, R.B. 31
Lapenta, W.M. 33
Lee, J. 21, 23, 25
Lehoczky, S.L. 20, 24, 25, 27, 32
Lemen, J.R. 29
Leslie, F.W. 23, 25
Li, H. 27
Lichtensteiger, M. 27
Lightsey, P. 20
Lindner, J. 31
Liu, F. 21
Luvall, J.C. 20, 25, 29, 30, 32, 33
Ma, X. 30
MacLeod, T.C. 26
Magsig, M.A. 27, 32
Malone, C. 29
Martin, C. 23
Matson, D.M. 33
Mattei, J.A. 33
Matyi, R. 21
Mazuruk, K. 21
McCarty, P. 25
McCaul, E.W. 26
McFadden, G.B. 29
McNider, R.T. 33
Meegan, C.A. 24, 26
Meehan, E.J. 30
Mehle, G. 20
Menzies, R.T. 25
Mercier, R. 20

PRESENTATIONS (Continued)

Milly, P.C.D. 32
Montgomery, E.E. 31
Mook, H. 32
Moore, J. 30
Moore, R.L. 28, 29, 32
Moore, T.E. 20, 26, 27
Morgan, S.H. 30
Motakef, S. 31
Mukherjee, S. 29
Muller, C. 20
Murray, B.T. 29
Nadarajah, A. 27
Ndap, J.O. 30
Ng, J. 23
Nicoara, I. 23
Noever, D.A. 24, 32
Ober, D. 25, 31
O'Dell, S.L. 20, 22, 27
Olczak, A. 25
Oldenberg, S. 25
Ostrogorsky, A.G. 23
Papenburg, U. 20
Parhi, S. 22, 24
Penn, B.G. 20
Peters, B. 29
Pfrang, W. 20
Pokross, M. 26, 30
Poletto, G. 23, 24
Porter, J.G. 32
Prasad, V. 24
Pusey, M.L. 21, 22, 23, 24, 26, 27, 30, 31
Quattrochi, D.A. 25
Rabin, D.M. 32
Rablau, C.I. 30
Rakoczy, J. 31
Ramachandran, N. 21, 28
Ramsey, B.D. 22
Rangel, R. 31
Rathz, T. 29, 32
Reardon, P. 29
Reichmann, E.J. 32
Reily, J.C. 28
Renno, N.O. 32
Rich, F.J. 26, 27
Rickman, D.L. 20, 29, 30, 33
Ritter, J.M. 31
Roads, J. 26
Robertson, F.R. 26
Robinson, M.B. 23, 29, 31, 32
Rogers, J.R. 23, 29, 31, 32
Rose, F. 25, 30
Rothermel, J. 25
Ruch, E. 20
Sandel, B.R. 25, 30
Savage, L. 23, 29, 31, 32
Schaefer, D.A. 22, 26
Schiller, S. 20, 29, 30
Schlagheck, R.A. 27, 28
Schweizer, M. 27, 31
Scott, D.M. 33
Scripa, R. 32
Segre, P.N. 21, 24
Seilonen, M. 20
Sen, S. 29
Seo, E.S. 29
Sever, T.L. 31
Seybert, C.D. 23, 25
Sharma, A. 20, 23
Shih, H. 21
Sibille, L. 23, 25, 27
Siddons, D.P. 25
Siler, R. 28
Smith, D.D. 23, 25, 27
Smith, E.A. 24
Smith, G.A. 23, 31
Smith, S. 28
Smith, W.S. 22, 29
Snell, E.H. 24, 25, 26, 30
Snow, L.A. 23, 25, 27
Spann, Jr., J.F. 22, 26
Spencer, R.W. 24
Spiers, G.D. 30
Sportiello, M.G. 26, 30
Srinivas, R. 26
Stahl, H.P. 28, 29
Stefanescu, D.M. 29

PRESENTATIONS (Continued)

Sterling, A.C. 28, 29
Stevenson, B.A. 26, 27
Stojanof, V. 25
Sture, S. 21
Su, C.-H. 20, 21, 24, 25, 30, 32
Su, Y.J. 26
Suess, S.T. 22, 23, 24, 31
Suggs, R.J. 33
Sumida, J. 24, 30
Szofran, F.R. 22, 24, 31
Tananbaum, H. 20
Tanton, G. 20
Thomas, B.R. 22, 30, 33
Thomas, R.J. 32
Tidwell, P. 25, 30
Todd, P. 26, 30
Trach, B. 27, 28
Trapaga, G. 33
Tratt, D.M. 25
Triese, D. 26
Trolinger, J.D. 31
Tucker, D.S. 23, 27, 31
Umbanhower, P. 21
Van Speybroeck, L. 20
Vekilov, P.G. 29
Venturini, C.C. 22, 26
Volz, M.P. 21, 31
Vujisic, L. 31
Walker, J.S. 31
Wang, J.Z. 29
Wang, Y. 23
Watts, J. 23, 25
Weisskopf, M.C. 20, 28
Weitz, D.A. 21, 24
West, E.A. 32
Wilson, C.A. 33
Witherow, W.K. 31
Wolfe, D.B. 25
Woods, P. 33
Workman, G.L. 23, 31
Wright, E. 28
Wu, X.-Y. 26, 27
Yelleswarapu, C. 20
Young, R.B. 22
Zeng, W. 26, 27
Zhu, S. 24, 25, 32

APPENDIX—SCIENCE DIRECTORATE PREPRINTS

Atkinson, R.J. 34
Bateman, M.G. 34
Cecil, D.J. 34
Cutten, D.R. 34
Darby, L.S. 34
Guillory, A.R. 34
Haines, S. 34
Hardesty, R.M. 34
Heymsfield, G.M. 34
Hood, R.E. 34
Howell, J.N. 34
Jedlovec, G.J. 34
Lafontaine, F.J. 34
Lapenta, W.M. 34
Menzies, R.T. 34
Rothermel, J. 34
Suggs, R.J. 34
Tratt, D.M. 34
Zipser, E.J. 34

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	3. REPORT TYPE AND DATES COVERED
	July 2001	Technical Memorandum

4. TITLE AND SUBTITLE

Science Directorate Publications and Presentations
January 1–December 31, 2000

5. FUNDING NUMBERS

6. AUTHORS

Compiled by F.G. Summers

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–1023

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—2001–211143

11. SUPPLEMENTARY NOTES

Prepared by Science Directorate, 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 Science Directorate during the period January 1–December 31, 2000. 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). 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 Dr. A.F. Whitaker (SD01; (256) 544–2481) or to one of the authors.

14. SUBJECT TERMS

Scientific and Technical Publications

15. NUMBER OF PAGES

56

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited