

## PUBLICATIONS

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

- Anderson, H. M., Engebretson, M. J., Arnoldy, R. L., Cahill, L. J., and Newell, P. T., "A Statistical Study of Hydromagnetic Chorus Events at Very High Latitudes," *J. Geophys. Res.* **100**, 3681–3692 (1995).
- Belton, K. M., "On-Line Editing at APL," *The Editorial Eye* **18**(2), 3–4 (1995).
- Belton, K. M., "Taking a Team Approach to Publishing," *The Editorial Eye* **18**(2), 1–3 (1995).
- Bohandy, J., Kim, B. F., Moorjani, K., and Adrian, F. J. (APL), and Kaiser, D. (NIST), "Anisotropy in the a–b Plane of a Detwinned  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\gamma}$  Single Crystal," *Physica C* **235–240**, 2038–2039 (1994).
- Burgan, M. W., "The Idea Is the Message," in *Proc. 42nd Ann. Conf. Soc. for Tech. Communication*, Washington, DC, p. 208 (1995).
- Burgan, M. W., "Who Is the Author?" in *Proc. 12th Ann. Conf. Soc. for Tech. Communication*, Washington, DC, pp. 419–420 (1995).
- Butler, M. H., Dakermanji, G., Goliasewski, L. T., Kusnierkiewicz, D. Y., Tarr, J. E., Temkin, D. K., and Carlsson, P. U., "Fault Tolerant Shunt Regulator for a Spacecraft Thermionic Nuclear Reactor," in *Proc. 12th AIP Symp. on Space Nuclear Power and Propulsion*, New York, AIP 324, Part 1, pp. 39–44 (1995).
- Buttigheffer, A., Pick, M., Roelof, E. C., Hoang, S., Mangenay, A., Lanzerotti, L. J., Forsyth, R. J., and Phillips, J. L., "Coronal Electron Stream and Langmuir Wave Detection Inside a Propagation Channel at 4.3 AU," *J. Geophys. Res.* **100**, 3369–3381 (1995).
- Cervero, F. (Univ. of Alcalá de Henares, Madrid, Spain), Meyer, R. A. (APL), and Campbell, J. N. (JHMI), "A Psychophysical Study of Secondary Hyperalgesia: Evidence for Increased Pain to Input from Nociceptors," *Pain* **58**, 21–28 (1994).
- Chapman, R. D., and Monaldo, F. M., "A Novel Wave Height Sensor," *J. Atmos. Oceanic Tech.* **12**(1), 190–196 (1995).
- Decker, R. B., Krimigis, S. M., McNutt, R. L., Jr., Hamilton, D. C., and Collier, M. R., "Latitude-Associated Differences in the Low Energy Charged Particle Activity at Voyagers 1 and 2 During 1991 to Early 1994," in *The High Latitude Heliosphere*, R. G. Marsden (ed.), Kluwer Academic Publishers, The Netherlands, pp. 347–352 (1995).
- Edis, T. (JHU), and Moorjani, K. (APL), "Weak-Link Magnetically Modulated Resistance Response in Granular Superconducting Systems," *Phys. Rev. B* **51**(2), 1124–1132 (1995).
- Farquhar, R. W., and Veverka, J., "Comet Nucleus Tour," in *Proc. IAA Int. Conf. on Low-Cost Planetary Missions*, *Acta Astron.*, Vol. 35, Suppl., pp. 181–191 (1995).
- Farrell, R. A., Stoyanov, B. J., Freund, D. E., and Bird, J. F., *Variational Scattering Techniques*, JHU/APL TG 1388 (1994).
- Freund, D. E., McCally, R. L., and Farrell, R. A., *Light Scattering from Assemblies of Scatterers: Applications to the Cornea of the Eye*, JHU/APL TG 1387 (1994).
- Gloeckler, G., Roelof, E. C., Ogilvie, K. W., and Berdichevsky, D. B., "Proton Phase Space Densities ( $0.5e < E_p < 5$  MeV) at Mid-Latitude from Ulysses SWICS/HI-SCALE Measurements," *Space Sci. Rev.* **72**, 321–326 (1995).
- Goembel, L., and Herrero, F. A., "Anomalous Meridional Thermospheric Neutral Winds in the AE-E NATE Data: Effects of the Equatorial Midnight Pressure Bulge," *Geophys. Res. Lett.* **22**(3), 271–274 (1995).
- Kane, M., Decker, R. B., Mauk, B. H., and Krimigis, S. M., "Latitudinal and Radial Variation of Shock Associated  $\geq 30$  keV Ion Spectra and Anisotropies at Voyagers 1 and 2," in *The High Latitude Heliosphere*, R. G. Marsden (ed.), Kluwer Academic Publishers, The Netherlands, pp. 353–358 (1995).
- Kennedy, T. A., Glaser, E. R., Freitas, J. A., Jr., and Carlos, W. E. (NRL), Khan, M. A. (APA Optics, Inc.), and Wickenden, D. K. (APL), "Native Defects and Dopants in GaN Studied Through Photoluminescence and Optically Detected Magnetic Resonance," *J. Electron. Mater.* **24**(4), 219–223 (1995).
- Korotova, G. I., and Sibeck, D. G., "A Case Study of Transient Event Motion in the Magnetosphere and in the Ionosphere," *J. Geophys. Res.* **100**, 35–46 (1995).
- Kusnierkiewicz, D. Y., "Source Impedance, Transient Response, and Noise Characterization of the TOPAZ 2 Reactors," in *Proc. AIP 12th Symp. on Space Nuclear Power and Propulsion*, New York, AIP 324, Part 1, pp. 45–51 (1995).
- Lanzerotti, L. J., MacLennan, C. G., Gold, R. E., Armstrong, T. P., Roelof, E. C., Krimigis, S. M., Simnett, G. M., Sarris, E. T., Anderson, D. A., Pick, M., and Lin, R. P., "Measurement of Anomalous Cosmic Ray Oxygen at Heliolatitudes  $-25^\circ$  to  $-64^\circ$ ," *Geophys. Res. Lett.* **22**, 333–336 (1995).
- Loesch, J. E., "Quality Service Through Employee-Defined Performance Management," in *Proc. IFMA 1995 Winter Best Practices Forum*, Los Alamos, NM, pp. 151–192 (1995).
- McNutt, R. L., Jr., Krimigis, S. M., Cheng, A. F., Gold, R. E., Farquhar, R. W., Roelof, E. C., Coughlin, T. B., Santo, A. G., Bokulic, R. S., Reynolds, E. L., Williams, B. D., and Willey, C. E., "Mission to the Sun: The Solar Pioneer," in *Proc. IAA Int. Conf. on Low-Cost Planetary Missions*, *Acta Astron.*, Vol. 35, Suppl., pp. 247–255 (1995).
- Mendel, L. L. (Univ. Mississippi), Hamill, B. W. (APL), Crepeau, L. J. (Navy Experimental Diving Unit, Panama City, FL), and Fallon, E. (Brooke Army Medical Center, San Antonio, TX), "Speech Intelligibility Assessment in a Helium Environment," *J. Acoust. Soc. Am.* **97**(1), 628–636 (1995).
- Newell, P. T., Sibeck, D. G., and Meng, C.-I., "Penetration of the Interplanetary Magnetic Field  $B_z$  and Magnetosheath Plasma into the Magnetosphere: Implications for the Predominant Magnetopause Merging Site," *J. Geophys. Res.* **100**, 235–243 (1995).
- Nhan, E., Lafferty, P. M., Stilwell, R. K., and Chao, K., "Radio-Frequency Connector and Interconnect Reliability in Spaceborne Applications," *IEEE Trans. Components, Packaging, and Manufacturing Technology, A* **18**(2), 163–169 (1995).
- Ohtani, S.-I., Potemra, T. A., Newell, P. T., Zanetti, L. J., Iijima, T., Watanabe, M., Blomberg, L. G., Elphinstone, R. D., Murphree, J. S., and Yamauchi, M., "Four Large-Scale Field-Aligned Current Systems in the Dayside High-Latitude Region," *J. Geophys. Res.* **100**, 137–153 (1995).
- Ohtani, S.-I., Potemra, T. A., Newell, P. T., Zanetti, L. J., Iijima, T., Watanabe, M., Yamauchi, M., Elphinstone, R. D., de la Beaujardiere, O., and Blomberg, L. G., "Simultaneous Preenoon and Postnoon Observations of Three Field-Aligned Current Systems from Viking and DMSP-F7," *J. Geophys. Res.* **100**, 119–136 (1995).
- Peck, A. D., "The Role of Graphic Art in Scientific Communication," in *Proc. 42nd Ann. Conf. Soc. for Tech. Communication*, Washington, DC, pp. 425–426 (1995).
- Pick, M., Buttigheffer, A., Herdraon, A., Armstrong, T. P., Roelof, E. C., Hoang, S., Lanzerotti, L. J., Simnett, G. M., and Lemen, J., "Ulysses Observations of a Coronal Origin Particle Event at  $32^\circ$  South Heliographic Latitude," *Space Sci. Rev.* **72**, 315–320 (1995).
- Potemra, T. A., "Kristian Birkeland, A Man Well Ahead of His Time," published in *Kristian Birkeland, Memnesket og forskeren* by the Norsk Hydro Corporation for the Norwegian National Bank to commemorate the new issue of the 200-kroner banknote with Birkeland's portrait (Nov 1995).
- Raney, R. K., *Glossary*, in *SAR. 101—Radar Eyes in the Sky*, More than 100 Radar Remote Sensing Images, Applications on CD-ROM for PC Users, D. Werle (ed.), Canada Centre for Remote Sensing, Ottawa, Canada (Mar 1995).



- Reiner, M. J., Anderson, K. A., Roelof, E. C., Armstrong, T. P., Hospodarsky, G. B., Fainberg, J., Stone, R. G., Lanzerotti, L. J., Gurnett, D. A., Pick, M., Phillips, J. L., and Forsyth, R., "Ulysses/Galileo Observations of Type III Radio Bursts and Associated *in-situ* Electrons and Langmuir Waves," *Space Sci. Rev.* **72**, 261–266 (1995).
- Roelof, E. C., and Sibeck, D. G., Reply to Comments by S. M. Petrinec and C. T. Russell on "Magnetopause Shape as a Bivariate Function of Interplanetary Magnetic Field B, and Solar Wind Dynamic Pressure," *J. Geophys. Res.* **100**, 1903–1910 (1995).
- Roelof, E. C., Simnett, G. M., and Armstrong, T. P., "IMF Connection for Solar Energetic Protons Observed at Ulysses via Recurrent Mid-Latitude Solar Wind Rarefaction Regions," *Space Sci. Rev.* **72**, 309–314 (1995).
- Sadowsky, J., Weintraub, D. M., Feldberg, I. E., and Diamond, S. D., "A Synthetic Environment System for Planning, Education, and Data Visualization," in *Proc. 28th IEEE Asilomar Conf. on Signals, Systems, and Computers*, Los Alamitos, CA, pp. 1367–1371 (1994).
- Sibeck, D. G., and Newell, P. T., "Interplanetary Magnetic Field Orientation for Transient Events in the Outer Magnetosphere," *J. Geophys. Res.* **100**, 175–183 (1995).
- Simnett, G. M., and Roelof, E. C., "Reverse Shock Acceleration of Electrons and Protons at Mid-Heliolatitudes from 5.3–3.8 AU," *Space Sci. Rev.* **72**, 303–308 (1995).
- Simnett, G. M., Sayle, K. A., Tappin, S. J., and Roelof, E. C., "Corotating Particle Enhancements Out of the Ecliptic Plane," *Space Sci. Rev.* **72**, 327–330 (1995).
- Thompson, M. W., and Pandolfini, P. P., "The DCAF: A High-Enthalpy, Long-Duration, Direct-Connect Scramjet Test Facility," in *Proc. AIAA 6th Int. Aerospace Planes Conf.*, Chattanooga, TN, AIAA 95-6130, pp. 1–9 (1995).
- Treede, R.-D., Meyer, R. A., Raja, S. N., and Campbell, J. N., "Evidence for Two Different Heat Transduction Mechanisms in Nociceptive Primary Afferents Innervating Monkey Skin," *J. Physiol.* **483**(3), 747–758 (1995).
- Veliadis, J. V. D. (JHU), Ding, Y. J. (Bowling Green State Univ.), Khurgin, J. B. (JHU), and Wickenden, D. K. (APL), "Investigation of the Temperature Dependent Recombination Processes in Periodic Four-Narrow-Asymmetric-Coupled-Quantum-Well Structures," *J. Luminescence* **63**, 55–61 (1995).
- Wei, D., Killeen, T. L., Burns, A. G., Johnson, R. M., Emery, B. A., Roble, R. G., Winningham, J. D., and Gary, J. B., "One-Dimensional Hybrid Satellite Track Model for the Dynamics Explorer 2 (DE 2) Satellite," *J. Geophys. Res.* **100**, 1611–1624 (1995).
- Xu, D., Kivelson, M. G., Walker, R. J., Newell, P. T., and Meng, C.-I., "Interplanetary Magnetic Field Control of Mantle Precipitation and Associated Field-Aligned Currents," *J. Geophys. Res.* **100**, 1837–1846 (1995).

## PRESENTATIONS

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

- Apel, J. R. (APL), Etkin, V., and Smirnov, A. (Russian Acad. of Science), and Carande, R. (JPL), "A Multi-Parameter View of an Upwelling Event Off the Coast of Ireland as Seen with Synthetic Aperture Radars," 2nd Topical Symp. on Combined Optical-Microwave Earth and Atmosphere Sensing, Atlanta, GA (3–5 Apr 1995).
- Bargeron, C. B., Phillips, T. E., and Benson, R. C., "Electrical Conductance of Condensed Electronic Package Gases," American Physical Society Meeting, San Jose, CA (20–24 Mar 1995).
- Burgan, M. W., "The Idea Is the Message," 42nd Ann. Conf. Soc. for Tech. Communication, Washington, DC (23–26 Apr 1995).
- Burgan, M. W., "Who Is the Author?" 42nd Ann. Conf. Soc. for Tech. Communication, Washington, DC (23–26 Apr 1995).
- Butler, M. H., Dakermanji, G., Goliasewski, L. T., Kusnierkiewicz, D. Y., Tarr, J. E., Temkin, D. K., and Carlsson, P. U., "Fault Tolerant Shunt Regulator for a Spacecraft Thermionic Nuclear Reactor," 12th AIP Symp. on Space Nuclear Power and Propulsion, Albuquerque, NM (8–12 Jan 1995).
- Hoffman, E. J., "Technical Risk Management in the APL Space Department," NASA/Goddard Spaceflight Center Workshop on Small Satellites, Greenbelt, MD (8–9 Feb 1995).
- Krimigis, S. M., "APL in Space: 35 Years After Transit," Maryland Space Business Roundtable, Greenbelt, MD (24 Jan 1995).
- Krimigis, S. M., Panel Discussion with Laboratory Directors, Space Studies Board, The Future of Space Science, Task Group on Alternative Organizations, National Academy of Sciences, Washington, DC (2–3 Feb 1995).
- Kusnierkiewicz, D. Y., "Source Impedance, Transient Response, and Noise Characterization of the TOPAZ 2 Reactors," 12th AIP Symp. on Space Nuclear Power and Propulsion, Albuquerque, NM (8–12 Jan 1995).
- Loesch, J. E., "Quality Service Through Employee-Defined Performance Management," IFMA Research Committee Winter Best Practices Forum, Los Alamos, NM (22–23 Feb 1995).
- Lui, A. T. Y., "A Current-Driven Instability for Substorm Expansion Onsets and Intensifications," Cambridge Symp./Workshop, Bermuda (20–25 Feb 1995).
- Lui, A. T. Y., "Current Sheet Characteristics in the Magnetotail," Cambridge Symp./Workshop, Bermuda (20–25 Feb 1995).
- Lui, A. T. Y., "A Synthesis Model for Magnetospheric Substorms," Boston Univ., Boston, MA (23 Mar 1995).
- Mauk, B. H., "Hot Plasma Parameters of Jupiter's Inner Magnetosphere," Goddard Space Flight Center, Greenbelt, MD (17 Mar 1995).
- Maurer, R. H., Bargeron, C. B., Nhan, E., and Phillips, T. E., "Reliability of Low-Power Laser Diodes," SPIE—Photonics for Space Environments III, Orlando, FL (17–21 Apr 1995).
- Moorjani, K., "High  $T_c$  Materials as Weakly-Linked Superconducting Networks," UMBC Physics Seminar, Baltimore, MD (12 Apr 1995).
- Ohtani, S.-I., "Substorm Invitation in the Near-Earth Tail," ISAS, Tokyo, Japan (1 Feb 1995).
- Ohtani, S.-I., "Freja and UARS Contributions to ISTEP," Geotail Meeting, Kyoto, Japan (2 Feb 1995).
- Ohtani, S.-I., "Magnetic Fluctuations Associated with Substorm Trigger," Solar Terrestrial Environmental Lab., Toyokawa, Japan (8 Feb 1995).
- Pace, D. K., "Model & Simulation Verification, Validation, and Accreditation (M&S VV&A)," PRC '95 Tech. Seminar, McLean, VA (21–22 Mar 1995).
- Pace, D. K., "Issues in Validating Simulations with Heterogeneous Levels of Fidelity," ARPA-Sponsored 2nd High-Fidelity Modeling and Simulation Workshop in the DIS Environment, JHU/APL, Laurel, MD (23–24 Mar 1995).
- Paranicas, C. P., and Cheng, A. F., "Charged Particle Invariants with Planetary Applications," University of Iowa, Iowa City (23 Jan 1995).
- Paranicas, C. P., and Cheng, A. F., "Satellite Microsignatures at Outer Planets," University of Iowa, Iowa City (23 Jan 1995).
- Peck, A. D., "The Role of Graphic Art in Scientific Communication," 42nd Ann. Conf. Soc. for Tech. Communication, Washington, DC (23–26 Apr 1995).
- Posner, A. S., Landshof, J. A., Williams, K. E., Waddell, R. L., and Strikwerda, T. E., "NASTIE and the MOAT: Joint Development of the NEAR Attitude System Test and Integration Equipment (NASTIE) with the Mission Operations Analysis Toolkit (MOAT) for the NEAR Mission," 18th Annual American Astronautical Society (AAS) Guidance and Control Conf., Keystone, CO (1–5 Feb 1995).
- Raney, R. K., "A New Radar Altimeter for Ice Sheet Monitoring," NASA Headquarters, Washington, DC (31 Jan 1995).
- Raney, R. K., "A Delay/Doppler Radar Altimeter for Ice Sheet Monitoring," DC Altimeter User Group, JHU/APL, Laurel, MD (7 Feb 1995).
- Raney, R. K., "Delay/Doppler Compensation: A New Concept for Radar Altimetry," Seminar at Office of Naval Research (ONR) and Naval Research Laboratory (NRL), Washington, DC (22 Mar 1995).
- Rust, D. M., "The Eruption of Magnetic Flux from the Sun," Jet Propulsion Laboratory, Pasadena, CA (9 Jan 1995).

- Rust, D. M., "The Eruption of Magnetic Flux from the Sun," Solar and Astrophysics Laboratory Seminar, Lockheed Palo Alto Res. Laboratory, Palo Alto, CA (11 Jan 1995).
- Rust, D. M., "The Eruption of Magnetic Flux from the Sun," Dept. of Geophys., Univ. of Washington, Seattle, WA (13 Jan 1995).
- Rust, D. M., "Magnetic Helicity in the Solar Atmosphere," Princeton Plasma Physics Laboratory, Princeton, NJ (17 Jan 1995).
- Sibeck, D. G., "A Case Study of Plasma and Magnetic Field Fluctuations in the Day-side Magnetosheath," University of California, Los Angeles (10 Feb 1995).
- Sibeck, D. G., "Magnetosheath Plasma Fluctuations," Inst. Space Res., Moscow, Russia (24 Feb 1995).
- Sibeck, D. G., "Recent Progress in Geotail Research," Inst. of Space Res., Moscow, Russia (3 Mar 1995).
- Sibeck, D. G., "Magnetosheath Plasma Fluctuations," Polar Geophysical Inst., Aptity, Russia (7 Mar 1995).
- Thompson, M. W., and Pandolfini, P. P., "The DCAF: A High-Enthalpy, Long-Duration, Direct-Connect Scramjet Test Facility," AIAA 6th Int. Aerospace Planes Conf., Chattanooga, TN (3-7 Apr 1995).
- 21 Apr: "Structure of HIV-1 Proteins by Nuclear Magnetic Resonance," M. S. Summers, Dept. of Chemistry, UMBC.
- 28 Apr: "Corporate Transformations: Culture, Strategy, and Competitiveness," E. Schoenberger, Dept. Geography and Environmental Engineering, JHU.
- 5 May: "Destruction of the World's Chemical Agent Stockpiles: Alternative Technologies and Political Issues," J. J. Valdes, Edgewood RD&E Center, Aberdeen Proving Ground, MD.
- 12 May: "High Temperature Superconductors: Probing the Magnetic Flux Lines," C. M. Lieber, Dept. of Chemistry, Harvard University.
- 19 May: "Rethinking the Role of Science in Risk Evaluation," E. D. Elliott; Fried, Frank, Harris, Shriver & Jacobson, Washington, DC.
- 26 May: "Advanced Natural Gas Vehicle Development," J. Wozniak, APL.

## COLLOQUIA

The following topics were recently presented at the weekly APL Colloquium:

- 7 Apr 1995: "Mathematical Complexity of Simple Economics," D. Saari, Dept. of Mathematics, Northwestern University.
- 14 Apr: "APL's Participation in the V-2 Era," D. DeVorkin, National Air & Space Museum, Washington, DC.