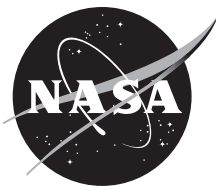


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TECHNICAL MEMORANDUM

SCIENCE AND TECHNOLOGY DIRECTORATE PUBLICATIONS AND PRESENTATIONS, JANUARY 1–DECEMBER 31, 2005

NASA REPORTS AND OTHER PUBLICATIONS

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1. Science and Technology Directorate Publications and Presentations, *NASA/TM–2005–214219*, December 2005. Compiled by F.G. Summers.

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2. 3-D Structure of Sunspots Using Imaging Spectroscopy, Astronomical Society of the Pacific Workshop, at National Solar Observatory, Sunspot, NM, July 18–22, 2005. K.S. Balasubramaniam, G.A. Gary, and K. Reardon.
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5. Aircraft Based Remotely Sensed Albedo and Surface Temperatures for Three U.S. Cities, RCI Foundation Presents: Cool Roofing, Cutting Through the Glare, Atlanta, GA, May 11–13, 2005. J.C. Luvall, D.L. Rickman, D.A. Quattrochi, and M.G. Estes.
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7. Analysis of Bare-Tether Systems as a Thruster for MXER Studies 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005. G.V. Khazanov, E.N. Krivorutsky, and K. Sorensen.
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9. Analysis of Upper Air, Ground and Remote Sensing Data for the ATLAS Field Campaign in San Juan, Puerto Rico, 85th American Meteorological Society Annual Meeting, January 9–13, 2005. J.E. Gonzalez, J.C. Luvall, D.L. Rickman, D.E. Comarazamy, and A.J. Picon.
10. Are We There Yet? Developing In Situ Fabrication and Repair (ISFR) Technologies to Explore and Live on the Moon and Mars, AIAA Conference, Orlando, FL, January 30–February 2, 2005. J.A. Bassler, M.P. Bodiford, M.R. Fiske, and J.D. Strong.
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14. Calculated X-Ray Intensities Using Monte Carlo Algorithms: A Comparison to Experimental EPMA Data, 2005 Microscopy and Microanalysis Meeting, Honolulu, HI, July 31–August 4, 2005. P.K. Carpenter.
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25. Development of Ionic Liquid Monopropellants for In-Space Propulsion, 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Tucson, AZ, July 10–13, 2005. J.A. Blevins, G.W. Drake, and R. Osborne.
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28. Diagnostics for In-Space Testing of Electric Thrusters in the International Space Station, 29th International Electric Propulsion Conference, Princeton, NJ, October 31–November 4, 2005. D.G. Chavers.
29. Distributed Sensing of Composite Over-Wrapped Pressure Vessel Using Fiber-Bragg Gratings. National Space and Missile Materials Symposium: “Bet on Materials: A Sure Win,” Summerlin, NV, June 25–July 1, 2005. J. Grant.
30. Don Clayton and Nuclear Gamma-Ray Astronomy, Astronomy With Radioactivities V, Clemson University, Clemson, SC, September 5–9, 2005. G.J. Fishman.
31. Effects of Nuclear Interactions in Space Radiation Transport. 1st Space Exploration Conference, Continuing the Voyage of Discover, Orlando, FL, January 30–February 1, 2005. Z.-W. Lin and A.F. Barghouty.
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37. Environmental Public Health Tracking: Health and Environment Linked for Information Exchange—Atlanta (HELIX-Atlanta): A Cooperative Program Between CDC and NASA for Development of an Environmental Public Health Tracking Network in the Atlanta Metropolitan Area, NASA Ecological Modeling Workshop, Monterey, CA, March 29–April 1, 2005. D.A. Quattrochi and A.S. Niskar.
38. Exploring the Relationship Between Lightning, Liquid and Frozen Water Phases Using TRMM Precipitation Radar and Lightning Imaging Sensor Data, 32nd Radar Meteorology Conference, American Meteorological Society, Albuquerque, NM, October 23–29, 2005. W.A. Petersen, H.J. Christian, and S.A. Rutledge.
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40. First Terrestrial Soft X-Ray Auroral Observation by the Chandra X-Ray Observatory, 2004 Workshop, Challenges to Modeling the Sun-Earth System, Huntsville, AL, October 18–22, 2004. A. Bhardwaj, G.R. Gladstone, R.F. Elsner, N. Ostgaard, J.H. Waite, Jr., T.E. Cravens, S.-W. Chang, T. Majeed, and A.E. Metzger.
41. Fluorescent Approaches to High Throughput Crystallography, American Crystallographic Association (ACA) Conference, Orlando, FL, May 27–June 2, 2005. M.L. Pusey, E.L. Forsythe, and A. Achari.
42. Fluorescent Approaches to High Throughput Crystallography, American Institute of Chemical Engineers (AIChE), Cincinnati, OH, October 30–November 4, 2005. M.L. Pusey, E.L. Forsythe, and A. Achari.
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44. Fusion Ignition Rocket Engine With Ballistic Ablative Lithium, NASA/JPL/MSFC 16th Annual Event Propulsion Workshop at University of Alabama in Huntsville, Huntsville, AL, April 7–8, 2005. A. Martin, R. Eskridge, and P.J. Fimognari III.
45. Galium Electromagnetic (GEM) Thruster Concept and Design, 53rd JPM/2nd LPS/SP Joint Meeting, Monterey, CA, December 5–8, 2005. K.A. Polzin and T.E. Markusic.
46. Galium Electromagnetic (GEM) Thruster Concept and Design, Joint Propulsion Conference, Tucson, AZ, July 11–13, 2005. J.P. Foote and R.J. Litchford.

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48. General Relativistic MHD Simulation of Relativistic Jets From a Rotating Black Hole Magnetosphere, Relativistic Astrophysics and Cosmology—Einstein’s Legacy, Munich, Germany, November 7–11, 2005. Y. Mizuno, K. Shibata, S. Koide, and K.-I. Nishikawa.
49. General Relativistic MHD Simulations of Jet Formation, Gamma Ray Burst in the Swift Era, Washington, DC, November 29–December 2, 2005. Y. Mizuno, K.-I. Nishikawa, P.E. Hardee, S. Koise, and G.J. Fishman.
50. General Relativistic MHD Simulations of Jet Production, Relativistic Jets: The Common Physics of AGN, Microquasars and Gamma-Ray Bursts, University of Michigan, Ann Arbor, MI, December 14–17, 2005. Y. Mizuno, K.-I. Nishikawa, P.E. Hardee, S. Koise, K.K. Ghosh, and G.J. Fishman.
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52. Global Lightning Activity, Cosmosphere and Space Center, Wichita, KA, April 14–15, 2005. H.J. Christian, Jr.
53. Global Lightning Activity, The Mexican Meteorological Conference, Cancun, Mexico, February 28–March 4, 2005. H.J. Christian, Jr.
54. Global Lightning Observations, 7th Plinius Conference on Mediterranean Storms, Rithymnon, Crete, October 1–9, 2005. H.J. Christian.
55. GRBs—The Prompt Emission, 3rd American Association of Variable Star Observers (AAVSO) High Energy Astrophysics Workshop, Las Cruces, NM, March 21, 2005. G.J. Fishman.
56. Growth From Solutions: Kink Dynamics, Stoichiometry, Face Kinetics and Stability in Turbulent Flow, American Conference on Crystal Growth and Epitaxy-16, Big Sky, MT, July 10–15, 2005. A.A. Chernov, J.J. De Yoreo, L.N. Rashkovich, and P.G. Vekilov.
57. Growth of Periodic Nano-Layers of Nano-Crystals of Au, Ag, Cu By Ion Beam, International Conference on Surface Modification of Materials by Ion Beams, Kusadasi, Turkey, September 4–9, 2005. C.C. Smith, Z. Zheng, C.I. Muntele, I.C. Muntele, and D. Ila.

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59. In Situ Resource Utilization Technology Research and Facilities Supporting the NASA's Human Systems Research and Technology Life Support Program, Northern Centre for Advanced Technology, Inc., Planetary and Terrestrial Mining Sciences Symposium, Sudbury, Canada, June 5–8, 2005. R.A. Schlagheck, L. Sibille, K. Sacksteder, and C. Owens.
60. Initiation of Coronal Mass Ejections: Implications for Forecasting Solar Energetic Particle Storms, Solar and Space Physics and the Vision for Space Exploration, Charlottesville, VA, October 15–20, 2005. R.L. Moore, A.C. Sterling, D.A. Falconer, and J.M. Davis.
61. Inorganic and Protein Crystal Assembly in Solutions, Invited talk at Lawrence Livermore National Laboratory, Livermore, CA, March 9–10, 2005. A.A. Chernov.
62. In Situ Resource-Based Lunar and Martian Habitat Structures Development at NASA/MSFC, AIAA Conference, Orlando, FL, January 30–February 2, 2005. M.P. Bodiford, K.H. Burks, M.R. Fiske, J.D. Strong, and W. McGregor.
63. In Situ Resources in Space, National Space & Missile Materials Symposium, Summerlin, NV, June 27–July 1, 2005. P.A. Curreri.
64. Interannual Variability in Surface LW Fluxes Over the Tropical Oceans as Seen in ISCCP–FD and GEWEX SRB Data Sheets, 5th International Scientific Conference on the Global Energy and Water Cycle, Costa Mesa, CA, June 18–24, 2005. F.R. Robertson and H.-I. Lu.
65. Interannual Variability of Tropical Rainfall as Seen From TRMM, 5th International Scientific Conference on the Global Energy and Water Cycle, Costa Mesa, CA, June 18–24, 2005. F.R. Robertson.
66. Introduction to the Sub-Pixel Spatial Resolution Interferometry Process, Opti Fab Conference, Rochester, NY, May 2–5, 2005. J.T. Mooney and H.P. Stahl.
67. James Webb Space Telescope—The “First Light Machine,” Beijing Institute of Technology, Beijing, China, August 29, 2005. H.P. Stahl.
68. James Webb Space Telescope—The “First Light Machine,” William Jewell College, Liberty, MO, December 5, 2005. H.P. Stahl.
69. Jupiter's Galilean Satellites, Asia Oceania Geosciences Society's 2nd Meeting, Singapore, Singapore, June 20–24, 2005. M.A. McGrath.

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70. Laboratory Investigation of Space and Planetary Dust Grains, Institute of Planetary Science at the University of Muenster, Muenster, Germany, June 6–June 12, 2005. J.F. Spann, Jr.
71. Laboratory Investigations of the Physical and Optical Properties of the Analogs of Individual Cosmic Dust Grains, The Gordon Research Conference on Origins of Solar Systems, New London, CT, June 26–July 1, 2005. M.M. Abbas, D. Tankosic, P.D. Craven, J.F. Spann, Jr., A. LeClair, and E.A. West.
72. Large Field of View KD*P Modulator for Solar Polarization Measurements, 4th SOLAR POLARIZATION WORKSHOP (SPW 4), Boulder, CO, September 19–23, 2005. E.A. West.
73. Lightning Mapping and the Nowcasting of Severe Storms, 2005 European Geophysical Union Meeting, Vienna, Austria, April 24–29, 2005. S.J. Goodman, C. Darden, and J. Burks.
74. Liquid Between Macromolecules in Protein Crystals—Static vs. Dynamics, 5th International Surface Science Workshop, Sofia, Bulgaria, February 19–17, 2005. A.A. Chernov.
75. Liquid Metal Flow Sensors for Electric Propulsion, 53rd JANNAF Propulsion Meeting/2nd Liquid Propulsion Subcommittee/1st Spacecraft Propulsion Meeting, Monterey, CA, December 5–8, 2005. T.E. Markusic, K.A. Polzin, B.J. Stanojev, C. Dodson, and A. Dehoyos.
76. Lunar and Martian Sub-Surface Habitat Structure Technology Development and Application, AIAA Conference, Orlando, FL, January 30–February 2, 2005. P.J. Boston and J.D. Strong.
77. Magnetars, 3rd American Association of Variable Star Observers (AAVSO) High Energy Astrophysics Workshop, Las Cruces, NM, March 21, 2005. C. Kouveliotou.
78. Magnetars, A Life With Stars Conference, Amsterdam, The Netherlands, August 21–26, 2005. C. Kouveliotou.
79. Materials Requirements for Advanced Propulsion Systems, 43rd AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 10–13, 2005. A.F. Whitaker, M.B. Cook, and R.G. Clinton, Jr.
80. Maunder’s Butterfly Diagram in the 21st Century, 2nd Asia Oceania Geosciences Society Annual Meeting 2005, Singapore, Singapore, June 20–24, 2005. D.H. Hathaway.
81. Measurements of Photoelectric Yield and Physical Properties of Individual Lunar Dust Grains, Dust in Planetary Systems, Kauai, HI, September 26–30, 2005. M.M. Abbas, D. Tankosic, P.D. Craven, J.F. Spann, Jr., A. LeClair, E.A. West, L. Taylor, and R.B. Hoover.
82. Microinstabilities in the Gasdynamic Mirror Propulsion System, 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Tucson, AZ, July 10–13, 2005. W. Emrich.

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83. Mission Analysis for LEO Microwave Power-Beaming Station in Orbital Launch of Microwave Lightcraft, 4th International Symposium on Beamed Energy Propulsion (ISBEP4), Nara, Japan, November 15–18, 2005. T. Dickerson and L.N. Myrabo.
84. A Molten Salt Am242M Production Reactor for Space Applications, 2005 ANS Annual Meeting, San Diego, CA, June 5–9, 2005. W. Emrich.
85. Mossbauer and EPR Spectra for Glasses and Glass Ceramics Prepared from Simulated Compositions of Lunar and Martian Soils, 3rd International Symposium on Non-Crystalline Solids and the 7th Brazilian Symposium on Glass and Related Materials, Sao Paulo, Brazil, November 13–16, 2005. C.S. Ray, S.T. Reis, F.F. Sene, J.B. Yang, W.M. Pontuschka, J.M. Giehl, C.W. Kim, and S. Sen.
86. NASA Celebrates The World Year of Physics, American Association of Physics Teachers, Albuquerque, NM, January 8–12, 2005. F.R. Szofran and T.A. Schneider.
87. NASA Celebrates the World Year of Physics. American Association of Physics Teachers, Albuquerque, NM, January 8–12, 2005. M.L. Adams.
88. The NASA Short-Term Prediction and Research Transition (SPoRT) Center—A Research to Operations Test Bed, Second NPOESS Training Workshop, Boulder, CO, May 23–25, 2005. G.J. Jedlovec.
89. NASA's Challenges in Optics for Future Space-Based Science Missions, SPIE 20th Congress of the International Commission for Optics, Challenging Optics in Science and Technology, Changchun, China, August 21–26, 2005. H.P. Stahl.
90. A Neutral Network “Virtual Radar” From Passive Microwave and Lightning Observations, Precipitation Measurements Mission Science Team Meeting, Monterey, CA, December 12–15, 2005. D.J. Boccippio, W.A. Petersen, and D.J. Cecil.
91. New Alternative Fuels for Bipropellant Applications, 53rd JPM/2nd LPS/SP Joint Meeting, Monterey, CA, December 5–8, 2005. G.W. Drake, J.A. Sheehy, and T. Hawkins.
92. New Energetic Materials for Chemical Propulsion, 53rd JPM/2nd LPS/SP Joint Meeting, Monterey, CA, December 5–8, 2005. G.W. Drake and J.B. Neidert.
93. New Evidence for Equatorially Trapped Thermal Plasma During Early Post-Storm Recovery, Geospace Environment Modeling (GEM) Workshop, Santa Fe, NM, June 27–29, 2005. D.L. Gallagher, and J.L. Green.
94. New Fiber Reinforced Waterless Concrete for Extraterrestrial Structural Applications, 12th International Conference on Composites/Nano Engineering (ICCE-12), Tenerife, Canary Islands, Spain, August 1–6, 2005. H. Toutanji, D.S. Tucker, and E.C. Ethridge.

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95. A New Variety of CMEs: Streamer Puffs from Compact Ejective Flares, SHINE 2005 Workshop, Kailua-Kona, HI, July 10–15, 2005. A.C. Sterling, A. Bemporad, R.L. Moore, and G. Poletto.
96. Non-Contact Creep Resistance Measurement for Ultra-High Temperature Materials, 2005 National Space and Missile Materials Symposium, Summerlin, NV, June 27–July 1, 2005. R.W. Hyers, J. Lee, R.C. Bradshaw, J.R. Rogers, T.J. Rathz, J.J. Wall, H. Choo, and P.K. Liaw.
97. Non-Contact Creep Resistance Measurement for Ultra-High Temperature Materials, Materials Science and Technology 2005, Pittsburgh, PA, September 25–28, 2005. J. Lee, C. Bradshaw, J.R. Rogers, T.J. Rathz, J.J. Wall, H. Choo, P.K. Liaw, and R.W. Hyers.
98. Nondestructive Evaluation of Advanced Materials With X-Ray Phase Mapping, 2005 National Space and Missile Materials Symposium (NSMMS), Las Vegas, NV, June 27–July 1, 2005. Z. Hu.
99. Novel Applications of Magnetic Fields for Fluid Flow Control and for Simulating Variable Gravity Conditions, Mechanical Engineering Department, University of Illinois, Chicago, IL, March 9, 2005. N. Ramachandran.
100. A Novel Material For Future Spacecrafts, BAE System’s Chairman Award Committee Panel, Rockville, MD, September 8, 2005. S. Sen and E. Cothran.
101. Observations of Compact X-Ray Binaries With Chandra, COSPAR Colloquium “Spectra and Timing of Compact X-Ray Binaries,” Mumbai, India, January 17–21, 2005. M.C. Weisskopf.
102. Observations of Soft Gamma Repeaters, Triggering Relativistic Jets Meeting, Cozumel, Mexico, March 28–April 1, 2005. C. Kouveliotou.
103. Observing Filament Eruptions With Solar-B, 6th Solar-B Science Meeting, Kyoto, Japan, November 8–11, 2005. A.C. Sterling and R.L. Moore.
104. Observing Solar Eruptions With Solar-B and STEREO, STEREO/Solar-B Science Planning Workshop, Oahu, HI, November 15–18, 2005. A.C. Sterling.
105. Origin of the Sheared Magnetic Fields That Erupt in Flares and Coronal Mass Ejections, 6th Solar-B Science Meeting, Kyoto, Japan, November 8–11, 2005. R.L. Moore and A.C. Sterling.
106. Particle Acceleration in Jets, 2006th Meeting of the American Astronomical Society, Minneapolis, MN, May 29–June 2, 2005. K.-I. Nishikawa.
107. Particle Acceleration, Magnetic Field Generation in Relativistic Shocks, International Workshop on Particles and Radiation from Cosmic Accelerators, Chiba, Japan, March 2–4, 2005.

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