PUBLICATIONS

APL staff members were authors or co-authors of the following unclassified books and technical articles that were recently published:


Beisser KB, Goldberg RL, and Marren KD


Brown MZ, Burschka D, and Hager GD


Burgan MW


Carbay JF, Morrison D, and Romick JG


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Fleischer MA

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Fleischer MA


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Grant DG


Harvey RJ


Hawke BR, Lawrence DJ, Blewett DT, Lucey PG, Smith AG, Spudis PD, and Taylor JG


Hori T, and Koikawa T


Izenberg NR, Murchie SL, Bell JF III, McFadden LA, Wellnitz DD, Clark BE, and Gaffey MJ


Kelly MC, Makela J, Paxton LJ, Kamalabadi F, Comberiate JM, and Kil H


Kusnierkiewicz DY


Kusnierkiewicz DY


Land HB, Eddins CL, Gauthier LR, and Klimek JM


LePoer PM, and Theodori JG


Lui ATY


Marth PC


Mayr HG, Mengel JG, Talaat ER, Porter HS, and Chan KL


Moore RC

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Paranicas C


Paranicas C, Mauk BH, McIntire RE, and Armstrong TP


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Richardson IG, Lawrence GR, Haggerty DK, Kucera TA, and Seabo A

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Using an MHD simulation to interpret the global context of a coronal mass ejection observed by two spacecraft, J. Geophys. Res. 108(A7), 1272 (2003).

Rodberg EH, Knopf WP, Lafferty PM, and Nylund SR

Sauj J, Pouquet A, and Matthaeus WH


Sullivan R, Thomas P, Murchie SL, and Robinson M

Swartz WH, Yee J-H, Vervack RJ Jr, Lloyd SA, and Newman PA

Takahashi K

Talaat ER, Yee J-H, Christensen AB, Killeen TL, Russell JM, and Woods TN

Vernon SR, and Keuch SF

Weaver HA, Stern SA, and Parker JW

Wing S, Greenwald RA, Meng C-I, Sigillito VG, and Hutton LV

Yee J-H

Yee J-H, Talaat ER, Christensen AB, Killeen TL, Russell JM III, and Woods TN

Atmospheric remote sensing using a combined extensive and refractive stellar occultation technique: I. Overview and proof-of-concept observations, J. Geophys. Res. (Atmos.) 107(D14), (2002).

Zhang H, LaBonte B, Li J, and Sakurai T

Zhu X

The following papers appeared in conference proceedings:

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Effects of pre-existing target structure on the formation of large craters, in Proc. 3rd Int. Conf. on Large Meteorite Impacts, 4106, Nördlingen, Germany (Jul 2003).

Beser ND, Duerr TE, and Staisianas GP

Crawford DA, Barnouin-Jha OS, and Cintala MJ
Mesoscale computational investigation of shocked heterogeneous materials with application to large impact craters, in Proc. 3rd Int. Conf. on Large Meteorite Impacts, 4119, Nördlingen, Germany (Aug 2003).

Czybak BZ, Willkorn JT, Grossman KR, and Van Wie DM
Computational assessment of the sparkjet flow control actuator, in Proc. 33rd AIAA Fluid Dynamics Conf. & Exhibit 2003, 3711, Orlando, FL (Jun 2003).

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Compact Reconnaissance Imaging Spectrometer for Mars (CRISM) thermal design, in Proc. 33rd Int. Conf. on Environmental Systems (ICES), AIAA-2003-1-2638, Vancouver, British Columbia, Canada (Jul 2003).

Fleischer MA
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Fowler KR, Frank LJ, and Williams RL

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Paschalidis NP
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The following papers appeared in Proc. 21st Digital Avionics Systems Conf. (DASC) 9/4A, Irvine, CA (Oct 2002):

Conde RF, Haber JW, Webbert RW, Redman RJ, Mellert JD, Bogdanski JF, and Ling SX
Benefits and lessons learned from the use of the compact PCI standard for spacecraft avionics.

Le BQ, Ling SX, Kennedy LR, Dakermanji G, and Laughery SC
The MESSENGER power distribution unit packaging design.

Ling SX, Conde RF, and Le BQ
A lightweight integrated electronics module (IEM) packaging design for the MESSENGER spacecraft.

Moore RC
Avionics for spacecraft command, telemetry, data processing and storage.

The following papers appeared in Proc. Solar Wind Conf., Pisa, Italy (Jun 2003):

Livi SA, McNutt R, Andrews GB, Keath E, Mitchell D, and Ho G
The energetic particles spectrometers (EPS) on MESSENGER and New Horizons, pp. 838–841.

McNutt RL Jr,
Fluid modeling of the VLISM/solar wind interaction with the 13-moment formalism, pp. 194–197.

A realistic intersteller explorer, pp. 830–833.

The following papers appeared in Proc. 5th Int. Symp. on Reducing the Cost of Spacecraft Ground Systems and Operations, Pasadena, CA (8–11 Jul 2003):

Gemeyn S
Longevity planning: A cost reduction strategy for ground systems on long duration space missions.

Gemeyn SE, and Gemeyn MW
Ground system planning for long duration space missions helped by lessons learned resurrecting obsolete computing systems.

Knopf W
The TIMED telemetry definition system.

Packard M, Whichard D, and Clark Pj
Cost reduction through the use of web based applications in the mission operations center.

The following papers appeared in Proc. 39th AIAA/ASME/SAE/JSEE Joint Propulsion Conf. and Exhibit, Huntsville, AL (Jul 2003):

Aadland RS, Engelbrecht CS, Ganapathi GB, Browning DA, Wilson F, and Hoskins WA
Xenon propellant management system for 40 cm NEXT ion thruster.

Thunnissen DP, Engelbrecht CS, and Weiss JM
Assessing model uncertainty in the conceptual design of a monopropellant propulsion system, AIAA-2003-4470.

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Bourke MC, Bullard JE, and Barnouin-Jha OS
Aeolian sediment transport pathways and aerodynamics at troughs on Mars, 3216.

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New insights into the geology of the Mars Pathfinder landing site from spectral and morphologic analysis of the 12-color superpanorama, 3060.

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Comparison of RADARSAT-1 SAR retrieved wind fields to numerical models, pp. 1930–1932.

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Combining SAR and scatterometer data to improve high resolution wind speed retrievals, pp. 233–235.

Monaldo FM
SEASAT sees the wind with SAR, pp. 38–40.

Raney RK, Leuschen CJ, Chapman RD, Jensen JR, and Gotwols BL

Raney RK, Smith WHF, Swell DT, Jensen JR, Porter DL, and Reynolds E
Abys-lite: Improved bathymetry from a dedicated small satellite delay-Doppler radar altimeter, pp. 1083–1085.

Thompson DR, Linstrom LA, Gasparovic RF, and Elfouhaily TM
Doppler analysis of GPS reflections from the ocean surface, pp. 4489–4491.

Haley DR, Strikwerda TE, and Allinger KG
Autonomous star tracker development for the New Horizons mission, AAS-03-07.

Pittelkauf ME
Pointing error definitions, metrics, and algorithms, AAS-03-559.

Sharer PJ
Separation analysis for the STEREO mission, AAS-03-553.

The following papers appeared in conference proceedings available on CD-ROM:

Armand M, Beck TJ, Boyle M, Oden ZM, Voo L, and Shapiro JR
A semi-automatic technique for generating a parametric finite element model of the femur from imaging modalities, 2003 ASME Summer Bioengineering Conf., Key Biscayne, FL (Jun 2003).

Bokulic RS, and Jensen JR
Tone-based commanding of deep space probes using small aperture ground antennas, Proc. 5th Int. Symp. on Reducing the Cost of Spacecraft Ground Systems and Operations, Jet Propulsion Laboratory, California Institute of Technology, Pasadena (Jul 2003).

Fielhauer KB, Boone BG, Bruzzi JR, Kluga BE, Connelly JR, Bierbaum MM, Gorman JJ, anddagalakis N

Hart EF
Reaching the world: Developing multilingual web pages, SHARE Summer Conf. 2003, Washington, DC (Sep 2003).

Heiligman GM, Hill TA, LeGrys RL, and Williams SP

Kleinberger M, Voo LM, Merkle A, Bevan M, and Chang S
The role of seatback and head restraint design parameters on rear impact occupant dynamics, 18th Int. Tech. Conf. on the Enhanced Safety of Vehicles 229, Nagoya, Japan (May 2003).

Leary BA, Wilkerson JT, and Rice T
Application of an analytical plungenozzle design model for pulsed detonation engines, 16th Int. Symp. on Airbreathing Engines, Cleveland, OH (Sep 2003).

Lewin AW, and Frank LJ

Malouf PM
Analysis and testing for assessing risk of occurrence of multipactor in two telecommunications components of the STEREO spacecraft, Proc. 4th Int. Workshop on Multipactor, Corona and Passive Intermodulation in Space RF Hardware, Noordwijk, The Netherlands (Sep 2003).

Martin WR, and Merris JM

Sequeira HB, and Kernsner DM

Spall JC
Performance metrics via the Fisher information matrix, Performance Metrics Symp., Gaithersburg, MD (Sep 2003).

Voo LM, and Armand M

PRESENTATIONS

APL staff members were among those who gave the following unclassified presentations:

Armand M, Beck TJ, Boyle M, Voo L, Oden ZM, and Shapiro JR
A semi-automatic technique for generating a parametric finite element model of the femur from imaging modalities, ASME Summer Bioengineering Conf., Key Biscayne, FL (25–29 Jun 2003).

Barnum BH, and Winstead NS
Tactical decision aid for mesoscale forecasting of dust storms, Battlespace Atmospheric and Cloud Impacts on Military Operations, Monterey, CA (9–11 Sep 2003).

Bevan MG
Wireless intra-satellite communications project, Maryland TEDCO Conf., Laurel, MD (4 Sep 2003).

Brinkerhoff WB, Mahaffy PR, Cabane M, Atreya SK, Coll P, Cornish TJ, Harpold DN, Israel G, Niemann HB, Owen T, and Raulin F
Sample analysis at Mars, 6th Int. Conf. of Mars, Pasadena, CA (20–25 Jul 2003).

Cison BP, Goldstein PJ, Foster JC, Fok M-C, Roelof EC, and DeMajistre R
Relation between the ring current and sub-auroral electric fields, Chapman Conf. on Physics and Modelling of the Inner Magnetosphere, Helsinki, Finland (25–29 Aug 2003).

Cheng S, and Wallis RE

DeBoy CC, Jensen JR, and Asher MS

Decker RB, and Krimigis SM
Observing occultations, Learn the Sky—Advanced Class, University of Maryland Observatory, College Park (2 Jul 2003).

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Fasold MJ
Compact Reconnaissance Imaging Spectrometer for Mars (CRISS) thermal design, 53rd Int. Conf. on Environmental Systems (ICES), Vancouver, British Columbia, Canada (7–10 Jul 2003).

Fitch MJ, Donegan MM, Pittman TB, Jacobs BC, and Franson JD

Frank LJ, and Lewin A
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Franson JD, Donegan JF, Fitch MJ, Jacobs BC, and Pittman TB

Freund DE, Woods NE, Ku HC, and Awadallah RS

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Analysis and testing for assessing risk of occurrence of multipactor in two telecommunications components of the STEREO spacecraft, 4th Int. Workshop on Multipactor, Corona and Passive Intermodulation in Space RF Hardware, Noordwijk, The Netherlands (8–11 Sep 2003).

Mandelberg MD, Biondo AC, Bodoh-Creed AL, and Newman FC

Martin WR, and Morris JM

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Monaldo FM, and Thompson DR

Moore RC, and McNutt RL Jr
Art and science, Panel discussion, Columbia Festival, Wilde Lake High School, Columbia, MD (23 Jun 2003).

Paschalidis NP
Development of advanced system-on-a-chip and microsystems for space science missions, NATO Conf. on Effects of Space Weather on Technol. Infrastructure, Rhodes, Greece (25 Mar 2003).

Paschalidis NP

Penn JE
Ka-band digital phase shift MMIC: Applications for new communications technology, innovation, and imagination, JHU/APL Partnering Showcase, Laurel, MD (4 Sep 2003).

Pittman TB, Donegan MM, Fitch MJ, Jacobs BC, and Franson JD
Need for high efficiency photon-number resolving detectors in linear optics quantum computing, NIST-ARDA Workshop on Single-Photon Detectors, Gaithersburg, MD (31 Mar 2003).
The following papers were presented at the 5th Int. Symp. on Reducing the Cost of Spacecraft Ground Systems and Operations, Jet Propulsion Laboratory, California Institute of Technology, Pasadena (8–11 Jul 2003):

- **Bokulic RS, and Jensen JR**
  - Tone-based commanding of deep space probes using small aperture ground antennas.

- **Gemeny SE, and Gemeny MW**
  - Ground system planning for long duration space missions helped by lessons learned resurrecting obsolete computing systems.

- **Gemeny SE, and Gemeny MW**
  - Longevity planning: A cost reduction strategy for ground systems on long duration space missions.

- **Knopf W**
  - The TIMED telemetry definition system.

- **Packard M, Whichard D, and Clark PJ**
  - Cost reduction through the use of web based applications in the mission operations center.

The following papers were presented at the Joint Discussion on Magnetic Fields and Helicity in the Sun and Heliosphere, Int. Astronomical Union General Assembly, Sydney, Australia (16 Jul 2003):

- **Georgoulis MK, Rust DM, and LaBonte BJ**
  - Transport of helicity and dynamics of solar active regions.

- **Riley P**
  - Magnetic helicity in filaments, CMEs and magnetic clouds.

- **Schmieder B, Demoulin P, Georgoulis M, Rust DM, and Bernasconi PN**
  - Emerging magnetic flux and the heating of coronal loops.

The following papers were presented at the 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conf. and Exhibit, Huntsville, AL (20–23 Jul 2003):

- **Aadalnd RS, Engelbrecht CS, Ganapathi GB, Browning DA, Wilson F, and Hoskins WA**
  - Xenon propellant management system for 40 cm NEXT ion thruster.

- **Moore RC, and McNutt RL Jr**
  - The MESSENER propulsion system—How it got the way it is.

- **Thunnissen DP, Engelbrecht CS, and Weiss JM**
  - Assessing model uncertainty in the conceptual design of a monopropellant propulsion system.

- **Wiley S, Dommer K, and Mosher LE**
  - Design and development of the MESSENER propulsion system.

The following papers were presented at the IEEE Int. Geoscience and Remote Sensing Symp., Toulouse, France (21–25 Jul 2003):

  - Comparison of RADARSAT-1 SAR retrieved wind fields to numerical models.

- **Monaldo FM**
  - SEASAT sees the wind with SAR.

- **Monaldo FM, Thompson DR, and Winstead NS**
  - Combining SAR and scatterometer data to improve high resolution wind speed retrievals.

- **Raney RK, Leuschen CJ, Chapman RD, Jensen JR, and Gotwols BL**
  - LaRA-2002: Results of the airborne laser and radar altimeter campaign over Greenland, Svalbard and Arctic Sea Ice.
Raney RK, Smith WHF, Swell DT, Jensen JR, Porter DL, and Reynolds EL
Abyss-lite: Improved bathymetry from a dedicated small satellite
delay-Doppler radar altimeter.

Thompson DR, Linstrom LA, Gasparovic RF, and Elfouhaily TM
Doppler analysis of GPS reflections from the ocean surface.

The following papers were presented at the 28th Int. Cosmic Ray Conf.,
Tsukuba, Japan (31 Jul–7 Aug 2003):
Decker RB, Krimigis SM, Roelof EC, and Hill ME
Angular distributions and energy spectra of energetic particles observed by Voyager 1 at 85–88 AU.

Hill ME, Hamilton DC, Decker RB, and Krimigis SM
Sustained energetic particle intensity enhancements at Voyager 1 beginning in 2002 following the 1999–2001 period of increasing anomalous cosmic ray modulation.

Krimigis SM, Decker RB, Roelof EC, and Lario D
Energetic particle intensity increases at Voyagers 1 and 2 during 2002–03.

The following papers were presented at the Am. Astronautical Soc./Am.
Inst. of Aeronautics and Astronautics (AAS/IAAA) Astrodynamics Specialist Conf.,
Big Sky, MT (3–7 Aug 2003):

Haley DR, Strikwerda TE, and Ailinger KG
Autonomous star tracker development for the New Horizons mission.

Pittelkau ME
Pointing error definitions, metrics, and algorithms.

Sharer PJ
Separation analysis for the STEREO mission.

The following papers were presented at the Joint Assembly of the European Geophys., Soc., Am. Geophys. Union, and European Union of Geosci.,
Nice, France (7–11 Apr 2003):

Seasonal variation of thermospheric composition as measured by TIMED/GUVI.

Space weather effects of the April 15–23 2002 geomagnetic storm.

Kamalabadi F, Comberiate J, Paxton L, and Kil H
Detection and mapping of plasma bubbles with the Global Ultraviolet Imager.

Nesse H, Stadnes J, Aksnes A, Saetre C, Aasnes A, Christensen AB, Anderson PC, Paxton L, and Ostgaard N
Atmospheric effects of energetic electron precipitation during substorms.

The Sun–Earth connection as viewed from GUVI on TIMED.

Solomon SC, Bailey SM, Eparvier FG, Gladstone GR, Paxton L, and Woods TN
New measurements by the TIMED solar extreme-ultraviolet experiment: Implications for thermospheric modeling.

Straus PR, Paxton L, Crowley G, Henderson S, Kil H, Morrison D, Swenson C, and Christensen AB
GUVI nighttime observations of the equatorial and mid-latitude ionosphere.

Weiss M, Morrison D, Paxton L, and Barnes R
Using XML to perform a web-based interrogation of large-scale space physics data sets focusing on TIMED and SuperDARN data.

Analysis of the energy input and loss in the thermosphere during the April 2002 geomagnetic storm using SABER infrared limb emission and GUVI limb emission.

The following papers were presented at the Quantum Electronics and Laser Sci. Conf., Baltimore, MD (1–6 Jun 2003):

Fitch MJ, Donegan JJ, Jacobs BC, Pittman TB, and Franson JD
Improved single-photon detector performance.

Franson JD, Donegan MM, Fitch MJ, Jacobs BC, and Pittman TB
High-fidelity quantum logic operations and entangled ancilla states.

Jacobs BC, Pittman TB, Fitch MJ, and Franson JD
Quantum logic operations in optical fibers.

The following papers were presented at the Int. Symp. on Optical Sci. and Technol., The Int. Soc. for Optical Engineering, 48th Ann. SPIE Mtg., San Diego, CA (3–8 Aug 2003):

Fielhauer KB Boone BG, Bruzzi JR, Kluga BE, Connelly JR, Bierbaum MM, Gorman JJ, and Dagakalis N
Comparison of macro-tip/tilt and meso-scale position beam-steering transducers for free-space optical communications using a quadrant photodiode sensor.

Pittman TB, Jacobs BC, and Franson JD
Periodic single photon source and quantum memory.

Silvergate PR, and Fort DE
System design of the Compact Reconnaissance Imaging Spectrometer for the Mars (CRISM) hyperspectral imager.

Warren JW, and Heffernan KJ
The CONTOUR remote imager and spectrometer.

The following papers were presented at the 5th IAA Int. Conf. on Low-Cost Planetary Missions, European Space Agency, Noordwijk, Netherlands (24–26 Sep 2003):

Gold RE, McNutt RL Jr, and Solomon SC
The MESSENERG science payload.

Haley DR, Strikwerda TE, and Ailinger KG
Star tracker scan mode capability for the New Horizons mission.

Paschalidis NP
A family of space qualified microelectronics technologies developed and flying on spacecraft and instrumentation systems.