

PUBLICATIONS

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

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Burbank JL

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Burbank JL, and Jones SD

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A new model for computing the intermodulation signal spectra for a nonlinear amplifier.

PRESENTATIONS

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

Asher MS, and Olsen EA

TIMED GPS attitude determination experiment, *Flight Mechanics Symp.*, NASA/CPC2003P212246, Greenbelt, MD (28–30 Oct 2003).

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- Burkom HS**
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Enhancing predictive battle space awareness for time critical targeting via horizontally fused terrestrial and space weather forecasting, *6th Ann. Am. Inst. of Aeronautics and Astronaut./Inst. of Electrical and Electronics Engineers (AIAA/IEEE) Space Core Technologies Symp.*, Colorado Springs, CO (4–6 Nov 2003).
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- Ho GC, Roelof EC, and Mason GM**
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In situ analysis of organics and isotopes at Mars, *35th Am. Astron. Soc. Div. Mtg. for Planetary Science*, Monterey, CA (1–6 Sep 2003).
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Orbit determination of the TIMED mission using TDRSS differenced one-way Doppler tracking data, *Flight Mechanics Symp.*, NASA/CPC2003P212246, NASA/GSFC, Greenbelt, MD (28–30 Oct 2003).
- McAdams JV**
Impact of technology advancements on MESSENGER—The first Mercury orbiter, *Soc. of Aerospace Engineers, Control and Guidance Systems Committee Mtg.*, Dayton, OH (21–24 Oct 2003).
- Mitnick WL, and Segal LJT**
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- Monaldo FM, and Kerbaol V**
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- Oetting JD, and Kullstam P**
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- Pittman TB, and Franson JD**
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- Raney RK, and Leuschen C**
A review of the LaRa 2002 campaign, *CryoVex Working Group, KMS, Mtg.*, Copenhagen, Denmark (10 Oct 2003).
- Raney RK, Jensen JR, and Porter DL**
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- Rust DM**
Comparison of interplanetary magnetic clouds at the NEAR spacecraft with coronal mass ejections (CME) at the Sun, *Sun-Earth Connection Seminar*, Lab. for Extraterrestrial Physics, NASA Goddard Spaceflight Center, Greenbelt, MD (10 Oct 2003).
- Schaefer ED**
The acoustic response of component loaded honeycomb panels used in spacecraft structures, *The Ameripam Conf.*, Troy, MI (21–22 Oct 2003).
- Srinivasan R, Saffarian HM, Wilkerson JT, Cybyk BZ, and Raghu S**
Scalable matrix methanol-air fuel cell, *ONR Workshop on Fuel Cells for Unmanned Undersea Vehicles*, Newport, RI (29–31 Oct 2003).
- Tennyson PD, and Erlandson RE**
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- Wagstaff K, Rust DM, LaBonte BJ, and Bernasconi PN**
Automated detection and characterization of solar filaments and sigmoids, *Solar Image Recognition Workshop*, Brussels, Belgium (23–24 Oct 2003).
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Comparison of flight temperature data to predictions and test data for the TIMED spacecraft, *21st Aerospace Testing Seminar*, Manhattan Beach, CA (21–23 Oct 2003).
- Wing S, Newell PT, and Meng C-I**
Double cusp, *Magnetospheric Response to Solar Activity Colloquium*, Prague, Czech Republic (9–21 Sep 2003).
- The following papers were presented at the *54th Int. Astronaut. Congress*, Bremen, Germany (29 Sep–3 Oct 2003):
- Guo Y, and Farquhar RW**
Current mission design of the Solar Probe Mission.

- Paschalidis NP**
Advanced system on a chip enabling technologies for spacecraft and instrumentation.
- Sharer PJ**
Mission design for the STEREO solar observations.
- The following papers were presented at the *Mtg. of the Military Sensing Symposia (MSS) Specialty Group on Missile Defense Sensors, Environments and Algorithms (MD-SEA)*, Monterey, CA (18–20 Nov 2003):
- Currey JR, Swaminathan C, and Hardy PK**
Missile defense agency kill assessment impact database.
- Taylor JC, Michaelis CH, Bierbaum MM, Dogra VK, Tennyson PD, and Erlandson RE**
Solar scatter contributions to intercept signature modeling.
- Tennyson PD, Erlandson RE, Hargis CB, Kumar K, Michaelis CH, and Taylor JC**
ELDT observations of Red Dog 1 and 2 flights.
- The following papers were presented at the *AGU Fall Mtg.*, San Francisco, CA (8–12 Dec 2003):
- Bernasconi PN, Foukal P, Eaton HH, and Rust DM**
First results of the solar bolometric imager.
- Crowley G, Yee J-H, Talaat ER, Hackert C, and Roble RG**
Modeling of the energy balance in the mesosphere and lower thermosphere.
- Donegan MM, Wagstaff KL, Ho GC, and Vandegriff J**
Real-time upstream monitoring system: Using ACE data to predict the arrival of interplanetary shocks.
- Eviatar A, and Paranicas C**
The ionosphere and plumes of Europa.
- Georgoulis MK, and LaBonte BJ**
Calculation of a minimum total magnetic helicity in solar active regions.
- Ho GC, Roelof EC, and Mason GM**
Event fluences of energetic 3He and 4He: Different behavior during the rise and maximum of solar cycle 23.
- Johnson JR, Tuzla I, and Wing S**
A cumulant-based approach to understanding magnetospheric dynamics and predicting geomagnetic indices.
- Keika K, Nosé M, Takahashi K, Ohtani S, C:son BP, Mitchell DG, Christon SP, and McEntire RW**
Contribution of the ion flow-out and charge exchange processes to the decay of the storm-time ring current: Geotail/EPIC and IMAGE/HENA observations.
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- Mauk BH, Roelof EC, Saur JS, and Paranicas CP**
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Role of small scale gravity waves in generating non-migrating tides in the mesosphere.
- Morgan MF, Yee J-H, Talaat ER, Bailey S, Mlynczak MG, and Russell JM**
Remote sensing of thermospheric atomic oxygen or temperature using NO radiances from TIMED/SABER and SNOE.
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A virtual observatory for the ionosphere, thermosphere and mesosphere community.
- Paranicas C, Mitchell DG, Mauk BH, and Krimigis SM**
Energetic neutral atom images of Jupiter's magnetosphere: Composition and variability.
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- Prockter LM, and Barnouin-Jha O**
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- Roh S-I, Lee D-H, Denton RE, Takahashi K, Goldstein J, Keiling A, King RA, and Yumoto K**
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Collaborative analysis of planetary waves in the mesospheric neutral winds with SuperDARN and TIMED observations.
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Measuring magnetic helicity transport in solar active regions: A practical implementation.
- Solomon SC, Stockman SA, Chapman CR, Leary JC, and McNutt RL Jr**
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- Takahashi K, Anderson RR, and Hughes WJ**
Pi2 pulsations with the second harmonic: CRRES observations in the plasmasphere.
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Studies on the coupling between the neutral winds and the ionosphere at low latitudes.
- Williams D, and Paranicas C**
Using the variation in charged particle bombardment to study satellite surfaces.
- Wing S, Newell PT, and Meng C-I**
Magnetotail assimilation model.
- Yee J-H, Talaat ER, Crowley G, and Roble R**
Atmospheric effects of solar/geomagnetic disturbances: The role of initial atmospheric states.
- Zanetti LJ**
Birkeland currents—then and now.

COLLOQUIA

The following topics were presented at the weekly APL Colloquium:

5 September 2003

The Iraq Campaign: An Episode in a War, G Friedman, Strategic Forecasting Inc.

19 September 2003

Hospital Emergency Management for Weapons of Mass Destruction: An Overview, K Andress, Christus Schumpert Health System

17 October 2003

Globalization and the Nature of War, A Echevarria, U.S. Army War College

24 October 2003

Quantum Computing Using Linear Optics, J Franson, APL

14 November 2003

The Space Elevator, B Edwards, Institute for Scientific Research

21 November 2003

The Geo-Politics of Global Aging: Fertility Decline and the Fate of Nations, P Longman, New America Foundation

12 December 2003

Future Strategic Strike Forces, ADM D Blair, Institute for Defense Analyses

U.S. PATENTS (2003)

APL staff received the following U.S. patents during 2003:

Abita J, Frankel R, and Carkhuff BG

Passive Intraocular Pressure Sensor and Patient-worn Monitoring, No. 6,579,235 (17 Jun)

Bevan MG, Kues HA, Nelson CV, and Schuster PR

Alertness Monitoring System, No. 6,661,345 (9 Dec)

Biermann PJ, Roberts JC, and Corvelli AA

Polymer Composite Orthopedic Implant, No. 6,602,293 (5 Aug)

Cornish TJ

Gridless Focusing Ion Extraction Device for a Time-of-Flight Mass Spectrometer, No. 6,614,020 (2 Sep)

Cornish TJ, and Ecelberger SA

Time-of-Flight Mass Spectrometer Array Instrument, No. 6,580,070 (17 Jun)

Cornish TJ, Charles HK Jr, and Wienhold PD

Method of Making an Ion Reflectron from a Flexible Circuit Board, No. 6,607,414 (19 Aug)

Devereux WS, Linstrom LA, Gruenbacher DM, Heins RJ, Asher M, Duven DJ, and Boehme MH

Autonomous Satellite Navigation System, No. 6,608,589 (19 Aug)

Farrell RA Sr, Happel LJ Jr, and McCally RL

Video Opto-Diagnostic Instrument with Single-Adjustment Focus, No. 6,511,420 (28 Jan)

Feldmesser HS, Falk PR, Beck TJ, and Charles HK Jr

Focused X-ray Scatter Reduction Grid, No. 6,529,582 (4 Mar)

Gauthier LR Jr, Wesner-Barrios AL, and VanWie DM

Damped Paddle Wheel for Plasma Chamber Shock Tube, No. 6,637,255 (28 Oct)

Guo Y, Ko HW, Nelson CV, White DM, and Kime JR

Apparatus with Movable Receiver Coil Array for Locating a Buried Metallic Object, No. 6,600,320 (29 Jul)

Guo Y

Autonomous Solar Navigation System, No. 6,622,970 (23 Sep)

Jensen JR, Reinhart MJ, Fielhauer KB, and Penn JE

Method and Apparatus for Non-Coherent Navigation Using Low Frame Rate Telemetry, No. 6,650,279 (18 Nov)

Kelly CA, Murray GM, and Uy OM

Polymeric Food Spoilage Sensor, No. 6,593,142 (15 Jul)

Kerechanin CW II, Anderson CW, Kitchin DA, and Mitnick RW

Compact Expandable Platform Using Material Memory for Sensor Deployment, No. 6,597,631 (22 Jul)

Levy LJ, Thompson TL, Hohman DS, Murdock TM, Westerfield EE, Hattox TM, and Kusterer TL

Global Positioning System Roadside Integrated Precision Positioning System, No. 6,560,535 (6 May)

Lew AL, Suter JJ, and Le BQ

Integrated Power Source, No. 6,608,464 (19 Aug)

Miragliotta J, Benson RC, and Osiander R

Scatter Controlled Emission for Optical Taggants and Chemical Sensors, No. 6,528,318 (4 Mar)

Nelson CV

Telescoping Spar Platform and Method of Using Same, No. 6,564,741 (20 May)

Rosen RS, Murphy JC, and Graham C

Device and Method for Rapid Chest Tube Insertion, No. 6,517,519 (11 Feb)

Smith DG, Boyle MP, Cutchis PN, and Allmon WR

Low-Pressure Valve, No. 6,647,983 (18 Nov)

Srinivasan R, Gopalan P, and Zarriello PR

Cathodic Protection Design Methods and Current Mapping, No. 6,582,587 (24 Jun)

FOREIGN PATENTS (2003)

APL staff received the following foreign patents during 2003:

Flower RW

Improved Visualization of Choroidal Blood Flow and Aberrant Vascular Structures in the Eye, No. 0801534 (European Patent Convention) (30 Oct)

Flower RW

Methods and Apparatus for Improved Visualization of Choroidal Blood Flow and Aberrant Vascular Structures in the Eye Using Fluorescent Dye Angiography, No. 1037312 (Hong Kong) (20 Jun)

Greenberg RS, Cristion JA, Moses EJ, and Sternberger WI

Apparatus and Method for Non-Invasive, Passive Fetal Heart and Maternal Heart and Uterine Monitoring, No. 758778 (Australia) (17 Jul)

Lew AL, Suter JJ, and Le BQ

Integrated Power Source, No. 163998 (Taiwan) (18 Feb)

Olsen DE

Apparatus and Method for Training Using a Human Interaction, No. 763774 (Australia) (17 Jun)

Pineda FJ, and Lin JS

Method and System for Microorganism Identification by Mass Spectrometry-based Proteome Database Searching, No. 764402 (Australia) (4 Dec)

Raney RK

Delay Compensated Doppler Radar Altimeter, No. 0929824 (European Patent Convention) (19 Nov)

Steinberger WI, and Greenberg RS

Passive Method to Quantify Objectively the Level and Density of a Neural Blockade, No. 2,298,828 (Canada) (18 Nov)

AUTHOR INDEX

Johns Hopkins APL Technical Digest

Volume 24 (2003)

Asher MS, see Devereux WS

Babin SM, Weather and Climate Effects on Disease Background Levels **24**(4), 343–348.

Babin SM, see Happel Lewis SL

Bankman IN, and Suter JJ, Living with Sensors: Then and Now **24**(1), 87–101.

Beisser KB, Goldberg RL, and Marren KD, It's About TIMED: APL's Education and Public Outreach Initiative **24**(2), 221–225.

- Boone BG, Materials and Structures Research and Development at APL **24**(1), 101–111.
- Brooks RD, The Multi-Mission Maritime Aircraft and the Maritime Patrol and Reconnaissance Force Transformation **24**(3), 238–241.
- Burkom HS, Development, Adaptation, and Assessment of Alerting Algorithms for Biosurveillance **24**(4), 335–342.
- Burkom HS, see Happel Lewis SL
- Carlson MA, Chambers JK, Cutchis PN, and Ko WH, The APL Chemical and Biological Test and Evaluation Center **24**(4), 381–387.
- Catlett C, see Kohri K
- Chacos AA, see Devereux WS
- Chambers JK, see Carlson MA
- Charles HK Jr, Electronics Technology at APL **24**(1), 112–124.
- Christensen AB, see Talaat ER
- _____, see Yee J-H
- Coolahan JE, Modeling and Simulation at APL **24**(1), 63–74.
- Croucher AR, see Garten JF
- Cutchis PN, see Carlson MA
- _____, see Happel Lewis SL
- Devereux WS, Asher MS, Heins RJ, Chacos AA, Kusterer TL, and Linstrom LA, TIMED GPS Navigation System (GNS): Design, Implementation, and Performance Assessment **24**(2), 179–193.
- Easterling CA, see Keane JF
- Elsbernd VH, see Mellott MM
- Evans CL, Multi-Mission Maritime Aircraft Acquisition Planning: Requirements Development and Maturation **24**(3), 292–296.
- Garber JM, and Williamson AC, Multi-Mission Maritime Aircraft Survivability in Modern Maritime Patrol and Reconnaissance Missions **24**(3), 304–309.
- Garten JF, Schemm CE, and Croucher AR, Modeling the Transport and Dispersion of Airborne Contaminants: A Review of Techniques and Approaches **24**(4), 368–375.
- Goldberg RL, see Beisser KB
- Grant DG, TIMED Technology Advances: Guest Editor's Introduction **24**(2), 130–132.
- Guarneri JM, Establishing the Analytical Foundation: Multi-Mission Maritime Aircraft Platform Performance Assessment **24**(3), 263–269.
- Guier WH, see Williams DJ
- Happel Lewis SL, Cutchis PN, Babin SM, and Burkom HS, Simulated Release of Plague in Montgomery County, Maryland **24**(4), 354–359.
- Harvey RJ, TIMED Autonomy System **24**(2), 201–208.
- Heins RJ, see Devereux WS
- Holland RL Jr, Science and Technology Development for Communications and Distributed Systems at APL **24**(1), 75–86.
- Keane JF, and Easterling CA, Maritime Patrol Aviation: 90 Years of Continuing Innovation **24**(3), 242–256.
- Keane JF, see Dudderar RA
- Kelen GD, see Kohri K
- Killeen TL, see Talaat ER
- Killeen TL, see Yee J-H
- Ko HW, Biomedical and Biochemical Technology at APL **24**(1), 41–51.
- _____, Countermeasures Against Chemical/Biological Attacks in the Built Environment **24**(4), 360–367.
- _____, A New World Is Here: Guest Editor's Introduction **24**(4), 319–320.
- Ko HW, see Carlson
- Kohri K, Latimer CK, Catlett CL, Scheulen JJ, and Kelen GD, The Johns Hopkins Office of Critical Event Preparedness and Response **24**(4).
- Kozuch SF, see Vernon SR
- Krimigis SM, see Williams DJ
- Kroshl WM, and Osborne SR, Multi-Mission Maritime Aircraft Mission Area Analysis **24**(3), 270–275.
- Kusnierkiewicz DY, An Overview of the TIMED Spacecraft **24**(2), 150–155.
- _____, TIMED Mission System Engineering and System Architecture **24**(2), 165–169.
- Kusterer TL, see Devereux WS
- Lafferty PM, see Rodberg EH
- Latimer CK, see Kohri K
- Levy LJ, Systems Analysis and Test and Evaluation at APL **24**(1), 8–18.
- Lilly TC, and Russell BR, The Multi-Mission Maritime Aircraft Design Reference Mission **24**(3), 257–262.
- Linstrom LA, see Devereux WS
- Lombardo JS, The ESSENCE II Disease Surveillance Test Bed for the National Capital Area **24**(4), 327–334.
- Lutz RR, The Multi-Mission Maritime Aircraft Modeling and Simulation Environment **24**(3), 284–291.
- Magruder SF, Evaluation of Over-the-Counter Pharmaceutical Sales As a Possible Early Warning Indicator of Human Disease **24**(4), 349–353.
- Maier-Tyler LL, APL Awards for Publications and Research and Development **24**(4), 388–393.
- Marren KD, see Beisser KB
- Marth PC, TIMED Integrated Electronics Module (IEM) **24**(2), 194–200.
- Mellott MM, and Elsbernd VH, TIMED: From Concept to Realization **24**(2), 133–135.
- Miller RL, Newman FC, and Russell BR, Multi-Mission Maritime Aircraft Airfield Analyses **24**(3), 297–303.
- Newman FC, see Miller RL
- Nylund SR, see Rodberg EH
- Osborne SR, and Prindle BC, Transforming Maritime Patrol and Reconnaissance, **24**(3), 276–283.
- _____, see Kroshl WM
- Plesser KT, A Fresh Look at Maritime Surveillance: Guest Editor's Introduction **24**(3), 235–237.
- Prindle BC, see Osborne SR
- Rodberg EH, Knopf WP, Lafferty PM, and Nylund SR, TIMED Ground System and Mission Operations **24**(2), 209–220.
- Russell BR, see Lilly TC
- _____, see Miller RL
- Russell JM III, see Talaat ER
- _____, see Yee J-H
- Schemm CE, see Garten JF
- Scheulen JJ, see Kohri K
- Scorpio SM, Roger RP, and Brandt A, Simulation of Bio-Agent Release in a Room or Office Space **24**(4), 376–380.
- Semmel RD, An Overview of Information Processing and Management at APL **24**(1), 52–62.
- Sommerer JC, A Synoptic View of APL Science and Technology **24**(1), 2–7.
- Suter JJ, see Bankman IN
- Talaat ER, Yee J-H, Christensen AB, Killeen TL, Russell JM III, and Woods TN, TIMED Science: First Light **24**(2), 142–149.
- Talaat ER, see Yee J-H
- Vernon SR, and Kozuch SF, TIMED Launch Operations, **24**(2), 170–178.
- Williams DJ, Krimigis SM, and Guier WH, George C. Weiffenbach (1921–2003) **24**(2), 226–228.
- Woods TN, see Talaat ER
- _____, see Yee J-H
- Wozniak JJ, Vehicle Technology at APL **24**(1), 19–30.
- Yee J-H, TIMED Mission Science Overview **24**(2), 136–141.
- Yee J-H, Talaat ER, Christensen AB, Killeen TL, Russell JM III, and Woods TN, TIMED Instruments **24**(2), 156–164.
- Yee J-H, see Talaat ER
- Zanetti LJ, Atmospheric, Oceanic, and Space Environment Research at APL **24**(1), 31–40.