FY 2005 Scientific and Technical Reports, Articles, Papers, and Presentations

Compiled by
K.A. Narmore
Marshall Space Flight Center, Marshall Space Flight Center, Alabama
Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA Scientific and Technical Information (STI) Program Office plays a key part in helping NASA maintain this important role.

The NASA STI program operates under the auspices of the Agency Chief Information Officer. It collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NASA Aeronautics and Space Database and its public interface, the NASA Technical Report Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

- **TECHNICAL PUBLICATION.** Reports of completed research or a major significant phase of research that present the results of NASA programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA's counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.

- **TECHNICAL MEMORANDUM.** Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- **CONTRACTOR REPORT.** Scientific and technical findings by NASA-sponsored contractors and grantees.

- **CONFERENCE PUBLICATION.** Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA.

- **SPECIAL PUBLICATION.** Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.

- **TECHNICAL TRANSLATION.** English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services also include creating custom thesauri, building customized databases, and organizing and publishing research results.

For more information about the NASA STI program, see the following:

- Access the NASA STI program home page at <http://www.sti.nasa.gov>
- E-mail your question via the Internet to <help@sti.nasa.gov>
- Fax your question to the NASA STI Help Desk at 301–621–0134
- Phone the NASA STI Help Desk at 301–621–0390
- Write to:
  NASA STI Help Desk
  NASA Center for AeroSpace Information
  7115 Standard Drive
  Hanover, MD 21076–1320
FY 2005 Scientific and Technical Reports, Articles, Papers, and Presentations

Compiled by
K.A. Narmore
Marshall Space Flight Center, Marshall Space Flight Center, Alabama
FOREWORD

In accordance with the NASA Space Act of 1958, the George C. Marshall Space Flight Center (MSFC) has provided for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof.

Since July 1, 1960, when MSFC was organized, the reporting of scientific and engineering information has been considered a prime responsibility of the Center. Our credo has been that “research and development work is valuable, but only if its results can be communicated and made understandable to others.”
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NASA TECHNICAL MEMORANDUMS</td>
<td>1</td>
</tr>
<tr>
<td>NASA TECHNICAL PUBLICATIONS</td>
<td>5</td>
</tr>
<tr>
<td>NASA CONFERENCE PUBLICATIONS</td>
<td>6</td>
</tr>
<tr>
<td>NASA CONTRACTOR REPORTS</td>
<td>7</td>
</tr>
<tr>
<td>MSFC ABSTRACTS, ARTICLES, PAPERS, AND PRESENTATIONS CLEARED FOR DISSEMINATION</td>
<td>8</td>
</tr>
<tr>
<td>INDEX</td>
<td>59</td>
</tr>
</tbody>
</table>
Performing the atmospheric composition of a crewed spacecraft cabin is central to successfully expanding the breadth and depth of first-hand human knowledge and understanding of space. Highly reliable technologies must be identified and developed to monitor atmospheric composition. This will enable crewed space missions that last weeks, months, and eventually years. Atmospheric composition monitoring is a primary component of any environmental control and life support system. Instrumentation employed to monitor atmospheric composition must be inexpensive, simple, and lightweight and provide robust performance. Such a system will ensure an environment that promotes human safety and health, and that the environment can be maintained with a high degree of confidence. Key to this confidence is the capability for any technology to operate autonomously, with little intervention from the crew or mission control personnel. A study has been conducted using technologies that, with further development, may reach these goals.

Monitoring the atmospheric composition of a crewed spacecraft cabin is central to successfully expanding the breadth and depth of first-hand human knowledge and understanding of space. Highly reliable technologies must be identified and developed to monitor atmospheric composition. This will enable crewed space missions that last weeks, months, and eventually years. Atmospheric composition monitoring is a primary component of any environmental control and life support system. Instrumentation employed to monitor atmospheric composition must be inexpensive, simple, and lightweight and provide robust performance. Such a system will ensure an environment that promotes human safety and health, and that the environment can be maintained with a high degree of confidence. Key to this confidence is the capability for any technology to operate autonomously, with little intervention from the crew or mission control personnel. A study has been conducted using technologies that, with further development, may reach these goals.

Launch vehicles consume large quantities of propellant quickly, causing the mass properties and structural dynamics of the vehicle to change dramatically. Currently, structural load assessments account for this change with a large collection of structural models representing various propellant fill levels. This creates a large database of models complicating the delivery of reduced models and requiring extensive work for model changes. Presented here is a method to account for these mass changes in a more efficient manner. The method allows for the subtraction of propellant mass as the propellant is used in the simulation. This subtraction is done in the modal domain of the vehicle generalized model. Additional computation required is primarily for constructing the used propellant mass matrix from an initial propellant model and further matrix multiplications and subtractions. An additional eigenvalue solution is required to uncouple the new equations of motion; however, this is a much simpler calculation starting from a system that is already substantially uncoupled. The method was successfully tested in a simulation of Saturn V loads. Results from the method are compared to results from separate structural models for several propellant levels, showing excellent agreement. Further development to encompass more complicated propellant models, including slosh dynamics, is possible.

Quartz crystal microbalances (QCMs) are commonly used to measure the rate of deposition of molecular species on a surface. The measurement is often used to select materials with a low outgassing rate for applications where the material has a line of sight to a contamination-sensitive surface. A quantitative, in situ calibration of the balance, or balances, using a pure material for which the enthalpy of sublimation is known, is described in this Technical Memorandum. Supporting calculations for surface dwell times of deposited materials and the effusion cell Clausing factor are presented along with examples of multiple QCM measurements of outgassing from a common source.

Many microgravity space-science experiments require vibratory acceleration levels that are unachievable without active isolation. The Boeing Corporation’s active rack isolation system (ARIS) employs a novel combination of magnetic actuation and mechanical linkages to address these isolation requirements on the International Space Station.

Effective model-based vibration isolation requires: (1) An isolation device, (2) an adequate dynamic; i.e., mathematical, model of that isolator, and (3) a suitable, corresponding controller. This Technical Memorandum documents the validation of that high-fidelity dynamic model of ARIS.

The verification of this dynamics model was achieved by utilizing two commercial off-the-shelf (COTS) software tools: Deneb’s ENVISION®, and Online Dynamics’ Autolev™. ENVISION is a robotics software package developed for the automotive industry that employs three-dimensional computer-aided design models to facilitate both forward and inverse kinematics analyses. Autolev is a DOS-based interpreter designed, in general, to solve vector-based mathematical problems and specifically to solve dynamics problems using Kane’s method.

The simplification of this model was achieved using the small-angle theorem for the joint angle of the ARIS actuators. This simplification has a profound effect on the overall complexity of the closed-form solution while yielding a closed-form solution easily employed using COTS control hardware.

This Technical Memorandum describes the development of several high-strength aluminum (Al) alloys that are compatible with hydrogen peroxide (H₂O₂) propellant for NASA Hypersonic-X (Hyper-X) vehicles’ fuel tanks and structures. The yield strengths for some of these Al-magnesium-based alloys are more than 3 times stronger than the conventional 5254–H112 Al alloy, while maintaining excellent H₂O₂ compatibility similar to class 1 5254 alloy. The alloy development strategy is to add scandium, zirconium, and other transitional metals with unique electrochemical properties, which will not act as catalysts, to decompose the highly concentrated 90 percent H₂O₂. Test coupons are machined from sheet metals for H₂O₂ long-term exposure testing and mechanical properties testing. In addition, the ability to weld the new alloys using friction stir welding has also been explored. The new high-strength alloys could represent an enabling material technology for Hyper-X vehicles, where flight weight reduction is a critical requirement.


This Technical Memorandum covers revolutionary ideas for space radiation shielding that would mitigate mission costs while limiting human exposure, as studied in a workshop held at Marshall Space Flight Center at the request of NASA Headquarters. None of the revolutionary new ideas examined for the first time in this workshop showed clear promise. The workshop attendees felt that some previously examined concepts were definitely useful and should be pursued. The workshop attendees also concluded that several of the new concepts warranted further investigation to clarify their value.


A potential fission power system for in-space missions is a heat pipe-cooled reactor coupled to a Brayton cycle. In this system, a heat exchanger (HX) transfers the heat of the reactor core to the Brayton gas. The Safe, Affordable Fission Engine- (SAFE-) 100a is a test program designed to thermally and hydraulically simulate a 95 Btu/s prototypic heat pipe-cooled reactor using electrical resistance heaters on the ground. This Technical Memorandum documents the thermal and structural assessment of the HX used in the SAFE-100a program.


The International Space Station (ISS) uses high-efficiency particulate air filters to remove particulate matter from the cabin atmosphere. Known as bacteria filter elements (BFEs), there are 13 elements deployed on board the ISS’s U.S. segment in the flight 4R assembly level. The preflight service life prediction of 1 yr for the BFEs is based upon engineering analysis of data collected during developmental testing that used a synthetic dust challenge. While this challenge is considered reasonable and conservative from a design perspective, an understanding of the actual filter loading is required to best manage the critical ISS program resources. Testing was conducted on BFEs returned from the ISS to refine the service life prediction. Results from this testing and implications to ISS resource management are provided.


In the late 1980s, microgravity researchers began to voice their concern that umbilical-transmitted energy could significantly degrade the acceleration environment of microgravity
space science experiments onboard manned spacecraft. Since umbilicals are necessary for many experiments, control designers began to seek ways to compensate for these “indirect” disturbances.

Hampton et al. used the Kane’s method to develop a model of the active rack isolation system (ARIS) that includes (1) actuator control forces, (2) direct disturbance forces, and (3) indirect, actuator-transmitted disturbances. Their model does not, however, include the indirect, umbilical-transmitted disturbances. Since the umbilical stiffesses are not negligible, these indirect disturbances must be included in the model. Until the umbilicals have been appropriately included, the model will be incomplete.

This Technical Memorandum presents a nonlinear model of ARIS with umbilicals included. Model verification was achieved by utilizing two commercial-off-the-shelf software tools. Various forces and moments were applied to the model to yield simulated responses of the system. Plots of the simulation results show how various critical points on an ARIS-outfitted international standard payload rack behave under the application of direct disturbances, indirect disturbances, and control forces. Simulations also show system response to a variety of initial conditions.

TM—2005–213902
Method for Determination of <5 ppm Oxygen in Sodium Samples. R.S. Reid, J.J. Martin, and G.L. Schmidt*. Propulsion Research Center, Space Transportation Directorate and *New Mexico Institute of Mining and Technology.

Alkali metals used in pumped loops or heat pipes must be sufficiently free of nonmetallic impurities to ensure long heat rejection system life. Life issues are well established for alkali metal systems. Impurities can form ternary compounds between the container and working fluid, leading to corrosion. This Technical Memorandum discusses the consequences of impurities and candidate measurement techniques to determine whether impurities have been reduced to sufficiently low levels within a single-phase liquid metal loop or a closed two-phase heat transfer system, such as a heat pipe. These techniques include the vanadium wire equilibration, neutron activation analysis, plug traps, distillation, and chemical analysis. Conceptual procedures for performing vanadium wire equilibration purity measurements on sodium contained in a heat pipe are discussed in detail.

TM—2005–214007

Human exploration and utilization of space requires habitats to provide appropriate conditions for working and living. These conditions are provided by environmental control and life support systems (ECLSS) that ensure appropriate atmosphere composition, pressure, and temperature; manage and distribute water, process waste matter, provide fire detection and suppression; and other functions as necessary.

The tables in appendix I of NASA RP–1324 “Designing for Human Presence in Space” summarize the life support functions and processes used onboard U.S. and U.S.S.R/Russian space habitats. These tables have been updated to include information on thermal control methods and to provide additional information on the ECLS systems.

TM—2005–214008
August 2005
An Assessment of the International Space Station’s Trace Contaminant Control Subassembly Process Economics. J.L. Perry, H.E. Cole,* and H.N. El-Lessy**. spacecraft and Vehicle Systems Department, Engineering Directorate *The Boeing Company, Huntsville, AL, and **The Boeing Company, Houston, TX.

The International Space Station (ISS) Environmental Control and Life Support System includes equipment specifically designed to actively remove trace chemical contamination from the cabin atmosphere. In the U.S. on-orbit segment, this function is provided by the trace contaminant control subassembly (TCCS) located in the atmosphere revitalization subsystem rack housed in the laboratory module, Destiny. The TCCS employs expendable adsorbent beds to accomplish its function leading to a potentially significant life cycle cost over the life of the ISS. Because maintaining the TCCSs proper can be logistically intensive, its performance in flight has been studied in detail to determine where savings may be achieved. Details of these studies and recommendations for improving the TCCS’s process economics without compromising its performance or crew health and safety are presented and discussed.

TM—2005–214061
September 2005

Contaminated air, whether in a crewed spacecraft cabin or terrestrial work and living spaces, is a pervasive problem affecting human health, performance, and well-being. The need for highly effective, economical air quality processes spans a wide range of terrestrial and space flight applications. Typically, air quality control processes rely on absorption-based processes. Most industrial packed-bed adsorption processes use activated
carbon. Once saturated, the carbon is either dumped or regenerated. In either case, the dumped carbon and concentrated waste streams constitute a hazardous waste that must be handled safely while minimizing environmental impact. Thermal catalytic oxidation processes designed to address waste handling issues are moving to the forefront of cleaner air quality control and process gas decontamination processes. Careful consideration in designing the catalyst substrate and reactor can lead to more complete contaminant destruction and poisoning resistance. Maintenance improvements leading to reduced waste handling and process downtime can also be realized. Performance of a prototype thermal catalytic reaction based on ultrashort waste channel, monolith catalyst substrate design, under a variety of process flow and contaminating loading conditions, is discussed.

TM—2005–214184 September 2005
In-Space Propulsion: Connectivity to In-Space Fabrication and Repair. L. Johnson, D. Harris, A. Trausch, G.L. Matloff,* T. Taylor,** and K. Cutting***. In-Space Propulsion Technology Office, Space Transportation Programs/Projects Office, *New York City College of Technology, **BAE Systems, and ***Gray Research.

The connectivity between new in-space propulsion technologies and the ultimate development of an in-space fabrication and repair infrastructure are described in this Technical Memorandum. A number of advanced in-space propulsion technologies are being developed by NASA, many of which are directly relevant to the establishment of such an in-space infrastructure. These include aerocapture, advanced solar-electric propulsion, solar-thermal propulsion, advanced chemical propulsion, tethers, and solar photon sails. Other, further term technologies have also been studied to assess their utility to the development of such an infrastructure.

TM—2005–214186 September 2005

The Advanced Sensor Concepts project was conducted under the Center Director’s Discretionary Fund at the Marshall Space Flight Center. Its objective was to advance the technology originally developed for the Glovebox Integrated Microgravity Isolation Technology project. The objective of this effort was to develop and test several new motion sensors. To date, the investigators have invented seven new technologies during this endeavor and have conceived several others. The innovative basic sensor technology is an absolute position sensor. It employs only two active components, and it is simple, inexpensive, reliable, repeatable, lightweight, and relatively unobtrusive. Two sensors can be utilized in the same physical space to achieve redundancy. The sensor has micrometer positional accuracy and can be configured as a two- or three-dimensional sensor. The sensor technology has the potential to pioneer a new class of linear and rotary sensors. This sensor is the enabling technology for autonomous assembly of modular structures in space and on extraterrestrial locations.

TM—2005–214189 September 2005

During the 113 missions of the Space Transportation System (STS) to date, the Space Shuttle fleet has been exposed to the elements on the launch pad for ≈4,195 days. The Natural Environments Branch at Marshall Space Flight Center archives atmospheric environments to which the Space Shuttle vehicles are exposed. This Technical Memorandum (TM) provides a summary of the historical record of the meteorological conditions encountered by the Space Shuttle fleet during the pad exposure period. Parameters included in this TM are temperature, relative humidity, wind speed, wind direction, sea level pressure, and precipitation. Extremes for each of these parameters for each mission are also summarized. Sources for the data include meteorological towers and hourly surface observations. Data are provided from the first launch of the STS in 1981 through the launch of STS–107 in 2003.

Spotless days are examined as a predictor for the size and timing of a sunspot cycle. For cycles 16–23, the first spotless day for a new cycle, which occurs during the decline of the old cycle, is found to precede minimum amplitude for the new cycle by about \( \approx 34 \) mo, having a range of 25–40 mo. Reports indicate that the first spotless day for cycle 24 occurred in January 2004, suggesting that minimum amplitude for cycle 24 should be expected before April 2007, probably sometime during the latter half of 2006. If true, then cycle 23 will be classified as a cycle of shorter period, inferring further that cycle 24 likely will be a cycle of larger than average minimum and maximum amplitudes and faster than average rise, peaking sometime in 2010.


A multimegawatt-class nuclear fission powered closed cycle magnetohydrodynamic space power plant using a helium/xenon working gas has been studied, to include a comprehensive system analysis. Total plant efficiency was expected to be 55.2 percent including preionization power. The effects of compressor stage number, regenerator efficiency, and radiation cooler temperature on plant efficiency were investigated. The specific mass of the power generation plant was also examined. System specific mass was estimated to be 3 kg/kWe for a net electrical output power of 1 MWe, 2–3 kg/kWe at 2 MWe, and \( \approx 2 \) kg/KWe at >3 MWe. Three phases of research and development plan were proposed: (1) Phase I—proof of principle, (2) Phase II—demonstration of power generation, and (3) Phase III—prototypical closed loop test.


A computational method for the analysis of longitudinal-mode liquid rocket combustion instability has been developed based on the unsteady, quasi-one-dimensional Euler equations where the combustion process source terms were introduced through the incorporation of a two-zone, linearized representation: (1) A two-parameter collapsed combustion zone at the injector face, and (2) a two-parameter distributed combustion zone based on a Lagrangian treatment of the propellant spray. The unsteady Euler equations in inhomogeneous form retain full hyperbolicity and are integrated implicitly in time using second-order, high-resolution, characteristic-based, flux-differencing spatial discretization with Roe-averaging of the Jacobian matrix. This method was initially validated against an analytical solution for nonreacting, isentropic duct acoustics with specified admittances at the inflow and outflow boundaries. For small amplitude perturbations, numerical predictions for the amplification coefficient and oscillation period were found to compare favorably with predictions from linearized small-disturbance theory as long as the grid exceeded a critical density (\( \approx 100 \) nodes/wavelength). The numerical methodology was then exercised on a generic combustor configuration using both collapsed and distributed combustion zone models with a short nozzle admittance approximation for the outflow boundary. In these cases, the response parameters were varied to determine stability limits defining resonant coupling onset.

This document contains the proceedings of the Fifth International Symposium on Liquid Space Propulsion, held October 27–30, 2003, in Chattanooga, TN. The International Liquid Space Propulsion Symposia provide the principal forum for all aspects of liquid rocket propulsion. The aim of the symposium series is to gather international experts in the field of liquid rocket engines on a regular basis for presentations and discussions of the current status of research and development. Besides an exchange of information about future trends, it also fortifies existing cooperation and acts as a nucleus to establish networks to enhance international scientific collaboration in the liquid rocket propulsion area.


As a space faring nation, we are at a critical juncture in the evolution of space exploration. NASA has announced its Vision for Space Exploration, a vision of returning humans to the Moon, sending robots and eventually humans to Mars, and exploring the outer solar system via automated spacecraft. However, mission concepts have become increasingly complex, with the potential to yield a wealth of scientific knowledge. Meanwhile, there are significant resource challenges to be met. Launch costs remain a barrier to routine space flight; the ever-changing fiscal and political environments can wreak havoc on mission planning; and technologies are constantly improving, and systems that were state of the art when a program began can quickly become outmoded before a mission is even launched. This Conference Publication describes the workshop and featured presentations by world-class experts presenting leading-edge technologies and applications in the areas of power and propulsion; communications; automation, robotics, computing, and intelligent systems; and transformational techniques for space activities. Workshops such as this one provide an excellent medium for capturing the broadest possible array of insights and expertise, learning from researchers in universities, national laboratories, NASA field Centers, and industry to help better our future in space.


The objective of this Technical Interchange Meeting was to increase the quantity and quality of technical, cost, and programmatic data used to model the impact of investing in different technologies. The focus of this meeting was the Technology Tool Box (TTB), a database of performance, operations, and programmatic parameters provided by technologists and used by systems engineers. The TTB is the data repository used by a system of models known as the Advanced Technology Lifecycle Analysis System (ATLAS). This report describes the result of the November meeting, and also provides background information on ATLAS and the TTB.
On Structural Design of a Mobile Lunar Habitat With Multi-Layered Environmental Shielding. M. Rais-Rohani. NASA's Faculty Fellowship Program, Mississippi State University.

This report presents an overview of a Mobile Lunar Habitat (MLH) structural design consisting of advanced composite materials. The habitat design is derived from the cylindrical-shaped U.S. Lab module aboard the International Space Station (ISS) and includes two lateral ports and a hatch at each end that geometrically match those of the ISS Nodes. Thus, several MLH units can be connected together to form a larger lunar outpost of various architectures. For enhanced mobility over the lunar terrain, the MLH uses six articulated insect-like robotic, retractable legs enabling the habitat to fit aboard a launch vehicle. The carbon-composite shell is sandwiched between two layers of hydrogen-rich polyethylene for enhanced radiation shielding. The pressure vessel is covered by modular double-wall panels for meteoroid impact shielding supported by externally mounted stiffeners. The habitat’s structure is an assembly of multiple parts manufactured separately and bonded together. Based on the geometric complexity of a part and its material system, an appropriate fabrication process is proposed.


Single-crystal super alloys are commonly used for components in the hot sections of contemporary jet and rocket engines. Due to the anisotropic nature of single-crystal materials, the use of existing isotropic fracture mechanics calculations leads to errors in stress intensity factors. The difference can be substantial.

Presented in this report is the solution for calculating stress intensity factors in generally anisotropic materials using the $M$-integral. Included are examples of this solution applied to Brazilian disk crack growth specimens.
ABBAS, M.M. XD12
TANKOSIC, D. UAH
CRAVEN, P.D. XD12
SPANN, J.F. XD12
LECLAIR, A. UAH
WEST, E.A. XD12


ABBAS, M.M. XD12
TANKOSIC, D. UAH
CRAVEN, P.D. XD12
SPANN, J.F. XD12
LECLAIR, A. UAH
WEST, E.A. XD12
TAYLOR, L. University Of Tennessee
HOOVER, R.B. XD12


ABBAS, M.M. XD12
TANKOSIC, D. UAH
CRAVEN, P.D. XD12
SPANN, J.F. XD12
LECLAIR, A. UAH
WEST, E.A. XD12
WEINGARTNER, J.C. George Mason University
TIELENS, A.G.G.M. Kapteyn Astronomical Institute
NUTH, J.A. UAB
ET AL.


ABYZOV, S.S. Winogradsky Institute of Microbiology RAS
GERASIMENKO, L.M. Winogradsky Institute of Microbiology RAS
HOOVER, R.B. XD12
MITSKEVICH, I.N. Winogradsky Institute of Microbiology RAS
MULYUKIN, A.L. Winogradsky Institute of Microbiology RAS
POGLAZOVA, M.N. Winogradsky Institute of Microbiology RAS
RAZANOV, A.Y. Paleontological Institute RAS

ALEXANDER, L.A. TD50
BISHOP-BEHEL, K. NP40
BENFIELD, M.P.J. SAIC
KELLEY, A. EV23
WOODCOCK, G.R. Gray Research, Inc.


AMAND, A. Phyco Tech, Inc.
HOOVER, R.B. XD12
JERMAN, G. XD12
ROZANOV, A.Y. Paleontological Institute of Russian Academy of Sciences


ARRANZ, A.C. GACE
WILSON, C.A. XD12
CONNELL, P. GACE
NUNEZ, S.M. GACE
BLAY, P. GACE
BECKMANN, V. Goddard Space Flight Center (GSFC)
REGLERO, V. GACE


ASTAFIEVA, M.M. Paleontological Institute of Russian Academy of Sciences
HOOVER, R.B. XD12
ROZANOV, A.Y. Paleontological Institute of Russian Academy of Sciences


BALLANCE, J.L. NP40
YOUNG, R.M. NP23
ADAMS, C.L. Gray Research, Inc.


BALLARD, R.O. ER11


BALLARD, R.O. ER11
BROWN, K.K. ER21


BARTHELMY, S.D. GSFC
CHINCARINI, G. INAF
BURROWS, D. University Degli Studi Di GeHRELS, N. Pennsylvania State University
COVINO, S. INAF
MORETTI, A. INAF
ROMANO, P. INAF
O’BRIEN, P. University of Leicester
KOUVELIOTOU, C. XD12 ET AL.


BARTHELMY, S.D. GSFC
CANNIZZO, J.K. GSFC/University of Maryland
GEHRELS, N. GSFC
CUSUMANO, G. INAF
O’BRIEN, P. University of Leicester
VAUGHAN, S. University of Leicester
ZHANG, B. University of Nevada Las Vegas
BURROWS, D.N. Pennsylvania State University
KOUVELIOTOU, C. XD12 ET AL.


BASSLER, J.A. SD40
GRUGEL, R.N. SD40
BODIFORD, M.P. SD40
FISKE, M.R. Morgan Research Corp.
GILLEY, S.D. Tece-Masters, Inc.
EVANS, B.W. Teledyne Brown Eng.


BASSLER, J.A. SD40
BODIFORD, M.P. SD40
FISKE, M.R. Morgan Research Corp.
STRONG, J.D. Morgan Research Corp.


BATKOV, K.E. Moscow State University
PANOV, A.D. Moscow State University
ADAMS, J.H. XD12
AHN, H.S. University of Maryland
BASHINDZHAGYAN, G.L. Moscow State University
CHANG, J. Max Plank Institute for Solar Systems/
Purple Mountain Observatory
CHRISTL, M. XD12


BEMPORAD, A. Universita’ di Firenze
POLETTO, G. INAF
SUSS, S.T. XD12
KO, Y.-K. Harvard-Smithsonian Center for Astrophysics
SCHWARDRON, N.A. Southwest Research Institute (SWRI)
ELLIOTT, H.A. SWRI
RAYMOND, J.C. Harvard-Smithsonian Center for Astrophysics


BERGERON, N.P. University of Louisiana
HOLLERMAN, W.A. University of Louisiana
GOEDEKE, S.M. Oak Ridge
HOVATER, M. EM50
HUBBS, W. EM50
FINCHUM, A. EM50
MOORE, R.J. University of Louisiana
ALLISON, S.W. Oak Ridge
EDWARDS, D.L. EM50


BHARDWAJ, A. National Research Council (NRC)
ELSNER, R.F. XD12
GLADSTONE, G.R. SWRI
WAITE, JR., J.H. University of Michigan
LUGAZ, N. University of Michigan
CRAVENS, T.E. University of Kansas
BRANDUARDI-RAYMONT, G. UCL, MSSL
RAMSAy, G. University College London
SORIA, R. University College London
ET AL.


BHARDWAJ, A. NRC
ELSNER, R.F. XD12
GLADSTONE, G.R. SWRI
WAITE, JR., J.H. University of Michigan
CRAVENS, T.E. University of Kansas
OSTGAARD, N. University of Bergen
DENNERL, K. MPI fur Extraterrestrische LISS, C. University of Maryland
ET AL.


BHARDWAJ, A. NRC
ELSNER, R.F. XD12
GLADSTONE, G.R. SWRI
WAITE, JR., J.H. University of Michigan
CRAVENS, T.E. University of Kansas
CHANG, S-W. UAH/SD50
MAJEED, T. University of Michigan
METZGER, A.E. Jet Propulsion Laboratory (JPL)


BHARDWAJ, A. NRC
ELSNER, R.F. XD12
GLADSTONE, G.R. SWRI
CRAVENS, T.E. University of Kansas
WAITE, JR., J.H. University of Michigan
BRANDUARDI-RAYMONT, G. UCL, MSSL
FORD, P.G. Center for Space Research

BHARDWAJ, A. NRC
ELSNER, R.F. XD12
WAITE, JR., J.H. University of Michigan
GLADSTONE, G.R. SWRI
BRANDUARDI-RAYMONT, G. UCL, MSSL
CRAVENS, T.E. University of Kansas
FORD, P.G. Center for Space Research


BODIFORD, M.P. SD40
BURKS, K.H. SD40
FISKE, M.R. Morgan Research Corp.
STRONG, J.D. Morgan Research Corp.
MCGRGREGOR, W.L. Morgan Research Corp.


BODIFORD, M.P. SD40
FISKE, M.R. Morgan Research Corp.
MCGRGREGOR, W. Morgan Research Corp.
POPE, R.D. Qualis Corp.


BODIFORD, M.P. SD40
GILLEY, S.D. Tec-Masters, Inc.
HOWARD, R.W. Teledyne Brown Engineering
KENNEDY, J.P. Teledyne Brown Engineering
RAY, J.A. Teledyne Brown Engineering

Are We There Yet? Developing In Situ Fabrication and Repair (ISFR) Technologies to Explore and Live on the Moon and Mars—Final Paper. For presentation at the AIAA 1st Exploration Conference, Orlando, FL, January 31–February 1, 2005.

BODIFORD, M.P. SD40
BROWN, G.N. SY10
MCGRGREGOR, W.L. Morgan Research Corp.


BODIFORD, M.P. SD40
FISKE, M.R. Morgan Research Corp.
MCGRGREGOR, W. Morgan Research Corp.


BONAMENTE, M. UAH
JOY, M. XD12
LAROQUE, S. University of Chicago
CARLSTROM, J. University of Chicago
REESE, E. University of California, Davis

BONAMENTE, M. UAH
LIEU, R. UAH
MITTAZ, P.D. UAH
KAASTRA, J.S. SRON Utrecht
NEVALAINEN, J. Harvard-Smithsonian


BONOMETTI, J.A. NP40
SORENSEN, K.F. NP23
JANSEN, R. University of Toledo
DANKANICH, J.W. Gray Research, Inc.
FRAME, K.L. Gray Research, Inc.


BRADSHAW, R.C. University of Massachusetts
SCHMIDT, D.P. University of Massachusetts
ROGERS, J.R. XD42
KELTON, K.F. Washington University
HYERS, R.W. University of Massachusetts


BRAGG-SITTON, S.M. ER11


BRAGG-SITTON, S.M. ER11


BRAGG-SITTON, S.M. ER11
MORTON, T.J. University of New Mexico

CARRASQUILO, R.L. EV50

CARRINGTON, C.K. SP20
DAY, G. Boeing Phantom Works

CARTER, D.L. EV50
TABB, D. EV50
TATARA, J.D. Qualis Corp.
MASON, P.K. Hamilton Sundstrand
Performance Qualification Test of the ISS Water Processor Assembly (WPA) Expendables—Final Paper. For presentation at the 34th International Conference on Environmental Systems (ICES), Rome, Italy, July 11–14, 2005.

CASE, J.T. University of Missouri-Rolla
ROBBINS, J. University of Missouri-Rolla
KHARKOVSKY, S. University of Missouri-Rolla
HEPBURN, F.L. EM20
ZOUGHI, R. University of Missouri-Rolla

CASE, J.T. University of Missouri-Rolla
ROBBINS, J. University of Missouri-Rolla
KHARKOVSKY, S. University of Missouri-Rolla
HEPBURN, F.L. EM20
ZOUGHI, R. University of Missouri-Rolla

CECIL, D. UAH
GOODMAN, S.J. XD11
BOCCIPPIO, D.J. XP11

ZIPSER, E.J. University of Utah
NESBITT, S.W. Colorado State University

CHANDLER, F. The Boeing Company
GRAYSON, G. The Boeing Company
MAZURKIVICH, P. NP60

CHANDLER, M.O. XD12
AVANOV, L.A. XD12

CHANG, H. XD42/UAH
SMITH, D.D. XD42/University of Mexico

CHANG, H. XD42/UAH
SMITH, D.D. XD42/University of New Mexico
FULLER, K.A. National Space Science and Technology Center
DIMMOCK, J.O. UAH
GREGORY, D.A. UAH
FRAZIER, D.O. XD42

CHANG, J. Purple Mountain Laboratory
SCHMIDT, W.K.H. Max-Planck-Institut für Aeronomie
ADAMS, J.H. XD12
AHN, H.S. University of Maryland
BASHINDZHAGYAN, G.L. Moscow State University
BATKOV, K.E. Moscow State University
CHRISTL, M. Louisiana State University
FAZELY, A.F. Southern University
GANEL, O. University of Maryland

ET AL.

CHAVERS, D.G. XD22
BENGTSON, R. University of Texas at Austin
BREIZMAN, B. University of Texas at Austin
CHANG-DIAZ, F. XD22
JONES, J. XD22
DOBSON, C. XD22

Status of Magnetic Nozzle and Plasma Detachment Experiment—Abstract Only. For presentation at the 53rd JPM/2nd LPS/SP Joint Meeting (JANNAF), Monterey, CA, December 5–8, 2005.

CHAVERS, D.G. XD22


CHEN, P-S. EM03
MITCHELL, M.L. EM03

Alloy NASA–HR–1—Final Paper. For publication in Aerospace Structural Metals, Purdue Research Foundation.

CHENG, G.C. UAB
FARMER, R.C. UAB


CHU NG, Y. T. The Boeing Company
LO, W. The Boeing Company
FOWLER, S.B. XP01
TOWNER, R. Jacobs Sverdrup


CLINTON, R.G. XD40
SZOF RAN, F.R. XD40
BASSLER, J.A. XD40
SCHLAGHECK, R.A. XD40
COOK, M.B. XD40


COFFEY, V. N. XD12
SINGH, N. UAH
AVANO V, L.A. XD12


COU DHARY, D.P. SD50


CHRISTIAN, H.J. XD11

Global Lightning Activity—Abstract Only. For presentation at the Cosmosphere and Space Center, Wichita, KA, April 14–15, 2005, and at The Mexican Meteorological Conference, Cancun, Mexico, February 28–March 4, 2005.

CHRISTIAN, H.J. XD11


CHIRON, Y. T. The Boeing Company
LO, W. The Boeing Company
FOWLER, S.B. XP01
TOWNER, R. Jacobs Sverdrup


CLINTON, R.G. XD40
SZOF RAN, F.R. XD40
BASSLER, J.A. XD40
SCHLAGHECK, R.A. XD40
COOK, M.B. XD40


COFFEY, V. N. XD12
SINGH, N. UAH
AVANO V, L.A. XD12


COU DHARY, D.P. SD50


CHRISTIAN, H.J. XD11

Global Lightning Activity—Abstract Only. For presentation at the Cosmosphere and Space Center, Wichita, KA, April 14–15, 2005, and at The Mexican Meteorological Conference, Cancun, Mexico, February 28–March 4, 2005.

CHRISTIAN, H.J. XD11

the American Geophysical Union 2005 Fall Meeting, San Francisco, CA, December 5–9, 2005.

COLE, J.W. XD20

COLE, J.W. XD20

COMARAZAMY, D.E. University of Puerto Rico
GONZALEZ, J.E. Santa Clara University
LUVALL, J.C. XD11
RICKMAN, D.L. XD11

COOK, S. NP01
TYSON, R. NP01

COOKE, W.J. EV13
MOSER, D. Morgan Research Corp.

COOKE, W.J. EV13
SWIFT, W.R. Raytheon/EV13
SUGGS, R.M. EV13

COOKE, W.J. EV13
MCNAMARA, H.A. EV13

COSMO, M.L. Harvard-Smithsonian Center for Astrophysics
LORENZINI, E.C. Harvard-Smithsonian Center for Astrophysics
GRAMER, D.J. Orbital Technologies Corp.
HOFFMAN, J.H. The University of Texas
MAZZOLENI, A.P. North Carolina State University

COX, M.C. Vanderbilt University
ANILKUMAR, A.V. Vanderbilt University
GRUGEL, R.N. XD41
HOFMEISTER, W.H. XD41

CRAVEN, P.O. XD12
LIEMOHN, M. XD12
CHANDLER, M.O. XD12
MOORE, T. XD12

CRAVENS, T.E. University of Kansas
CLARK, J. University of Kansas
BHANDWAIJ, A. NRC
ELSNER, R.F. XD12
WAITE, JR., J.H. University of Michigan
ACTON, L.W. Montana State University
MAURELLIS, A.N. Space Research Organization Netherlands
GLADSTONE, G.R. SWRI

CROSSON, W.L. XD11
ESTES, M.E. XD11
KAHN, M. XD11
LAPENTA, W.M. XD11
QUATTROCHI, D.A. XD11
Mesoscale Modeling of Atlanta, GA Utilizing a New High-Resolution Landcover Data Set — Abstract Only. For

CRUZEN, C.A. EO03
DYER, S.V. EO03
GIBBS III, R.E. The Boeing Company
CECH, J.G. Teledyne Brown Engineering


CURREN, P.A. XD40


DARDEN, C. National Weather Service Forecast Office
GATLIN, P. National Weather Service Forecast Office
BURKS, J. National Weather Service Forecast Office

In Situ Resources in Space—Abstract Only. For presentation at the National Space and Missile Materials Symposium, Summerlin, NV, June 27–July 1, 2005.

DARROUZET, F. Belgian Institute for Space Aeronomy
DE KEYSER, J. Belgian Institute for Space Aeronomy
DECREAU, P. Laboratoire de Physique et Chimie de l’Environnement

GALLAGHER, D.L. XD12
PIERRARD, V. Belgian Institute for Space Aeronomy
LEMAIRE, J. Belgian Institute for Space Aeronomy
DANDOURAS, I. Centre d’Etude Spatiale des Rayonnements
DECKER, R. EV13
LEACH, R. Morgan Research Corp.

DECKER, R. EV13
PRICKETT, T. EV13
ROBERTS, B. EV13

DELAY, T. EM40

DICKERSON, T. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

DING, J. EM30

DISCHINGER, JR., H.C. EV11
MULLINS, J.B. EV11

DISCHINGER, P. IS05

DISCHINGER, P. IS05

DOMINIAK, P. XD42
CISZAK, E.M. XD42

DORNEY, D.J. TD64
SONDAK, D.L. Boston University

DORNEY, S.M. ER43
HAIMES, B. MIT

DOYLE, M. SAIC
O’NEIL, D.A. SP20
CHRISTENSEN, C.B. The Tauri Group

DRAKE, G.W. XD22
KAPLAN, G. ERC, INC./AFRL/PRSP
HALL, L. AFRL/PRSP
HAWKINGS, T. AFRL/PRSP
LARUE, J. AFRL/PRSP
A New Family of Ionic Liquids 1-Amino-3-Alkyl-1,2,3-Triazolium Nitrates—Abstract Only. For publication in the Journal of Chemical Crystallography.

DUARTE, L.A. EV10

ECCLES, W. Vanderbilt University
KASZYNSKI, P. Vanderbilt University
STULGIES, B. Vanderbilt University
GOSTOWSKI, R. XD22
BLEVINS, J.A. XD22
Strained Hydrocarbons at Potential Hypergolic Fuels—Abstract and Presentation. For presentation at the

ECCLES, W. XD20

ELAM, S. ER32
HOLMES, R. ER32
HICKMAN, R. ER32
MCKECHNIE, T. ER32
THOM, G. ER32

ELSNER, R.F. XD12
BHARDWAJ, A. XD12/NRC
GLADSTONE, G.R. SWRI
WAITE, JR., J.H. University of Michigan
CRAVENS, T.E. University of Kansas
FORD, P.G. Center for Space Research
BRANDUARDI-RAYMONT, G. UCL, MSSL
RAMSAY, G. UCL, MSSL
RAMSEY, B.O. XD12
Chandra X-Ray Observatory Observations of the Jovian System—Abstract Only. For presentation at the Six Years of Science With Chandra Symposium Chandra X-Ray Center, Cambridge, MA, November 2–4, 2005.

ELSNER, R.F. XD12
BHARDWAJ, A. XD12
GLADSTONE, G.R. SWRI
WAITE, JR., J.H. University of Michigan
CRAVENS, T.E. University of Kansas
FORD, P.G. Center for Space Research
BRANDUARDI-RAYMONT, G. UCL, MSSL
RAMSEY, B.O. XD12

EMRICH, W. XD21

EMRICH, W. XD21

EMRICH, W. XD21

ENG, R. XD33
CARPENTER, J. XD33
HAIGHT, H.J. XD33
HOGUE, W.D. XD33
KEGLEY, J.R. XD33
STAHL, H.P. XD33
WRIGHT, E.R. XD33
KANE, D. Trex Advanced Materials
HADAWAY, J. UAH
ENG, R. XD33
CARPENTER, J. XD33
HAIGHT, H.J. XD33
HOGUE, W.D. XD33
KEGLEY, T. XD33
KESTER, T.J. XD32
STAHL, H.P. XD30
WRIGHT, E.R. XD33

Cryogenic Performance of Trex SiC Mirror—Abstract Only. For presentation at the Mirror Technology Days, Huntsville, AL, August 16–18, 2005.

ENGBERG, R.C. ET23
LASSITER, J. ET23


ENGBERG, R.C. ET23


ENGEL, C.D. Qualis Corp.
HERALD, S.D. ICRC Aerospace Services
DAVIS, S.E. EM10
Heated Promoted Combustion—Initial Test Results—Presentation. For presentation at the National Space and Missiles Materials Symposium, Summerlin, NV, June 27–July 1, 2005.

ENGEL, C.D. Qualis Corp.
HERALD, S.D. ICRC Aerospace Services
DAVIS, S.E. EM10


ENGEL, C.D. Qualis Corp.
HERALD, S.D. ICRC Aerospace Services
DAVIS, S.E. EM10


ENGEL, C.D. Qualis Corp.
HERALD, S.D. ICRC Aerospace Services

DAVIS, S.E. EM10


ESKRIDGE, R.H. XD22
MARTIN, A.K. XD22
LEE, M.H. XD22
FIMOGNARI III, P.J. UAH


EVANS, S.W. EM50
STELLINGWERF, R.F. Stellingwerf Consulting
STALLWORTH, R. EV32


FARR, R.A. EV11
SANDERS, T.M. ET11


FARR, R.A. EV11
CHRISTENSEN, D.L. Retired
KEITH, E.L. Retired

The Business Case for Spiral Development in Heavy Launch Vehicle Systems—Final Paper. For presentation...

FARR, R.A.  EV11
WILET, J.T.  EV23
VITARIUS, P.  Freelin Innovations


FENDLER, R.D.  University of Southampton
MUXLOW, T.W.B.  University of Manchester
GARRETT, M.  Joint Institute for VLBI in Europe
KOUGELIOU, C.  XD12
GAENSLEIER, B.M.  Harvard-Smithsoninan Center for Astrophysics
GARRINGTON, S.T.  University of Manchester
PARAGI, Z.  Joint Institute for VLBI in Europe
TUDOSO, V.  University of Amsterdam/Astronomical Institute of the Romanian Academy
MILLER-JONES, J.C.A.  University of Amsterdam ET AL.


FERGUISON, C.K.  EI51
ENGLISH, J.M.  UAH
NORDIN, G.P.  UAH
ASHLEY, P.R.  U.S. Army AMRDEC


FERGUISON, D.C.  NP23
VAYNER, B.V.  NP23
GALOFARO, J.T.  NASA GRC
HILLARD, G.B.  NASA GRC

Arcing in LEO—Does the Whole Array Discharge?—Abstract Only. For presentation at the 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005.

FERGUISON, D.C.  NP23
VAYNER, B.V.  Ohio Aerospace Institute
GALOFARO, J.T.  NASA GRC
HILLARD, G.B.  NASA GRC
VAUGHN, J.  NP23
SCHNEIDER, T.  NP23

NASA GRC and MSFC Space-Plasma Arc Testing Procedures—Final Paper. For presentation at the 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005.
FISHMAN, G.J. XD12

FISHMAN, G.J. XD12

FISHMAN, G.J. XD12
PENDLETON, G. Dynetics Corp.

FLACHBART, R.H. ER23
HASTINGS, L.J. ER23
HEDAYAT, A. ER23
NELSON, S.L. ER23
TUCKER, S.P. Alpha Technology Inc.

FLYNN, K. NP60
GUBERT, M. NP60

FOOTE, J.P. XD21
LITCHFORD, R.J. XD21

FOOTE, J.P. XD21
LITCHFORD, R.J. XD21

FORD, P.G. MIT Kavli Institute for Astrophysics and Space Research
ELSNER, R.F. XD12

FRADY, G. ER41

FRAZIER, D.O. SD40
PALEY, M.S. SD40/AZ Tech
STRONG, J.D. Morgan Research Corp.

FRUDENLICH, A. University of Houston
IGNATIEV, A. University of Houston
HORTON, C. University of Houston
DUKE, M. Colorado School of Mines
CURRERI, P.A. XD40
SIBILLE, L. BAE Systems

GARY, G.A. XD12


GATLIN, P. XD11

GOODMAN, S.J. XD11


GATTIS, G.B. ED21

SHEPARD, W.S. University of Alabama

Smart Structures for Vibration Control on Long-Term Space Exploration and Habitation Missions—Abstract Only. For presentation at the AIAA 1st Space Exploration Conference, Orlando, FL, January 30–February 1, 2005.

GAVRIL, F. McGill University

KASPI, V.M. McGill University

WOODS, P.M. XD12

LYUTIKOV, M. University of British Columbia


GELFAND, J.D. Harvard-Smithsonian Center for Astrophysics

LYUBARSKY, Y.E. Department of Physics

EICHLER, D. Department of Physics

GAENSLER, B.M. Harvard-Smithsonian Center for Astrophysics

TAYLOR, G.B. Stanford University

GRANOT, J. Stanford University

NEWTON-MCGEE, K.J. University of Sydney/CSIRO

RAMIREZ-RUIZ, E. Institute for Advanced Study

KOUVELIOTOU, C. XD12

WIJERS, R.A.M.J. University of Amsterdam


GHOSH, K.K. Universities Space Research Association (USRA)
WU, K.  
SARIPALLI, L.  

GHOSH, K.K.  
FINGER, M.H.  
SWARTZ, D.A.  
TENNANT, A.F.  
WU, K.  

GILL, P.S.  
GARCIA, D.  
VAUGHAN, W.W.  

GITTEMEIR, K.A.  
HAWK, C.W.  
FINCKENOR, M.M.  
WATTS, E.  
Qualis Corp.  

GITTEMEIR, K.A.  
HAWK, C.W.  
FINCKENOR, M.M.  
WATTS, E.  
Qualis Corp.  

GLUCH, R.  
QUATTROCHI, D.A.  
Brigham Young University  
Pre-Launch Goes-R Risk Reduction Activities for the Geostationary Lightning Mapper—Abstract Only. For publication in American Institute of Aeronautics and Astronautics Journal of Spacecraft and Rockets.

GOODMAN, S.J. XD11
BLAKESLEE, R.J. XD11
BOCCIPPIO, D.J. XD11
CHRISTIAN, H.J. XD11
KOSHAK, W.J. XD11
PETERSEN, W.A. UAH

GORTI, S. SD46
FORSYTHE, E.L. SD46/BAE Systems
PUSEY, M.L. SD46
Kinetic Roughening and Energetics of Tetragonal Lysozyme Crystal Growth: A Preliminary Atomic Force Microscopy Investigation—Abstract Only. For publication in ACTA Crystallographica D.

GRADL, P.R. ER32
STEPHENS, W. MP21

GRANOT, J. XD31
RAMIREZ-RUIZ, E. KIPAC, Stanford University
TAYLOR, G.B. KIPAC, Stanford University/National Radio Astronomy Observatory
EICHLER, D. Ben Gurion University
LYUBARSKY, Y.E. Ben Gurion University
WIJERS, R.A.M.J. University of Amsterdam
GAENSLER, B.M. Harvard-Smithsonian Center for Astrophysics
GELFAND, J.D. Harvard-Smithsonian Center for Astrophysics
KOUVELIOTOU, C. XD12

GRANT, J. XD31

GRANT, J. XD31

GRANT, J. XD31

GREENWOOD, T. MP31
TWICHELL, W. Lockheed Martin
FERRARI, D. Lockheed Martin
KUCK, F. Boeing-Rocketdyne

GREGORY, D.A. UAH
HERREN, K.A. XD31
Ion Milling of Sapphire—Abstract Only. For publication in Electrochemical and Solid-State Letters and American Institute of Physics.

GRIFFEY, A.M. IS04

GRIFFEY, K. IS01

GRUGEL, R.N. SD46
High Tensile Strength Amalgams for In-Space Repair and Fabrication—Abstract Only. For presentation at the Continuing the Voyage of Discovery—1st Space Exploration Conference, Orlando, FL, February 2–4, 2005.


Protection of Conductive and Non-Conductive Advanced Polymer-Based Paints From Highly Aggressive Oxidative Environments—Abstract Only. For presentation at the 5th International Symposium on Polymer Surface Modification, Toronto, Canada, June 20–22, 2005.

Pyroelectric Ceramics for Infrared Detection Applications—Final Paper. For publication in Materials Science.

Comparison of Two IRI Plasmasphere Extensions With GPS–TEC Observations—Abstract Only. For presentation at and publication in the proceedings of the IRI 2005 Workshop, Roquetes, Spain, June 27–July 1, 2005.


GWALTNEY, D.A. EI22
FERGUSON, M.I. JPL

GWALTNEY, D.A. EI22
FERGUSON, M.I. JPL

GWALTNEY, D.A. EI22
DUTTON, K. Jacobs Sverdrup

GWALTNEY, D.A. EI22
BRISCOE, J.M. EI20

GWALTNEY, D.A. EI22
HAMILTON, G. EV12

HAMILTON, J.T. ET01

HAMILTON, J.T. ET01
ASM Student Technology and Career Night—Presentation. For presentation at the American Society of Materials Student Career Night, Huntsville, AL, March 29, 2005.

HAMILTON, J.T. ET01

HAMILTON, J.T. ET01
Test Laboratory 2005. For presentation at the Test Week 2005, Huntsville, AL, June 6–9, 2005.

HARMSSEN, E. XD11
LUVALL, J.C. XD11
GONZALEZ, J. XD11

HATHAWAY, D.H. XD12
WILSON, R.M. XD12

HATHAWAY, D.H. XD12

HATHAWAY, D.H. XD12
HATHAWAY, D.H. XD12
CHOWDHARY, D. California State University

HATHAWAY, D.H. XD12
WILLIAMS, P.E. University of Texas
CUNTZ, M. University of Texas

HEATON, A.F. EV40

HEDAYAT, A. ER23
NELSON, S.L. ER23
HASTINGS, L.J. Alpha Technology, Inc.
FLACHBART, R.H. ER23
TUCKER, S.P. ER23

HERALD, S.D. ICRC Aerospace Services
ENGEL, C.D. Qualis Corp.
DAVIS, S.E. EM10

HERMILLER, J. Cornerstone Research Group, Inc.
STAHL, H.P. XD30

HICKMAN, R. ER11
MIRELES, O. ER11
HOUTS, M. ER11

HISSAM, D.A. ER34
LEBERMAN, M. ER34
MCLEROY, R. ERC

HIORTH, J. University of Copenhagen
SOLLERMAN, J. University of Copenhagen/Stockholm University
GOROSABEL, J. Instituto de Astrofisica de Andalucia
GRANOT, J. Kavli Institute
KLOSE, S. Thuringer Landessternwarte
MELINDER, J. Stockholm University
RAMIREZ-RIUIZ, E. Institute for Advanced Study
STARLING, R. University of Amsterdam ET AL.

HJORTH, J. University of Copenhagen
WATSON, D. University of Copenhagen
FYNOB, J.P. University of Copenhagen
PRICE, P.A. University of Hawaii
JENSEN, B.L. University of Copenhagen
JORGENSEN, U.G. University of Copenhagen
KUBAS, D. ESO Santiago
GOROSABEL, J. Instituto de Astrofisica de Andalucia
KOUVELIOTOU, C. XD12
The Optical Afterglow of a Short Y-Ray Burst—Abstract Only. For publication in Nature.

HOLDER, D. EV50
FORT, J. Hamilton Sundstrand
BARONE, M. Hamilton Sundstrand
MURDOCH, K. Hamilton Sundstrand
HOLLINGER, G.A. Swarthmore College
BRISCOE, J.M. El21

HOOVER, R.B. XD12

HOOVER, R.B. XD12

HOUTS, M.G. NP50
BRAGG-SITTON, S.M. ER11
MIRELES, O. ER11
ET AL.

HOUTS, M.G. NP50

BOOK, M.L. EV21
Simulation and Ground Testing with the AVGS—Final Paper. For presentation at the SPIE Defense and Security Symposium, Orlando, FL, March 28–April 1, 2005.

HOWARD, R.W. SY10
In Situ Fabrication Technologies: Meeting the Challenge for Exploration—Presentation. For presentation at the National Space and Missile Materials Symposium, Las Vegas, NV, June 27–July 1, 2005.

HOWELL, J.T. FD02
FIKES, J.C. SP20
O’NEILL, M.J. Entech, Inc.
Novel Space-Based Solar Power Technologies and Architectures for Earth and Beyond—Abstract Only. For presentation at the 56th International Astronautical Congress, Fukuoka, Japan, October 17–21, 2005.

HOUTS, M.G. NP50
CARRINGTON, C.K. SP20
MANKINS, J.C. NASA Headquarters

HUEBNER, L.D. NP60
SAIYED, N.H. NASA Headquarters
SWINT, M.S. NP60
Advanced Development Projects for Constellation From the Next Generation Launch Technology Program Elements—Abstract Only. For presentation at the 56th International Astronautical Congress, Fukuoka, Japan, October 17–22, 2005.
presentation at the SAMPE Conference, Long Beach, CA, May 1–5, 2005.

HULL, M.S. Luna Innovations Inc.
TASSELL, V. Luna Innovations Inc.
PENNINGTON, C.D. Luna Innovations Inc.
ROMAN, M.C. EV52


HULL, P.V. EV11/Jacobs Sverdrup
KITTREDGE, K. EV34
TINKER, M.L. EV11
SANSOUCIE, M.P. EV11


HULL, P.V. EV11/Jacobs Sverdrup
TINKER, M.L. EV11
DOZIER, G. Auburn University


HULL, P.V. EV11/Jacobs Sverdrup
CANTFIELD, S.L. Tennessee Technological University


HYERS, R.W. University of Massachusetts
LEE, J. University of Massachusetts
BRADSHAW, R.C. University of Massachusetts
ROGERS, J.R. XD42
RATHZ, T.J. UAH
WALL, J.J. University of Tennessee
CHOO, H. University of Tennessee
LIAW, P.K. University of Tennessee


HYERS, R.W. University of Massachusetts
SANSOUCIE, M.P. EV11
PEPYNE, D. University of Massachusetts
HANLON, A.B. University of Massachusetts
DESHMUKH, A. University of Massachusetts


IGNATIEV, A. University of Houston
FREUNDLICH, A. University of Houston
ALEMU, A. University of Houston
SIBILLE, L. BAE Systems
CURRERI, P.A. XD40


ING, S.H. IS05


IRWIN, D.E. XD11
SERVER, T. XD11
GRAVES, S. UAH
HARDIN, D. UAH

SIAM-SERVER: An Environmental Monitoring and Decision Support System for Meso-america—Abstract Only. For presentation at the Lecture for the City of Knowledge, City of Knowledge Foundation, Panama City, Panama, August 18, 2005.

IRWIN, R.W. Purdue University
TINKER, M.L. EV11


JAAP, J. EO50


JAAP, J. EO50

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Event/Conference</th>
<th>Abstract/Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXWELL, T.</td>
<td>EO50</td>
<td>Detection of Tornado Damage Tracks With EOS Data—Abstract Only. For publication in the Journal of Weather and Forecasting.</td>
</tr>
<tr>
<td>STANKOV, B.</td>
<td>SD60</td>
<td>NASA In-Space Propulsion Technology Program Overview and Update—Final Paper. For presentation at the 36th Annual Division for Planetary Science (DPS), Louisville, KY, November 8–10, 2004.</td>
</tr>
</tbody>
</table>
JOHNSON, L. TD05
HARRIS, D. TD05
TRAUSH, A. TD05
MATLOFF, G.L. Gray Research/New York City College of Technology
TAYLOR, T. BAE Systems
CUTTING, K. Gray Research


JOHNSON, L. NP40
MATLOFF, G.L. Gray Research/New York City College of Technology

The Interstellar Conspiracy—Final Paper. For publication in Analog (Science-Fact Article).

JOHNSON, L. NP40
JAMES, B. NP40
BAGGETT, R. NP40
MONTGOMERY, S. NP40


JOHNSON, L. NP40
JAMES, B. NP40
BAGGETT, R. NP40
MONTGOMERY, S. NP40


JOHNSON, R.W. Auburn University
STRICKLAND, M. EI42


JONES, G. ER32
PROTZ, C. ER32
TRINH, H.P. ER32
TUCKER, P.K. ER43
NEWMAN, T. ER42
HULKA, J. Jacobs Sverdrup


JUSTUS, C.G. Morgan Research Corp.
DUVALL, A.L. Morgan Research Corp.
KELLER, V.W. EV13


KALEMCI, E. University of California
BOGGS, S.E. University of California
KOUELKOLOTOUS, C. XD12/USRA
FINGER, M.H. USRA
ET AL.


KALManson, P.C. PRAXIS, INC./ Naval Research Laboratory (NRL)
WILCZENSKI, J. Wile Instruments, LLP
WOOD, K. U.S. NRL
DYMOND, K. U.S. NRL
THONNARD, S. U.S. NRL
SPANN, J.F. XD12

The Optomechanical Design and Operation of the Ionospheric Mapping and Geocoronal Experiment—Abstract Only. For presentation at and publication in the proceedings of the SPIE Optics and Photonics, San Diego, CA, July 31–August 4, 2005.

KELLER, V.W. EV13
JOHNSON, D.L. EV13
VAUGHAN, W.W. UAH


KESTER, T.J. XD32


KHARKOVSKY, S. University of Missouri-Rolla
CASE, J.T. University of Missouri-Rolla
ABOU-KHOUSSA, M.A. University of Missouri-Rolla
ZOURGI, R. University of Missouri-Rolla
HEPBURN, E.L. EM20
Millimeter Wave Detection of Localized Anomalies in the Space Shuttle External Fuel Tank Insulating Foam—Final Paper. For publication in the Institute of Electronical and Electronics.

KHARKOVSKY, S. University of Missouri-Rolla
HEPBURN, F. EM20
WALKER, J. EM20
ZOUCHI, R. University of Missouri-Rolla


KHARKOVSKY, S. University of Missouri-Rolla
CASE, J.T. University of Missouri-Rolla
ZOUCHI, R. University of Missouri-Rolla
HEPBURN, F. EM20


KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Electrodynamic Tether as a Thruster for MXER Studies—Abstract Only. For presentation at and publication in the proceedings of the 53rd JANNAF Propulsion Meeting/2nd Liquid Propulsion Subcommittee/1st Spacecraft Propulsion Joint Meeting, Monterey, CA, December 5–8, 2005.

KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12


KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Analysis of Bare-Tether Systems as a Thruster for MXER Studies—Abstract Only. For publication in the Journal of Geophysical Research.

KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12


KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12


KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Analysis of Bare-Tether Systems as a Thruster for MXER Studies—Abstract Only. For publication in AGU Monograph.

KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Strong Pitch-Angle Diffusion of Ring Current Ions in Geomagnetic Storm-Associated Conditions—Abstract Only. For presentation at the American Geophysical Union, San Francisco, CA, November 5–9, 2005.

KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Cross-Scale Coupling in the Inner Magnetosphere—Abstract Only. For presentation at the American Geophysical Union, San Francisco, CA, December 5–9, 2005.

KHAZANOV, G.V. XD12
KRIVORUTSKY, E.N. NRC
SORENSEN, K. XD12

Do Electromagnetic Ion Cyclotron Waves Cause the Strong Pitch-Angle Diffusion of Ring Current Ions?—Abstract Only. For presentation at the American Geophysical Union, San Francisco, CA, December 5–9, 2005.
KHAZANOV, G.V. XD12
GALLagher, D.L. XD12

KHODABANDEH, J.W. EI13


KNOX, J.C. EV51
CAMPBELL, M. Hamilton Sundstrand MURDOCH, K. Hamilton Sundstrand MILLER, L. Jacobs Sverdrup JENG, F. Lockheed Martin Integrated Test and Evaluation of a 4-Bed Molecular Sieve (4BMS) Carbon Dioxide Removal System (CDRA), Mechanical Compressor Engineering Development Unit (EDU), and Sabatier Engineering Development Unit (EDU)—Final Paper. For presentation at the International Conference on Environmental Systems (ICES), Rome, Italy, July 11–14, 2005.

KOSHAk, W.J. XD11
MACH, D. M. XD11

KRIVORUTSKY, E.N. NRC

LAL, R.B. XD40
CLINTON, R.G. XD40
FRAZIER, D.O. XD40
Advanced Sensors for NASA’s Exploration Missions—Presentation. For presentation at the National Science Foundation (NSF) Workshop on Sensors, Huntsville, AL, June 7, 2005.
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Abstract/Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROSSON, W.L.</td>
<td>XD11</td>
<td></td>
</tr>
<tr>
<td>LIMAYE, A.</td>
<td>XD11</td>
<td></td>
</tr>
<tr>
<td>MANU, A.</td>
<td>XD11</td>
<td></td>
</tr>
<tr>
<td>ARCHER, F.</td>
<td>XD11</td>
<td></td>
</tr>
<tr>
<td>GANGOPADHYAY, A.K.</td>
<td>Washington University</td>
<td></td>
</tr>
<tr>
<td>KELTON, K.F.</td>
<td>Washington University</td>
<td></td>
</tr>
<tr>
<td>BRADSHAW, R.C.</td>
<td>University of Massachusetts</td>
<td></td>
</tr>
<tr>
<td>HYERS, R.W.</td>
<td>University of Massachusetts</td>
<td></td>
</tr>
<tr>
<td>RATHZ, T.J.</td>
<td>UAH</td>
<td></td>
</tr>
<tr>
<td>ROGERS, J.R.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>ROBINSON, D.S.</td>
<td>Ames Laboratory USDAOE/Iowa State University</td>
<td></td>
</tr>
<tr>
<td>KELTON, K.F.</td>
<td>Washington University</td>
<td></td>
</tr>
<tr>
<td>GOLDMAN, A.I.</td>
<td>Ames Laboratory USDAOE/Iowa State University</td>
<td></td>
</tr>
<tr>
<td>BRADSHAW, R.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>ROGERS, J.R.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>RATHZ, T.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>WALL, J.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>CHOO, H.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>LIAW, P.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>LEEMKUEHLER, T.O.</td>
<td>Honeywell, Inc.</td>
<td></td>
</tr>
<tr>
<td>REEVEY, D.R.</td>
<td>The Boeing Company</td>
<td></td>
</tr>
<tr>
<td>HOLT, J.M.</td>
<td>EV34</td>
<td></td>
</tr>
<tr>
<td>LEOPARD, L.</td>
<td>ER30</td>
<td></td>
</tr>
<tr>
<td>LESLIE, F.W.</td>
<td>XD42</td>
<td></td>
</tr>
<tr>
<td>LEVAN, A.</td>
<td>University of Leicester/Space Telescope Science Institute</td>
<td></td>
</tr>
<tr>
<td>FRUCHTER, A.</td>
<td>Space Telescope Science Institute</td>
<td></td>
</tr>
<tr>
<td>RHOADS, J.</td>
<td>Space Telescope Science Institute</td>
<td></td>
</tr>
<tr>
<td>MOBASHER, B.</td>
<td>Space Telescope Science Institute</td>
<td></td>
</tr>
<tr>
<td>TANVIR, N.</td>
<td>University of Hertfordshire</td>
<td></td>
</tr>
<tr>
<td>GOROSABEL, J.</td>
<td>Space Telescope Science Institute</td>
<td></td>
</tr>
<tr>
<td>ROL, E.</td>
<td>University of Hertfordshire/University of Amsterdam</td>
<td></td>
</tr>
<tr>
<td>KOUVELIOTOU, C.</td>
<td>XD12</td>
<td></td>
</tr>
<tr>
<td>DELL’ANTONIO, I.</td>
<td>Brown University/National Optical Astronomy Observatory</td>
<td></td>
</tr>
<tr>
<td>ET AL.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LEWIS, R.A.
ROBERTSON, G.A.


LI, C.
SU, C-H.
LEHOCZKY, S.L.
SCRIPA, R.N.
BAN, H.
LIN, B.


LI, C.
SU, C-H.
LEHOCZKY, S.L.
SCRIPA, R.N.
BAN, H.
LIN, B.

Impurity Studies of Cd0.8Zn0.2Te Crystals Using Photoluminescence and Glow Discharge Mass Spectroscopy—Abstract Only. For presentation at the 16th American Conference on Crystal Growth and Epitaxy, Big Sky, MT, July 10–15, 2005.

LI, C.
SU, C-H.
LEHOCZKY, S.L.
SCRIPA, R.N.


LIN, C.
SU, C-H.
LEHOCZKY, S.L.
SCRIPA, R.N.
BAN, H.


LIN, B.
LI, C.
LIN, C.

LIN, Z-W.
ADAMS, J.H.


LUVALL, J.C.
RICKMAN, D.L.
QUATTROCHI, D.A.
ESTES, M.E.


MAASHA, R.
GRADL, P.R.
KINNEY, T.
LAVEDE, B.
PECK, J.

Space Shuttle Main Engine Testing and Analysis Approach to External Debris Environments—Abstract Only. For presentation at the 53rd JPM/2nd LPS/SP Joint Meeting—JANNAF, Monterey, CA, December 5–8, 2005.

MACLEOD, T.C.
PHILLIPS, T.A.
HO, F.D.

Characteristics of Ferroelectric Logic Gates Using a Spice-Based Model—Abstract Only. For presentation at the International Meeting on Ferroelectricity, Foz do Igacu, Brazil, September 5–9, 2005, and publication in the Ferroelectrics Journal.

MAJUMDAR, A.
COLE, H.
CHEN, C.P.


MANDELL, M.J.
KUHARSKI, R.A.
GARDNER, B.M.
KATZ, I.
RANDOLPH, T.
DOUGHERTY, R.


MARKUSIC, T.E.
ESKRIDGE, R.H.
FIMOGNARI III, P.H.
KOELFGEN, S.J.
LEE, M.H.


MARTIN, A.K.
MARKUSIC, T.E.
MANKINS, J.C.
HOWELL, J.T.
MANKINS, J.C.
HADID, A.
LIN, P.
BALCAZAR, D.
RAI, M.M.
DORNEY, D.J.


MARTIN, A.K.
MANKINS, J.C.
HUANG, S.
GILL, K.
LIU, W.

Ion Engine Plume Interaction Calculations for Prototypical Prometheus I—Final Paper. For presentation at the 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005.

MANKINS, J.C.
HOWELL, J.T.


MARCU, B.
HADID, A.
LIPES, P.
BALCAZAR, D.
RAI, M.M.
DORNEY, D.J.


MARKUSIC, T.E.
POLZIN, K.A.


MARTIN, A.K.
MARKUSIC, T.E.
MANKINS, J.C.
HOWELL, J.T.
MANKINS, J.C.
HADID, A.
LIN, P.
BALCAZAR, D.
RAI, M.M.
DORNEY, D.J.


MARTIN, A.K. XD22
ESKRIDGE, R.H. XD22
FIMOGNARI III, P.J. UAH

MARTIN, A.K. XD22
ESKRIDGE, R.H. XD22
LEE, M. XD22
FIMOGNARI III, P.H. UAH

MARTIN, J.J. ER11
REID, R.S. ER11

MATLIK, J.F. Rolls Royce Corp.
FARRIS, T.N. Purdue University
HAYNES, J. United Technologies Corp.
SWANSON, G.R. EM20
HAM-BATTISTA, G. Jacobs Sverdrup

MATLIK, J.F. Rolls Royce Corp.
FARRIS, T.N. Purdue University
HAAKE, F.K. United Technologies Corp.
SWANSON, G.R. EM20
DUKE, G.C. Jacobs Sverdrup

MATLOFF, G.L. Gray Research/New York City College of Technology
JOHNSON, L. NP40
Applications of the Electrodynamic Tether to Interstellar Travel—Final Paper. For publication in the Journal of the British Interplanetary Society.

MATLOFF, G.L. Gray Research/New York City College of Technology
JOHNSON, L. NP40
Applications of the Electrodynamic Tether to Interstellar Travel—Final Paper. For publication in the Journal of the British Interplanetary Society.

MARTIN, J.J. ER11
REID, R.S. ER11
MCRIGHT, P.S.  
POPP, C.  
PIERCE, C.  
TURPIN, A.A.  
URBANCHOCK, W.  
WILSON, M.  
Aerojet  

MCRIGHT, P.S.  
SHEEHY, J.A.  
BLEVINS, J.A.  

MEDLEY, S.  
BROWN, A.  
FRADY, G.  
SMALLEY, K.  

MIERNIK, J.H.  
OWENS, J.E.  
FLOYD, B.A.  
STRONG, J.O.  
SANFORD, J.  
ERC, Inc.  
Allied Aerospace  
Morgan Research Corp.  
EI12  
Reuse of International Space Station (ISS) Modules as Lunar Habitat—Abstract Only. For presentation at the 1st Space Exploration Conference, Orlando, FL, January 30–February 1, 2005.

MILTON, M.E.  
CHRISTL, M.  
SX10  

MILTON, M.E.  
SX10  

MINOR, J.L.  
NEWTON, R.  
ED03  
NP60  
An Overview of Program Developments for NASA's Space Environments and Effects (SEE) Program—Final Paper.

MOONEY, J.T. UAH


MOORE, R.L. XD12
STERLING, A.C. XD12
FALCONER, D.A. XD12
DAVIS, J.M. XD12


MOORE, R.L. XD12
STERLING, A.C. XD12
FALCONER, D.A. XD12
DAVIS, J.M. XD12


MOORE, R.E. EM10
SCOTT, J.P. EM10
WISE, H. EM10

Considerations for Storage of High-Test Hydrogen Peroxide (HTP) Utilizing Non-Metal Containers—Abstract Only. For presentation at the 8th International Hydrogen Peroxide Propulsion Conference, West Layfayette, IN, September 18–22, 2005.

MOORE, R.L. XD12
STERLING, A.C. XD12
FALCONER, D.A. XD12
GARY, G.A. XD12


MOORE, R.L. XD12
STERLING, A.C. XD12


MORRIS, C.I. XD22


MORRISON, R.H. The Boeing Company

HOLT, J.M. EV34

MOUSCHON, B. Jacobs Sverdrup

MCDUFFEE, P. ED03

MULDER, A.D. ER42
SUBBARAMAN, M.R. Boeing-Rocketdyne
LARIVIERE, B.W. Boeing-Rocketdyne


MURDOCH, K. Hamilton Sundstrand Space Systems International, Inc.

GOLDBLATT, L. Hamilton Sundstrand Space Systems International, Inc.

CARRASQUILLO, R.L. EV50
HARRIS, D. SV10


NALETTE, T. Hamilton Sundstrand
REISS, J. Hamilton Sundstrand
FILBURN, T. University of Hartford
SEERY, T. University of Connecticut
WEISS, B. University of Connecticut
SMITH, F. EV51
PERRY, J. EV51

NALL, M. SR10

NERNEY, S. SD50
SUSS, S.T. SD50

NEUMANN, B. HQS
MCMILLAN, V. EDO3

NGUYEN, H. The Boeing Company
CHANDLER, F. The Boeing Company
MAZURKIVICH, P. NP60

NIELSEN, D. ATK Thiokol Inc.
TOWNSEND, J. ED21
KAPPUS, K. ED21
DRISKILL, T. ED21
TORRES, I. ED21
PARKS, R. ED21

NISHIKAWA, K.I. University of Alabama/Tuscaloosa

RICHARDSON, G. UAH
SOL, H. LUTH
PREECE, R. UAH
FISHMAN, G.J. XD12

NIKISHIKAWA, K.I. University of Alabama/Tuscaloosa
HARDEE, P. University of Alabama/Tuscaloosa
HEDEDAL, C.B. Niels Bohr Institute/Department of Astrophysics
RICHARDSON, G. UAH
SOL, H. LUTH
PREECE, R. UAH
FISHMAN, G.J. XD12
Particle Acceleration, Magnetic Field Generation in Relativistic Shocks—Abstract Only. For presentation at and publication in the proceedings of the International Workshop on Particles and Radiation From Cosmic Accelerators, Chiba, Japan, March 2–4, 2005.

NISHIKAWA, K.I. University of Alabama/Tuscaloosa
RAMIREZ-RUIZ, E. Institute for Advanced Study
HARDEE, P. University of Alabama/Tuscaloosa
HEDEDAL, C.B. Niels Bohr Institute/Department of Astrophysics
KOUVELIOTOU, C. XD12
FISHMAN, G.J. XD12
Particle Acceleration, Magnetic Field Generation, and Emission in Relativistic Pair Jets—Abstract Only. For presentation at and publication in the proceedings of the Astrophysical Sources of High-Energy Particles and Radiation, Torun, Poland, June 20–24, 2005.


OELGOETZ, P. Boeing Rocketdyne Propulsion and Power
GRADL, P.R. ER32
BRYANT, M. Madison Research Corp.
DANIEL, R. Boeing Rocketdyne
WOFFORD, S. MP21
Systematic Improvements in Leak Detection and Repair Techniques of the Space Shuttle Main Engine Nozzle—Abstract Only. For presentation at the 53rd JPM/2nd LPS/SP Joint Meeting—JANNAF, Monterey, CA, December 5–8, 2005.

OLIVER, S.T. EV31
Analysis of a Circular Composite Disk Subjected to Edge Rotations and Hydrostatic Pressure—Final Paper. Thesis to be presented to the Department of Mechanical and Aerospace Engineering, UAH, Huntsville, AL, October 2004.

OSTROGORSKY, A. Rensselaer Polytechnic Institute
MARIN, C. Rensselaer Polytechnic Institute
VOLZ, M.P. XD42
BONNER, W.A. Crystallod, Inc.

OVERBEY, B.G. Raytheon
ROBERTS, B.C. ED44

PALOSZ, W. SD42/BAE Systems
VOLZ, M.P. SD46
COBB, S. SD46
MOTAKEF, S. Cape Simulations, Inc.
SZOFRAN, F.R. SD46

PALOSZ, W. SD42/BAE Systems
Vapor Transport of ZnO in Closed Ampoules—Abstract Only. For publication in the Journal of Crystal Growth.

PARIS, D. NAFP—Clark Atlanta
TREVINO, L.C. EV23
WATSON, M.D. EV23

PARKER, L.N. ED44/Jacobs Sverdrup
DAVIS, V.A. SAIC
GARDNER, B.M. SAIC
MANDELL, M.J. SAIC
MINOW, J.I. EV13

PARKER, L.N. ED44/Jacobs Sverdrup
MINOW, J.I. EV13
DAVIS, V.A. SAIC
GARDNER, B.M. SAIC
MANDELL, M.J. SAIC
Analysis of Surface Charging for a Candidate Solar Sail Mission Using NASCAP–2K—Abstract Only. For presentation at the 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005.
Analysis of Surface Charging for a Candidate Solar Sail Mission Using NASCAP–2K—Final Paper. For presentation at the 9th Spacecraft Charging Technology Conference, Tsukuba, Japan, April 4–8, 2005.

PARKER, L.N. ED44/Jacobs Sverdrup
MINOW, J.I. EV13
DAVIS, V.A. SAIC
MANDELL, M.J. SAIC
GARDNER, B.M. SAIC


PATRICK, M.P. ED12
COOPER, A.E. ED12
POWERS, W.T. ED12


PEARSON, J.B. XD21
LEWIS, R.A. R Lewis Company


PEARSON, J.B. XD21
LEWIS, R.A. R Lewis Company


PERRY, J.L. EV51


PERRY, J.L. EV51
TOMES, K.M. EV51
ROYCHOUHDURY, S. Precision Combustion, Inc.
TATARA, J.D. Qualis Corp.


PETERSEN, W.A. XD11
KNUPP, K. XD11
WALTERS, J. XD11
DEIERLING, W. XD11
GAUTHIER, M. XD11
DOLAN, B. XD11
DICE, J.P. XD11
SATTERFIELD, D. XD11
DAVIS, C. XD11
ET AL.


PHILLIPS, T.A. EI52
MACLEOD, T.C. EI52
HO, F.D. uAH

Modeling of a Metal-Ferroelectric-Semiconductor Field-Effect Transistor Nand Gate—Abstract Only. For presentation at the 11th International Meeting on Ferroelectricity, Foz do Iguacu, Brazil, September 5–9, 2005, and to be published in the Ferroelectrics Journal.

PICON, A.J. uPRM
VASQUEZ, R. UPRM
GONZALEZ, J.E. Santa Clara University
LUVALL, J.C. XD11
RICKMAN, D.L. XD11


PIKUTA, E.V. XD12
ITOH, T. RIKEN BioResource Center
HOOVER, R.B. XD12

Anaerobic Decomposition of Cellulose by Alkaliphilic Microbial Community of Owens Lake, California—
Abstract Only. For presentation at and publication in the proceedings of The International Symposium of Optical Science and Technology 50th Annual Meeting—Instruments, Methods, and Missions for Astrobiology IX, San Diego, CA, July 31–August 4, 2005.

PITTMAN, J.V. XD11/USRA
FUEGLISTALER, S. University of Washington
MILLER, T.L. XD11
WEINSTOCK, E.M. Harvard University

PITTMAN, J.V. XD11/USRA
ROBERTSON, F.R. XD11
MILLER, T.L. XD11

POLZIN, K.A. XD20
MARKUSIC, T.E. XD20

POLZIN, K.A. XD20
MARKUSIC, T.E. XD20
RAITSES, Y. Princeton University
SMIRNOV, A. Princeton University
FISCH, N.J. Princeton University

POLZIN, K.A. XD20
MARKUSIC, T.E. XD20
Galium Electromagnetic (GEM) Thruster Concept and Design—Abstract Only. For presentation at the 53rd JANNAF Propulsion Meeting/2nd Liquid Propulsion Subcommittee/1st Spacecraft Propulsion Joint Meeting, Monterey, CA, December 5–8, 2005.

POLZIN, K.A. XD20
MARKUSIC, T.E. XD20
STANOJEV, B.J. ER11
DEHOYOS, A. ER11
RAITSES, Y. Princeton University
SMIRNOV, A. Princeton University
FISCH, N.J. Princeton University

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

POOLE, E. XD21
MYRABO, L.N. Rensselaer Polytechnic Institute

QUATTROCHI, D.A. XD11
ESTES, JR., M.G. XD11
CROSSON, W.L. XD11
KHAN, M. Georgia Environmental Protection Division

QUATTROCHI, D.A. XD11
NISKAR, A.S. Centers for Disease Control and Prevention

RAMACHANDRAN, N. XD42

RAMACHANDRAN, N. XD42
Space Laboratory on a Table Top — A Next Generation ECLSS Design and Diagnostic Tool — Abstract Only. For presentation at the 35th International Conference on Environmental Systems (ICES), Rome, Italy, July 11–14, 2005.

RAMACHANDRAN, N. XD42

RAMACHANDRAN, N. XD42

LESLIE, F.W. XD42

RAMPINI, R. Alenia Spazio S.p.A.
LOBASCIO, C. Alenia Spazio S.p.A.
PERRY, J.L. EADS SPACE TRANSPORTATION GMGH

RAMSEY, B.D.XD12

RAMSEY, B.D. XD12

RAY, C.S. Intelligent Optical Systems
MALAK, H. American Environmental Systems, Inc.
BISHOP, A. UAH
CISZAK, E. UAH
RICHMOND, R.C. XD42

RAY, C.S. XD42
REIS, S.T. University of Missouri-Rolla
BROW, R.K. University of Missouri-Rolla
HOLAND, W. Ivoclar Vivadent AG
RHEINERGER, V. Ivoclar Vivadent AG

RAY, C.S. XD42
SEN, S. XD42/BAE Systems
REIS, S.T. University of Missouri-Rolla
KIM, C.W. University of Missouri-Rolla

RAY, C.S. XD42
REIS, S.T. University of Missouri-Rolla
SENE, F.F. Energy and Nuclear Research Institute
YANG, J.B. University of Missouri-Rolla
PONTUSCHKA, W.M. Physics Institute
GIEHL, J.M. Physics Institute
KIM, C.W. University of Missouri-Rolla
SEN, S. XD42/BAE Systems


RICHARDSON, E.H. NP40
MUNK, M.M. NP40
JAMES, B.F. NP40
MOON, S.A. Gray Research

Review of NASA In-Space Propulsion Technology Program Inflatable Decelerator Investments—Final paper. For presentation at the 18th AIAA Aerodynamic Decelerator Technology Conference and Seminar, Munich, Germany, May 23–26, 2005.

RICHMOND, R.C. XD42


RISON, W. New Mexico Institute of Mining and Technology

KREHBIEL, P.R. New Mexico Institute of Mining and Technology

GOODMAN, S.J. XD11
MACGORMAN, D.R. New Mexico Institute of Mining and Technology


ROBERTS, L. MP01


ROBERTSON, B. EI31
WILKerson, D. EI31


ROBERTSON, B. EI31
WILKerson, D. EI31


ROBERTSON, F.R. XD11
WICK, G. NOAA/Environmental Technology Laboratory
BOSIOLOVICH, M.G. NASA Goddard Space Flight Center


ROBERTSON, F.R. XD11
LU, H.-I. USRA


ROBERTSON, F.R. XD11

Interannual Variability of Tropical Rainfall as Seen from TRMM—Abstract Only. For presentation at and publication in the proceedings of the 5th International Scientific Conference on the Global Energy and Water Cycle, Orange County, CA, June 18–24, 2005.

ROBERTSON, F.R. XD11

Interannual Variability of Tropical Rainfall as Seen from TRMM—Abstract Only. For presentation at the 86th AMS Annual Meeting, 14th Conference on Satellite Meteorology and Oceanography, Atlanta, GA, January 29–February 2, 2006.

ROBERTSON, F.R. XD11
WICK, G. NOAA/Environmental Technology Laboratory
JACKSON, D. NOAA/Environmental Technology Laboratory
BOSIOLOVICH, M.G. NASA Goddard Space Flight Center

ROBERTSON, G.A. XD21

ROBINSON, P.J. Aerojet
VEITH, E.M. Aerojet
TURPIN, A.A. ER23

ROCKER, M. ER43
Steady-State CFD Simulations of the Modular Combustor Test Article—Abstract Only. For presentation at the 53rd JANNAF Propulsion Meeting/2nd Liquid Propulsion Subcommittee/Space Propulsion Joint Meeting, Monterey, CA, December 5–8, 2005.

RODRIGUEZ, H. The Boeing Company
POPP, C. ER23
REHAGEN, R.J. The Boeing Company

RODRIGUEZ, H. The Boeing Company
POPP, C. ER23

ROLIN, T.D. EI42
HAMMOND, M. SY10
In Situ Fabrication Technologies—Abstract and Presentation. For presentation at the UC Berkeley, University of California, Berkely, CA, May 17, 2005.

ROBINSON, J.M. NP22
MEACHAM, S.B. NP23
KRUPP, D.R. EV12
THREET, G.E. NP12
BEST, J. EO04
Resistively Heated Microlith-Based Adsorber for Carbon Dioxide and Trace Contaminant Removal—Final Paper.

DAVIS, S.R. NASA Headquarters
CRUMBLY, C. NP01
OLSEN, R.A. Morgan Research Corp.
ENGLEHR, L.M. Morgan Research Corp.


ROMAN, M.C. WIELAND, P.O. Wieland Service

RODRIGUEZ, H. EV51
MACUCH, P. Altran Corp.
MCKRELL, T. Altran Corp.
VAN DER SCHIJFF, O.J. CorrConsult
MITCHELL, R. Harvard University

ROSSIGNOL-STRICK, M. Musee National d’Histoire Naturelle, Paris
HOOVER, R.B. XD12
JERMAN, G. XD12
The Hollow Spheres of the Orgueil Meteorite: A Reexamination—Abstract Only. For presentation at and publication in the proceedings of The International Symposium of Optical Science and Technology 50th Annual Meeting—Instruments, Methods, and Missions for Astrobiology IX; San Diego, CA, July 31–August 4, 2005.

ROTHSCHILD, W.J. Boeing
BAILEY, D.A. Boeing
HENDERSON, E.M. NASA Johnson Space Center
CRUMBLY, C. NP70

Resistively Heated Microlith-Based Adsorber for Carbon Dioxide and Trace Contaminant Removal—Final Paper.
RUSSELL, C.K. Mt. GERMAN, F.R. 
Welding in Space—Lessons Learned for Future In Space Repair Development—Abstract Only. For presentation at the National Space and Missile Materials Symposium, Summerlin, NV, June 27–July 1, 2005.

SAFIE, F.M. NGUYEN, S.C. BURLESON, K.W. 

SANDERS, J. SCHNEIDER, J. NUNES, JR., A.C. 

SANSOUCIE, M.P. HULL, P.V. IRWIN, R.W. PATTON, B.W. 

SANSOUCIE, M.P. HULL, P.V. TINKER, M.L. 

SANSOUCIE, M.P. TINKER, M.L. HYERS, R.W. HULL, P.V. KITTREDGE, K. 
SEN, S. XD42/BAE Systems

SCHOFIELD, E. Plasma Processes, Inc.

O’DELL, S. Plasma Processes, Inc.

RAY, C.S. XD42


SEVER, T.L. SD60

SATURNO, W. SD60


SHAH, S. EM30


SHAH, S. EM30

JERMAN, G. EM30


SHELDON, R.B. UAH

HOOVER, R.B. XD12


SHIBAKOV, A. Tennessee Technological University

HULL, P.V. EV11

CANFIELD, S.L. Tennessee Technological University

TINKER, M. EV11


SHERIF, D.E. Honeywell International

KNOX, J.C. EV51


SHELDON, R.B. UAH

HOOVER, R.B. XD12


SHELTON, J.D. NP20

FREDERICK, R.A. UAH

WILHITE, A.W. The Georgia Institute of Technology


SHELTON, J.D. NP20

Launch Vehicle Propulsion Parameter Design Multiple Selection Criteria—Dissertation. For presentation at the Department of Mechanical and Aerospace Engineering, UAH, Huntsville, AL.

SHRESTHA, S. University of Missouri-Rolla

KHARKOVSKY, S. University of Missouri-Rolla

ZOUGHI, R. University of Missouri-Rolla

HEPBURN, F.L. EM20


SIBILLE, L. BAE Systems

Present Status of Lunar Regolith Simulants, Workshop Overview and Objectives—Abstract Only. For presenta-

SMITHERMAN, D.V. 

SNELL, E.H. 
Macromolecular Crystallization in Microgravity—Abstract Only. For publication in Reports on Progress in Physics.

SPANN, J.F. 

SPANN, J.F. 

SPANN, J.F. 
Laboratory Investigation of Space and Planetary Dust Grains—Abstract Only. For presentation at the Institute of Planetary Science at the University of Muenster, Muenster, Germany, June 6–12, 2005.

SPANN, J.F. 

SPANN, J.F. 
Future Directions for ITM Imaging—Abstract Only. For presentation at and publication in the proceedings of the 2005 Fall American Geophysical Union, San Francisco, CA, December 5–9, 2005.

STAHL, H.P. 

STAHL, H.P. XD30

STERLING, A.C. XD12
MOORE, R.L. XD12

STERLING, A.C. XD12
MOORE, R.L. XD12

STERLING, A.C. XD12
BEMPORAD, A. XD12
MOORE, R.L. XD12
POLETTO, G. INAF

STERLING, A.C. XD12

STERLING, A.C. XD12
MOORE, R.L. XD12

STORRIE-LOMBARDI, M.C. Kinohi Institute
HOOVER, R.B. XD12

SU, C-H. XD42
Composition, Temperature, Partial Pressures Data for Cd0.8Zn0.2Te by Optical Absorption Measurements—Abstract Only. For publication in the Journal of Crystal Growth.

SUESS, S.T. XD12
NERNEY, S. XD12

SUESS, S.T. XD12
POLETTO, G. INAF

SUSS, S.T. XD12
COOKE, W.J. EV13
MCNAMARA, H.A. EV13

SULLIVAN, D. XD11
SHAW, J. XD11
RICKMAN, D.L. XD11
SULLIVAN, D. XD11
SHAW, J.N. XD11
RICKMAN, D.L. XD11
MASK, P.L. XD11
LUVALL, J.C. XD11

SWIFT, W.R. EV13/Raytheon
SUGGS, R.M. EV13
COOKE, W.J. EV13

TAYLOR, G.B. Kavli Institute of Particle Astrophysics and Cosmology/National Radio Astronomy Observatory
GAENSLER, B.M. Harvard-Smithsonian Center for Astrophysics
GRANOT, J. Kavli Institute of Particle Astrophysics and Cosmology
KOVELIOTOU, C. ET AL.

THOMAS, F. EV32
THOMAS, C. International Space Systems, Inc.
PERRELL, E. ERAU
LIRON, C. ERAU
CHIROUX, R. SAIC
CASSIBRY, J. UAH
ADAMS, R.B. NP10

THOMAS, F. ZHAO, Y. Embry-Riddle Aeronautical University

TIRADO-CASTRO, A.J. IAA–CSIC
MOLLER, P. European Southern Observatory
SEGURA-GARCIA, G. Instituto de Astronomia
GOROSABEL, J. Instituto de Astrofisica de Andalucia
PEREZ, E. Instituto de Astrofisica de Canarias
POSTIGO, A. Instituto de Astrofisica de Canarias
SOLANO, E. Laboratorio de Astrofisica de Andalucia
NAVASCUES, D. Laboratorio de Astrofisica de Andalucia
CERON, J. Space Telescope Science Institute
New Fiber Reinforced Waterless Concrete for Extraterrestrial Structural Applications—Abstract Only. For presentation at the Twelfth International Conference on Composites/Nano Engineering, Tenerife, Canary Islands, Spain, August 1–6, 2005.

TOUTANJII, H. UAH
TUCKER, D. XD31
ETHRIDGE, E. XD31

TOUTANJII, H. MEYERS, C. EV31
CRUMBLEY, T. EV23

TREVINO, L.C. EV23
Software for Intelligent System Health Management—Presentation. For presentation at the Software for Intelligent System Health Management (ISHM) Briefing for Alabama A&M Engineering Department, Normal, AL, October 29, 2004.

TREVINO, L.C. EV23
Software for Intelligent System Health Management—Presentation. For presentation at the Software for Intelligent
System Health Management (ISHM) Briefing for Georgia Tech, Intelligent Controls Laboratory, Atlanta, GA, December 22, 2004.

TRINH, H.P. ER32
CHEN, C.P. UAH

TRINH, H.P. ER32
CHEN, C.P. UAH
BALASUBRAMANYAM, M.S. UAH

TUCKER, P.K. ER43
PAL, S. Pennsylvania State University
SANTORO, R. Pennsylvania State University

TURNER, M.W. UAH
HAWK, C.W. UAH
LITCHFORD, R.J. XD20

TURNER, S. NP30
SPANYER, K. NP30

TURNER, S. NP30
SPANYER, K. NP30

UBERTINI, P. IASF/INAF
BAZZANO, A. IASF/INAF

VALENTE, P.G. EM40
LAWRENCE, T.W. EM40
GUBERT, M.K. Jacobs Sverdrup
MILOS, F.S. NASA Ames Research Center
LEVINE, S.R. NASA GRC
OHLHORST, C.W. NASA Langley Research Center
KOENIG, J.R. Southern Research Institute

VALENTE, P.G. EM40
LAWRENCE, T.W. EM40
GUBERT, M.K. Jacobs Sverdrup
FLYNN, K.C. EM40
MILOS, F.S. NASA Ames Research Center
KISER, J.D. NASA GRC
OHLHORST, C.W. NASA Langley Research Center
KOENIG, J.R. Southern Research Institute

VARNAVAS, K. EI31

VARNAVAS, K. EI31


Materials and Processes Laboratory Core Capabilities Overview—Presentation. For presentation at the Alcan Workshop, Issoire, France, June 15–23, 2005.


WANG, T-S. ER43

WANG, T-S. ER43
FOOTE, J.P. ER43
LITCHFORD, R.J. ER43

WATSON, M.D. EV23
ASHLEY, P.R. U.S. Army AMRDEC
GUENTHNER, A.J. Naval Air Warfare Center
ABUSHAGUR, A.G. Kate Gleason College of Engineering

WATSON, M.D. EV23

WATTS, J. XD12
ADAMS, J.H. XD12
BASHINDZHAGYAN, G.L. Moscow State University
BATKOV, K.E. Moscow State University
CHANG, J. Max Planck Institute for Aeronomie
CHRISTL, M. XD12
FAZELY, A.R. Southern University
GANEL, O. Southern University
GUINASINGHA, R.M. Southern University
ET AL.
Simulation of the ATIC–2 Silicon Matrix for Protons and Helium GCR Primaries at 0.3, 10, and 25 TeV/Nucleon—Abstract Only. For presentation at the 29th International Cosmic Ray Conference/Tata Institute of Fundamental Research, Pune, India, August 3–10, 2005.

WEEFEL, J.P. Louisiana State University
ADAMS, J.H. XD12
AHN, H.S. University of Maryland
BASHINDZHAGYAN, G.L. Moscow State University
BATKOV, K.E. Moscow State University
CHANG, J. Max Planck Institute for Solar System Research/Purple Mountain Observatory
CHRISTL, M. XD12
FAZELY, A.R. Southern University
GANEL, O. University of Maryland
ET AL.

WEISSKOPF, M.C. XD12
TANANBAU, H. SD50

WEISSKOPF, M.C. XD12
TANANBAU, H. SD50

WEISSKOPF, M.C. XD12
Five Years of Observations With the Chandra X-Ray Observatory—Abstract Only. For publication in Space Research Today.

WEISSKOPF, M.C. XD12
The First Chandra Field: The Discovery and Identification of Leon X–1—Abstract Only. For presentation at the Six Years of Science With Chandra Symposium, Cambridge, MA, November 2–4, 2005.

WEEKS, D.J. NP60
WALKER, S.H. Defense Advanced Research Projects Agency
SACKHEIM, R.L. NP60
WEST, E.A. XD12
PORTER, J.G. XD12
DAVIS, J.M. XD12
GARY, G.A. XD12
KOYAYASHI, K. XD12
NOBLE, M. XD12

MSFC ABSTRACTS, ARTICLES, PAPERS, AND PRESENTATIONS CLEARED FOR DISSEMINATION
(Publicly available. Dates are conference dates.)
The Solar Ultraviolet Magnetograph Investigation: Polarization Properties—Abstract Only. For presentation at and publication in the proceedings of the SPIE Optics and Photonics, San Diego, CA, July 31–August 4, 2005.

WEST, E.A. XD12
NOBLE, M. XD12
CHOU DHARY, D.P. XD12

Large Field-of-View KD*P Modulator for Solar Polarization Measurements—Abstract Only. For presentation at and publication in the proceedings of the SPIE Optics and Photonics, San Diego, CA, July 31–August 4, 2005.

WEST, E.A. XD12
KOBAYASHI, K. XD12
NOBLE, M. XD12

Polarization Measurements in the Vacuum Ultraviolet—Abstract Only. For presentation at and publication in the proceedings of the SPIE Optics and Photonics, San Diego, CA, July 31–August 4, 2005.

WEST, E.A. XD12

Using the EXIST Active Shields for Earth Occultation Observations of X-Ray Sources—Abstract Only. For presentation at and publication in the proceedings of the 22nd Texas Symposium on Relativistic Astrophysics, Stanford University, December 13–17, 2004.

WILSON, C.A. SD50
FISHMAN, G.J. XD12
HONG, J-S. CFA
GRINDLAY, J. CFA

KRAWCZYNSKI, H. Washington University


WILSON, C.A. XD12
FABREGAT, J. Universitat de Valencia
COBURN, W. University of California at Berkeley


WILSON, C.A. XD12
FABREGAT, J. Universitat de Valencia
COBURN, W. University of California at Berkeley


WOODCOCK, G.R. Gray Research, Inc.
BYERS, D. SAIC
ALEXANDER, L.A. TD05
KREBSBACH, A. TD05

Thermodynamic Conditions Favorable to Superlative Thunderstorm Updraft, Mixed Phase Microphysics, and Lightning Flash Rate—Abstract Only. For publication in the Atmospheric Research Special Issue.

WILLIAMSEN, J.E. Institute for Defense Analyses
EVANS, S.W. EM50


WILSON, C.A. XD12
WEISSKOPF, M.C. XD12
FINGER, M.H. XD12/USRA
COE, M.J. School of Physics and Astronomy
GREINER, J. Max-Planck-Institute
REIG, P. University of Crete
PAPAMASTORAKIS, G. University of Crete


WILSON, C.A. XD12
FISHMAN, G.J. XD12
HONG, J-S. SD50
GRINDLAY, J. SD50


WILSON, C.A. SD50
FISHMAN, G.J. XD12
HONG, J-S. CFA
GRINDLAY, J. CFA

KRAWCZYNSKI, H. Washington University


WILSON, C.A. XD12
FABREGAT, J. Universitat de Valencia
COBURN, W. University of California at Berkeley


WILSON, C.A. XD12
FABREGAT, J. Universitat de Valencia
COBURN, W. University of California at Berkeley

KASPI, V.M. McGill University/Canada Research
ROBERTS, M.S.E. McGill University
IBRAHIM, A. George Washington University
MARKWARDT, C.B. GSFC
SWANK, J.H. GSFC
FINGER, M.H. USRA/XD12

X-Ray Bursts from the Transient Magnetar Candidate
XTE J1810–197—Abstract Only. For publication in the

YANG, B-J. Georgia Institute of Technology
CALISE, A.J. Georgia Institute of Technology
CRAIG, J.I. Georgia Institute of Technology
WHORTON, M.S. EV42

Adaptive Control for Microgravity Vibration Isolation
System—Final Paper. For presentation at the 2005 AIAA
Guidance, Navigation, and Control Conference, San Fran-
cisco, CA, August 15–18, 2005.

ZAVLIN, V.E. XD12/NRC

XMM-Newton Observations of Four Millisecond Pul-
sars—Abstract Only. For publication in The Astrophysical
Journal.

ZHANG, T. University of Missouri-Rolla
REIS, S.T. University of Missouri-Rolla
BROW, R.K. University of Missouri-Rolla
RAY, C.S. XD2

Crystallization Studies of SOFC Sealing Glasses—Abstract
Only. For presentation at the 30th International Conference
and Exposition on Advanced Ceramics and Composites,

ZOLADZ, T.F. ER42
SZABO, R.J. Rocketdyne
CASIANO, M.J. ER42
TYLER, T.R. ER42

Characterization of Acoustics in Space Shuttle Main En-
gine Low-Pressure Fuel Pump Inlet Duct Using Air Flow
Test Data—Abstract Only. For presentation at the 53rd
JANNAF Propulsion Meeting/2nd Liquid Propulsion
Subcommittee/Space Propulsion Joint Meeting, Monterey,
CA, December 5–8, 2005.

ZOUGHI, R. University of Missouri-Rolla
KHARKOVSKY, S. University of Missouri-Rolla
HEPBURN, F.L. EM20

Microwave and Millimeter Wave Testing for the Inspection
of the Space Shuttle Spray on Foam Insulation (SOFI) and
the Acreage Heat Tiles—Final Paper. For publication in
The American Institute of Physics.
INDEX

TECHNICAL MEMORANDUMS

ADAMS, J.H. ................................................................. 2
ALBYN, K.C. ................................................................. 1
ALHORN, D.C. ............................................................... 4
BEECH, G.S. ................................................................. 1, 2
CHEN, P.S. ................................................................. 2
COLE, H.E. ................................................................. 3
CUTTING, K. ............................................................... 4
EL-LESSY, H.N. ........................................................... 3
FOWLER, B.A. .............................................................. 2
GREGORY, J.C. ............................................................ 2
GRUGEL, R.N. ............................................................. 2
HAMPTON, R.D. .......................................................... 1, 2
HARRIS, D. ................................................................. 4
HATHAWAY, D.H. ........................................................ 2
HOWARD, D.E. ........................................................... 4
JOHNSON, L. ............................................................... 4
LEE, J.A. ................................................................. 2
MARTIN, J.J. ............................................................... 3
MATLOFF, G.L. .......................................................... 4
MCGHEE, D.S. ............................................................ 1
OVERBEY, B.G. ........................................................... 4
PARNELL, T.A. ............................................................. 2
PERRY, J.L. ............................................................... 1, 2, 3
REID, R.S. ................................................................. 3
ROBERTS, B.C. ............................................................ 4
RUPERT, J.K. .............................................................. 1, 2
SCHMIDT, G.L. ........................................................... 3
SMITH, D.A. .............................................................. 2
STEEVE, B.E. ............................................................. 2
TATARA, J.D. ............................................................. 1, 3
TAYLOR, T. ............................................................... 4
TOMES, K.M. ............................................................ 3
TRAUSCH, A. ............................................................ 4
WATTS, J.W. .............................................................. 2
WIELAND, P. O. ........................................................... 3
WINGLEE, R.M. .......................................................... 2

TECHNICAL PUBLICATIONS

HARADA, N. ............................................................... 5
HATHAWAY, DAVID H. ............................................... 5
LITCHFORD, R.J. ........................................................ 5
WILSON, ROBERT M. .................................................. 5

CONFERENCE PUBLICATIONS

CHRISTENSEN, C.B. ..................................................... 6
CRAIG, D.A. ............................................................... 6
GARCIA, R. ............................................................... 6
GRESHAM, E.C. ........................................................ 6
HOFFMAN, J. ............................................................. 6
MANKINS, J.C. ........................................................... 6
MULLINS, C.A. ........................................................... 6
O’NEIL, D.A. ............................................................. 6
PATEL, R. ................................................................. 6
SIMMONS, A. ........................................................... 6
SMITHERMAN, D.V. .................................................... 6

CONTRACTOR REPORTS

BANKS-SILLS, L. ....................................................... 7
CARTER, B.J. ............................................................. 7
DAY, J.B. ................................................................. 7
FREEMAN, L.M. ........................................................ 7
HASSAN, R. ............................................................. 7
KARR, G. ................................................................. 7
PRUITT, J.R. ............................................................. 7
RAIS-ROHANI, M. ..................................................... 7
WAWRZYNEK, P.A. .................................................... 7
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABBAS, M.M.</td>
<td>8</td>
</tr>
<tr>
<td>ABOU-KHOUSA, M.A.</td>
<td>32</td>
</tr>
<tr>
<td>ABUSHAGUR, A.G.</td>
<td>56</td>
</tr>
<tr>
<td>ABUSHAGUR, M.A.G.</td>
<td>21</td>
</tr>
<tr>
<td>ABYZOV, S.S.</td>
<td>8</td>
</tr>
<tr>
<td>ACHAN, A.</td>
<td>45</td>
</tr>
<tr>
<td>ACHARI, A.</td>
<td>45</td>
</tr>
<tr>
<td>ACTON, L.W.</td>
<td>16</td>
</tr>
<tr>
<td>ADAMS, C.</td>
<td>27</td>
</tr>
<tr>
<td>ADAMS, C.L.</td>
<td>9</td>
</tr>
<tr>
<td>ADAMS, J.H.</td>
<td>8, 10, 14, 37, 56</td>
</tr>
<tr>
<td>ADAMS, M.L.</td>
<td>8</td>
</tr>
<tr>
<td>ADAMS, R.B.</td>
<td>8, 53</td>
</tr>
<tr>
<td>ADRIAN, M.L.</td>
<td>23</td>
</tr>
<tr>
<td>AGGARWAL, M.D.</td>
<td>26</td>
</tr>
<tr>
<td>AHN, H.S.</td>
<td>8, 10, 14, 56</td>
</tr>
<tr>
<td>AIKEN, D.</td>
<td>42</td>
</tr>
<tr>
<td>ALDCROFT, T.L.</td>
<td>42</td>
</tr>
<tr>
<td>ALEMU, A.</td>
<td>30</td>
</tr>
<tr>
<td>ALEXANDER, D.</td>
<td>17</td>
</tr>
<tr>
<td>ALEXANDER, L.A.</td>
<td>9, 31, 57</td>
</tr>
<tr>
<td>ALLISON, S.W.</td>
<td>10</td>
</tr>
<tr>
<td>ALSTATT, R.L.</td>
<td>39</td>
</tr>
<tr>
<td>AMAND, A.</td>
<td>9</td>
</tr>
<tr>
<td>ANDERSON, B.J.</td>
<td>55</td>
</tr>
<tr>
<td>ANDERSON, S.K.</td>
<td>42</td>
</tr>
<tr>
<td>ANDRE, M.</td>
<td>17</td>
</tr>
<tr>
<td>ANILKUMAR, A.V.</td>
<td>16, 26</td>
</tr>
<tr>
<td>ARCHER, F.</td>
<td>35</td>
</tr>
<tr>
<td>ARRANZ, A.C.</td>
<td>9</td>
</tr>
<tr>
<td>ASHLEY, P.R.</td>
<td>21, 56</td>
</tr>
<tr>
<td>ASTAFIEVA, M.M.</td>
<td>9</td>
</tr>
<tr>
<td>AVANOVA, L.A.</td>
<td>14, 15, 34</td>
</tr>
<tr>
<td>AVILA, R.</td>
<td>42</td>
</tr>
<tr>
<td>BAGDIGIAN, R.M.</td>
<td>9</td>
</tr>
<tr>
<td>BAGGETT, R.</td>
<td>32</td>
</tr>
<tr>
<td>BAGGETT, R.M.</td>
<td>31</td>
</tr>
<tr>
<td>BAILEY, D.A.</td>
<td>48</td>
</tr>
<tr>
<td>BAILEY, J.</td>
<td>12</td>
</tr>
<tr>
<td>BAILEY, M.D.</td>
<td>9</td>
</tr>
<tr>
<td>BAIZE, D.</td>
<td>9</td>
</tr>
<tr>
<td>BALASUBRAMANYAM, M.S.</td>
<td>54</td>
</tr>
<tr>
<td>BALCAZAR, D.</td>
<td>37</td>
</tr>
<tr>
<td>BALDRIEDGE, T.</td>
<td>9</td>
</tr>
<tr>
<td>BALLANCE, J.L.</td>
<td>9</td>
</tr>
<tr>
<td>BALLARD, R.O.</td>
<td>9</td>
</tr>
<tr>
<td>BAN, H.</td>
<td>36</td>
</tr>
<tr>
<td>BARANEK, M.</td>
<td>9</td>
</tr>
<tr>
<td>BARGHOUTY, A.F.</td>
<td>8, 36</td>
</tr>
<tr>
<td>BARGHOUTY, N.</td>
<td>8</td>
</tr>
<tr>
<td>BARONE, M.</td>
<td>28</td>
</tr>
<tr>
<td>BARTHELMY, S.D.</td>
<td>9, 10, 42</td>
</tr>
<tr>
<td>BASHINDZHAGYAN, G.L.</td>
<td>8, 10, 14, 56</td>
</tr>
<tr>
<td>BASSANI, L.</td>
<td>54</td>
</tr>
<tr>
<td>BASSLER, J.A.</td>
<td>10, 15</td>
</tr>
<tr>
<td>BATMAN, M.G.</td>
<td>12, 34</td>
</tr>
<tr>
<td>BATKOV, K.E.</td>
<td>8, 10, 14, 56</td>
</tr>
<tr>
<td>BATRA, A.K.</td>
<td>26</td>
</tr>
<tr>
<td>BAZZANO, A.</td>
<td>54</td>
</tr>
<tr>
<td>BECKMANN, V.</td>
<td>9</td>
</tr>
<tr>
<td>BEMPORAD, A.</td>
<td>10, 52</td>
</tr>
<tr>
<td>BENFIELD, M.P.J.</td>
<td>9</td>
</tr>
<tr>
<td>BENGTSON, R.</td>
<td>15</td>
</tr>
<tr>
<td>BERGERON, N.P.</td>
<td>10</td>
</tr>
<tr>
<td>BESHEARS, R.</td>
<td>49</td>
</tr>
<tr>
<td>BEST, J.</td>
<td>10, 48</td>
</tr>
<tr>
<td>BEST, P.J.</td>
<td>11</td>
</tr>
<tr>
<td>BHARDWAJ, A.</td>
<td>11, 12, 16, 19</td>
</tr>
<tr>
<td>BHAT, B.N.</td>
<td>12</td>
</tr>
<tr>
<td>BHATTACHARYA, M.</td>
<td>8</td>
</tr>
<tr>
<td>BIESECKER, D.</td>
<td>52</td>
</tr>
<tr>
<td>BINDLISH, R.</td>
<td>31</td>
</tr>
<tr>
<td>BISHOP, A.</td>
<td>46</td>
</tr>
<tr>
<td>BISHOP-BEHEL, K.</td>
<td>9</td>
</tr>
<tr>
<td>BISSELL, B.A.</td>
<td>42</td>
</tr>
<tr>
<td>BLACKWELL, W.C.</td>
<td>42</td>
</tr>
</tbody>
</table>
JAMES, B. ....................................................... 31, 32
JAMES, B.F. .................................................... 31, 47, 55
JANSEN, R. ....................................................... 13
JEDLOVEC, G.J. ............................................. 15, 27, 31, 38
JENG, F. ......................................................... 34
JENSEN, B.L. .................................................... 28
JERMAN, G. ..................................................... 9, 48, 50
JETER, L. ......................................................... 26
JETT, T.R. ......................................................... 31
JOHNSON, D.L. ............................................... 31, 32
JOHNSON, L ..................................................... 31, 32, 38
JOHNSON, R.E. ................................................ 19
JOHNSON, R.W. ............................................... 32, 55
JOHNSTON, A.S. ............................................. 29
JONES, G. ......................................................... 32
JONES, J. ......................................................... 15, 38
JORGENSEN, U.G. .......................................... 28
JOY, M. .......................................................... 12
JUSTUS, C.G. .................................................. 32
KAASTRA, J.S. .................................................. 13
KAHN, M. ....................................................... 16, 17
KALEMCI, E. .................................................... 32
KALMANSON, P.C. ......................................... 32
KANE, D. ........................................................ 19
KAPER, L. ....................................................... 55
KAPLAN, G. ..................................................... 18
KAPPUS, K. ..................................................... 41
KASPI, V.M. .................................................... 23, 58
KASZYNSKI, P. ................................................ 18
KATZ, I. .......................................................... 37
KAUFFMAN, B. ............................................... 38
KEGLEY, J.R. .................................................. 19, 31
KEGLEY, T. ..................................................... 20
KEITH, E.L. ..................................................... 20
KELLER, V.W. .................................................. 31, 32
KELLEY, A. ....................................................... 9
KELTON, K.F. .................................................. 13, 23, 35
KENNEDY, J.P. ............................................... 12
KESTER, T.J. ................................................... 20, 32
KHAN, M. ....................................................... 45, 46
KHARKOVSKY, S. ......................................... 14, 32, 33, 50, 58
KAHAN, M. ..................................................... 34
KHAZANOV, V.G. ........................................... 23, 33, 34, 51
KHODABANDEH, J.W. ...................................... 34
KHOSHNEVIS, B. ............................................. 34
KIM, C.W. ...................................................... 46, 47
KIM, T.H. ....................................................... 35
KIM, W. ........................................................ 34
KINNEY, T. ..................................................... 37
KISELEVA, L. ................................................... 26
KISER, J.D. ...................................................... 54
KITTREDGE, K. ............................................... 30, 49
KLEIMAN, J. ................................................... 26
KLEIN, M. ....................................................... 31
KLOSE, S. ....................................................... 28
KNOLLENBERG, P.J. ........................................ 42
KNOX, J.C. ..................................................... 34, 50
KNUPP, K. ...................................................... 44
KO, Y.-K. ...................................................... 10, 52
KOBAYASHI, K. ............................................. 17, 56, 57
KOELBL, T. ..................................................... 9
KOELFGEN, S.J. .............................................. 37
KOENIG, J.R. ................................................... 54
KOIDER, S. ..................................................... 39
KOSHAK, W.J. ............................................... 24, 25, 34
KOUBELIOU, C. ............................................. 10, 21, 22, 23, 24, 25, 28, 32,
KRAWCZYNKSI, H. ......................................... 57
KREBSBACH, A. ............................................. 57
KREHBIEL, P.R. .............................................. 47
KRIVORUTsky, E.N. ......................................... 33, 34
KRUPP, D.R. ................................................... 48
KUBAS, D. ..................................................... 28
KUCK, F. ....................................................... 25
KUHARSKI, R.A. ............................................. 37
LA CASE, K. .................................................. 24
LAL, R.B. ....................................................... 26, 34
LAPENTA, W.M. ............................................ 15, 16, 17, 24
LARIVIERE, B.W. ........................................... 40
LARUE, J. ...................................................... 12
LAROQUE, S. .................................................. 12
LARUE, J. ...................................................... 18
SANSOUCIE, M.P. ........................................... 30, 49
SANTORO, R. .............................................. 54
SARIPALLI, L. ............................................... 24
SATTERFIELD, D. ........................................ 44
SATURNO, W. ............................................ 50
SCHLAGHECK, R.A. .............................. 15, 49, 51
SCHMIDT, D.P. ........................................... 13
SCHMIDT, G.R. .......................................... 29
SCHMIDT, W.K.H. ..................................... 14
SCHNEIDER, J. .......................................... 49
SCHNEIDER, T. .......................................... 21
SCHOFIELD, E. .......................................... 50
SCHRAMM, F. ........................................... 49
SCHWARDRON, N.A. ................................ 10
SCHWEIZER, M. ....................................... 55
SCOTT, J.P. ............................................... 40, 49
SCRIPA, R.N. ............................................ 36
SEERY, T. .................................................. 40
SEGRE, P.N. ............................................. 26
SEGUARAGARCIA, G. ............................ 53
SEN, S. .................................................... 46, 47, 50
SENE, F.F. ................................................ 47
SERVER, T. ............................................... 30
SEVER, T.L. ............................................ 50
SHAH, S. .................................................. 50, 55
SHAW, J. .................................................. 52
SHAW, J.N. ............................................... 53
SHEEHY, J.A. ............................................ 39
SHELDON, R.B. .......................................... 50
SHELTON, J.D. .......................................... 50
SHEPARD, W.S. ....................................... 23
SHERIF, D.E. ............................................. 50
SHIBAKOV, A. ........................................... 50
SHIPATA, K. ............................................ 39
SHIVERS, H. ............................................ 50
SHRESTHA, S. .......................................... 50
SIAS, D. ................................................... 10
SIBILLE, L. .............................................. 22, 30, 49, 50, 51
SIDERS, J. ................................................ 10
SIEVE, B. .................................................. 35
SINGH, N. .................................................. 15, 51
SISCO, J.D. ............................................... 51
SKIPWORTH, W. ...................................... 39
SMALLEY, K. ........................................... 39
SMETTE, A. ............................................. 55
SMIRNOV, A. .......................................... 45
SMITH, A. ............................................... 9
SMITH, C.C. ........................................... 51
SMITH, D.D. .......................................... 14, 51
SMITH, F. ................................................ 40
SMITH, G.A. ........................................... 26
SMITH, S. ............................................... 38
SMITH, Z. ................................................ 23
SMITHERMAN, D.V. ............................... 51
SNELL, E.H. .......................................... 51
SOL, H. .................................................. 41
SOLANO, E. ............................................ 53
SOLLERMAN, J. ........................................ 28
SONDAK, D.L. .......................................... 18
SORENSEN, K. ....................................... 33
SORENSEN, K.F. ..................................... 13
SORGE, L. ............................................... 10
SORIA, R. ............................................... 11
SPANN, J.F. ........................................... 8, 32, 33, 51
SPANYER, K. .......................................... 54
SPEEGLE, C. ........................................... 26
SPIVEY, R. ............................................. 26
STAHL, H.P. ........................................... 19, 20, 28, 39, 40, 51, 52
STALLWORTH, R. .................................. 20
STANKOV, B. .......................................... 31
STANOJEV, B.J. ........................................ 45
STARKS, P. ............................................. 31
STARLING, R. .......................................... 28
STELLINGWERF, R.F. ............................ 20
STEPHEN, J.B. ......................................... 54
STEPHENS, W. ........................................ 25
STERLING, A.C. ...................................... 40, 52
STEWARD, M.F. ..................................... 34
STOLZFUS, J.M. ..................................... 17
STORRIELOMBARDI, M.C. .................. 52
<table>
<thead>
<tr>
<th>Name</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRICKLAND, M.</td>
<td>32, 55</td>
</tr>
<tr>
<td>STRONG, J.D.</td>
<td>10, 12, 22, 39</td>
</tr>
<tr>
<td>STULGIES, B.</td>
<td>18</td>
</tr>
<tr>
<td>SU, C-H.</td>
<td>36, 52</td>
</tr>
<tr>
<td>SUBBARAMAN, M.R.</td>
<td>40</td>
</tr>
<tr>
<td>SUESS, S.T.</td>
<td>10, 41, 52</td>
</tr>
<tr>
<td>SUGGS, R.M.</td>
<td>16, 38, 52, 53</td>
</tr>
<tr>
<td>SULLIVAN, D.</td>
<td>52, 53</td>
</tr>
<tr>
<td>SUZUKI, N.</td>
<td>42</td>
</tr>
<tr>
<td>SWANK, J.H.</td>
<td>58</td>
</tr>
<tr>
<td>SWANSON, G.R.</td>
<td>38</td>
</tr>
<tr>
<td>SWARTZ, D.A.</td>
<td>19, 23, 24, 42</td>
</tr>
<tr>
<td>SWIFT, W.R.</td>
<td>16, 53</td>
</tr>
<tr>
<td>SWINT, M.S.</td>
<td>29</td>
</tr>
<tr>
<td>SZABO, R.J.</td>
<td>58</td>
</tr>
<tr>
<td>SZOFKRAN, F.R.</td>
<td>15, 43, 55</td>
</tr>
<tr>
<td>SZOKE, J.</td>
<td>55</td>
</tr>
<tr>
<td>TABB, D.</td>
<td>14</td>
</tr>
<tr>
<td>TANANBAUM, H.</td>
<td>56</td>
</tr>
<tr>
<td>TANKOSIC, D.</td>
<td>8</td>
</tr>
<tr>
<td>TANVIR, N.</td>
<td>35</td>
</tr>
<tr>
<td>TASSELL, V.</td>
<td>30</td>
</tr>
<tr>
<td>TATARAD, J.D.</td>
<td>14, 44</td>
</tr>
<tr>
<td>TAYLOR, G.B.</td>
<td>22, 23, 25, 53</td>
</tr>
<tr>
<td>TAYLOR, T.</td>
<td>8</td>
</tr>
<tr>
<td>TAYLOR, L.</td>
<td>8</td>
</tr>
<tr>
<td>TENNANT, A.F.</td>
<td>23, 24</td>
</tr>
<tr>
<td>THOM, G.</td>
<td>19</td>
</tr>
<tr>
<td>THOM, R.L.</td>
<td>31, 53</td>
</tr>
<tr>
<td>THOMAS, C.</td>
<td>53</td>
</tr>
<tr>
<td>THOMAS, F.</td>
<td>53</td>
</tr>
<tr>
<td>THONNARD, S.</td>
<td>32</td>
</tr>
<tr>
<td>THREET, G.E.</td>
<td>48</td>
</tr>
<tr>
<td>TICE, N.W.</td>
<td>42</td>
</tr>
<tr>
<td>TIDELLI, P.H.</td>
<td>21</td>
</tr>
<tr>
<td>TIDWELL, P.</td>
<td>21</td>
</tr>
<tr>
<td>TIELENS, A.G.G.M.</td>
<td>8</td>
</tr>
<tr>
<td>TINGER, M.L.</td>
<td>30, 49, 50</td>
</tr>
<tr>
<td>TIRADO-CASTRO, A.J.</td>
<td>53</td>
</tr>
<tr>
<td>TOMES, K.M.</td>
<td>44</td>
</tr>
<tr>
<td>TONES, I.</td>
<td>41</td>
</tr>
<tr>
<td>TOTANJIL, H.</td>
<td>26, 34, 53</td>
</tr>
<tr>
<td>TOWNERS, R.</td>
<td>15</td>
</tr>
<tr>
<td>TOWNSEND, J.</td>
<td>41</td>
</tr>
<tr>
<td>TRAN, H.</td>
<td>42</td>
</tr>
<tr>
<td>TRAUSH, A.</td>
<td>32</td>
</tr>
<tr>
<td>TREVINO, L.C.</td>
<td>43, 53</td>
</tr>
<tr>
<td>TRINH, H.P.</td>
<td>32, 54</td>
</tr>
<tr>
<td>TUCKER, D.</td>
<td>34, 53</td>
</tr>
<tr>
<td>TUCKER, J.</td>
<td>31</td>
</tr>
<tr>
<td>TUCKER, P.K.</td>
<td>32, 36, 54</td>
</tr>
<tr>
<td>TUCKER, S.P.</td>
<td>22, 28</td>
</tr>
<tr>
<td>TUDOSE, V.</td>
<td>21</td>
</tr>
<tr>
<td>TURNER, M.W.</td>
<td>54</td>
</tr>
<tr>
<td>TURNER, S.</td>
<td>54</td>
</tr>
<tr>
<td>TURPIN, A.A.</td>
<td>39, 48</td>
</tr>
<tr>
<td>TWICHELLE, W.</td>
<td>25</td>
</tr>
<tr>
<td>TYLER, T.R.</td>
<td>58</td>
</tr>
<tr>
<td>TYSON, R.</td>
<td>16</td>
</tr>
<tr>
<td>UBERTINI, P.</td>
<td>54</td>
</tr>
<tr>
<td>UNGER, R.J.</td>
<td>11</td>
</tr>
<tr>
<td>URBANCHOKE, W.</td>
<td>39</td>
</tr>
<tr>
<td>VALENTINE, P.G.</td>
<td>54</td>
</tr>
<tr>
<td>VAN DER SCHUJFF, O.J.</td>
<td>48</td>
</tr>
<tr>
<td>VARNAVAS, K.</td>
<td>54</td>
</tr>
<tr>
<td>VASQUEZ, R.</td>
<td>44</td>
</tr>
<tr>
<td>VAUGHAN, D.</td>
<td>54</td>
</tr>
<tr>
<td>VAUGHAN, S.</td>
<td>10</td>
</tr>
<tr>
<td>VAUGHAN, W.W.</td>
<td>24, 31, 32, 55</td>
</tr>
<tr>
<td>VAUGHN, J.</td>
<td>21</td>
</tr>
<tr>
<td>VAYNER, B.V.</td>
<td>21</td>
</tr>
<tr>
<td>VEITH, E.M.</td>
<td>48</td>
</tr>
<tr>
<td>VICKERS, J.H.</td>
<td>55</td>
</tr>
<tr>
<td>VITARIUS, P.</td>
<td>21</td>
</tr>
<tr>
<td>VOLZ, M.P.</td>
<td>26, 43, 55</td>
</tr>
<tr>
<td>VREESWIJK, P.M.</td>
<td>55</td>
</tr>
<tr>
<td>VREBSKIY, A.B.</td>
<td>9</td>
</tr>
<tr>
<td>WAGNER, D.K.</td>
<td>55</td>
</tr>
<tr>
<td>WAITE, JR., J.H.</td>
<td>11, 12, 16, 19</td>
</tr>
<tr>
<td>WAITS, D.A.</td>
<td>11</td>
</tr>
</tbody>
</table>
**REPORT DOCUMENTATION PAGE**

<table>
<thead>
<tr>
<th>1. AGENCY USE ONLY (Leave Blank)</th>
<th>2. REPORT DATE</th>
<th>3. REPORT TYPE AND DATES COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>June 2007</td>
<td>Technical Memorandum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. TITLE AND SUBTITLE</th>
<th>5. FUNDING NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2005 Scientific and Technical Reports, Articles, Papers, and Presentations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. AUTHORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.A. Narmore, Compiler</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</th>
<th>8. PERFORMING ORGANIZATION REPORT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>George C. Marshall Space Flight Center</td>
<td>M–1192</td>
</tr>
<tr>
<td>Marshall Space Flight Center, AL  35812</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</th>
<th>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Aeronautics and Space Administration</td>
<td>NASA/TM—2007–214963</td>
</tr>
<tr>
<td>Washington, DC  20546–0001</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11. SUPPLEMENTARY NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by the Marshall IT Services Office, Office of Chief Information Officer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12a. DISTRIBUTION/AVAILABILITY STATEMENT</th>
<th>12b. DISTRIBUTION CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unclassified-Unlimited</td>
<td></td>
</tr>
<tr>
<td>Subject Category 99</td>
<td></td>
</tr>
<tr>
<td>Availability: NASA CASI</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13. ABSTRACT (Maximum 200 words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>This Technical Memorandum (TM) presents formal NASA technical reports, papers published in technical journals, and presentations by Marshall Space Flight Center (MSFC) personnel in FY 2005. It also includes papers of MSFC contractors.</td>
</tr>
</tbody>
</table>

After being announced in STAR, all NASA series reports may be obtained from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

The information in this TM may be of value to the scientific and engineering community in determining what information has been published and what is available.

<table>
<thead>
<tr>
<th>14. SUBJECT TERMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific and Technical Reports, articles, papers, presentations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. NUMBER OF PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16. PRICE CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlimited</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17. SECURITY CLASSIFICATION OF REPORT</th>
<th>18. SECURITY CLASSIFICATION OF THIS PAGE</th>
<th>19. SECURITY CLASSIFICATION OF ABSTRACT</th>
<th>20. LIMITATION OF ABSTRACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unclassified</td>
<td>Unclassified</td>
<td>Unclassified</td>
<td>Unlimited</td>
</tr>
</tbody>
</table>

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)

Prepared by NIST 228-18
200-102
National Aeronautics and Space Administration
IS20
George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama
35812