

PUBLICATIONS

(February–October 1986)

- Allen, K. R., and Joseph, R. I., "Electric and Magnetic Fields of an Idealized Brain," in *Proc. 39th Annual Conf. on Engineering in Medicine and Biology*, p. 112.
- Armbruster, S. A., Collison, T. H., Dougherty, J. M., "The Diagnostic Reporting System," in *Proc. 39th Annual Conf. on Engineering in Medicine and Biology*, p. 259.
- Beal, R. C., Monaldo, F. M., Tilley, D. G., and Irvine, D. E. (APL), Walsh, E. J., Jackson, F. C., Hancock, D. W., III, and Hines, D. E. (NASA/GSFC), Swift, R. N. (EG&G Analytical Services), Gonzalez, F. I. (NOAA Pacific Marine Environmental Lab.), Lyzenga, D. R. (Environmental Res. Inst. of Michigan), and Zambresky, L. F. (Fleet Numerical Oceanography Center), "A Comparison of SIR-B Directional Ocean Wave Spectra with Aircraft Scanning Radar Spectra," *Science* **232**, 1531-1535.
- Blum, B. I., "The Application of Knowledge to Medical Computing," in *Proc. 39th Annual Conf. on Engineering in Medicine and Biology*, p. 163.
- Bohandy, J., Kim, B. F., and Adrian, F. J., "Metal Deposition from a Supported Metal Film Using an Excimer Laser," *J. Appl. Phys.* **60**, 1538-1539.
- Bythrow, P. F. (APL), Doyle, M. A. (Regis College), Potemra, T. A., and Zanetti, L. J. (APL), Huffman, R. E. (Air Force Geophysics Lab.), Meng, C.-I. (APL), Hardy, D. A., and Rich, F. J. (Air Force Geophysics Lab.), and Heelis, R. A. (Univ. Texas/Dallas), "Multiple Auroral Arcs and Birkeland Currents: Evidence for Plasma Sheet Boundary Waves," *Geophys. Res. Lett.* **13**, 805-808.
- Campbell, J. N. (JHMI), and Meyer, R. A. (APL), "Primary Afferents and Hyperalgesia," in *Spinal Afferent Processing*, T. L. Yaksh, ed., Plenum Press, New York, pp. 59-81.
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- Decker, R. B. (APL), and Vlahos, L. (Univ. Thessaloniki), "Numerical Studies of Particle Acceleration at Turbulent, Oblique Shocks with an Application to Prompt Ion Acceleration During Solar Flares," *Astrophys. J.* **306**, 710-729.
- Eberhart, R. C., Fischell, R. E., Hogrefe, A. F., Mantel, S., and Sanders, K. H., "Physiologic Acquisition and Telemetry System for Space Shuttle," in *Proc. 39th Annual Conf. on Engineering in Medicine and Biology*, p. 332.
- Ehrlich, L. W., "The Numerical Schwarz Alternating Procedure and SOR," *SIAM J. Sci. Stat. Comput.* **7**, 989-993.
- Engebretson, M. J. (Augsburg College), Meng, C.-I. (APL), Arnoldy, R. L. (Univ. New Hampshire), Cahill, L. J., Jr. (Univ. Minnesota), "Pc 3 Pulsations Observed Near the South Polar Cusp," *J. Geophys. Res.* **91**, 8909-8918.
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- Monaldo, F. M., "A Procedure for Estimation of Two-Dimensional Ocean Height-Variance Spectra from SAR Imagery," in *Proc. ERS-1 Wind and Wave Calibration Workshop SP-262*, European Space Agency, pp. 123-129.
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- Plung, D. L. (Westinghouse Electric Corp.), and Moore, L. K. (APL), "How to Publish an Anthology," *COMMUGUIDE* **1**, IEEE Professional Communication Soc., 1-19.
- Reinhard, R. (European Space and Technology Centre), Roelof, E. C., and Gold, R. E. (APL), "Separation and Analysis of Temporal and Spatial Variations in the 10 April 1969 Solar Flare Particle Event," in *The Sun and the Heliosphere in Three Dimensions*, R. G. Marsden, ed., D. Reidel Pub., Dordrecht, Holland, pp. 297-303.
- Roelof, E. C., "Three-Dimensional Gradients of Solar Particles Inside 5 AU," in *The Sun and the Heliosphere in Three Dimensions*, R. G. Marsden, ed., D. Reidel Pub., Dordrecht, Holland, pp. 331-340.
- Rueger, L. J., and Chiu, M. C., "Long Term Performance of the Johns Hopkins Built Hydrogen Maser," in *Digest 1986 Conf. on Precision Electromagnetic Measurements*, pp. 181-182.
- Rust, D. M. (APL), Machado, M. E. (Univ. Alabama), Avrett, E. H. (Smithsonian Astrophysical Observatory), Falciana, R. (Observatorio Astrofisico di Arcetri), Fang, C. (Nanking Univ.), Gesztelyi, L. (Heliophysical Observatory, Debrecen, Hungary), Henoux, J.-C. (Observatoire de Paris), Hiei, E. (Tokyo Astronomical Observatory), Neidig, D. F. (Air Force Geophysics Lab.), Sotirovski, P. (Observatoire de Meudon), Svestka, Z. (Netherlands Space Research Lab.), and Zirin, H. (Cal. Tech.), "White Light Flares and Atmospheric Modeling," in *The Lower Atmosphere in Solar Flares*, D. F. Neidig, ed., National Solar Observatory, Sunspot, N.M., pp. 483-488.
- Rust, D. M., "On the Causes of White-Light Flares," in *The Lower Atmosphere in Solar Flares*, D. F. Neidig, ed., National Solar Observatory, Sunspot, N.M., pp. 282-296.
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- Tolchin, S. G. (APL), and Barta, W. L. (JHMI), "Local Network and Distributed Processing Issues in the Johns Hopkins Hospital," *J. Med. Sys.* **10**, 339-353.
- Tolchin, S. G., "Overview of an Architectural Approach to the Development of the Johns Hopkins Hospital Distributed Clinical Information System," *J. Med. Sys.* **10**, 321-338.
- Volponi, J. V., and McLean, W. J. (Sandia National Lab.), Fristrom, R. M. (APL), and Munir, Z. A. (Univ. California/Davis), "Determination of H, OH, and O Species Concentrations by Deuterium Scavenging in Low Pressure Acetylene-Oxygen-Argon Flames," *Combust. Flame* **65**, 243-248.
- Walker, A. D. M. (Univ. Natal), Greenwald, R. A., and Baker, K. B. (APL), "HF Radar Observations of Pulsations Near the Magnetospheric Cusp," *J. Geophys. Res.* **91**, 8919-8928.
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- Zanetti, L. J., and Potemra, T. A., "The Relationship of Birkeland and Ionospheric Current Systems to the Interplanetary Magnetic Field," *Solar Wind—Magnetosphere Coupling*, Terra Pub./Reidel Pub., pp. 547-562.

PRESENTATIONS (April-October 1986)

- Appourchaux, T., Hill, F., and Rust, D. M., "Rotation in the Solar Convection Zone Inferred from Fabry-Period Observations of the 5-Minute Oscillations," *IAU Symp. No. 123, Advances in Helio and Astroseismology*, Aarhus, Denmark (Jul 7-11).
- Babin, S. M., and Rowland, J. R., "Meteorological Studies of Radar Ducting Phenomena," *URSI/IEEE AP-S Symp.*, Philadelphia (Jun 8-13).
- Benson, R. C., Romensko, B. M., Nall, B. H., deHaas, N., and Charles, H. K., Jr., "Current-Leakage Failures in Hybrid Microcircuits," 1986 Minnowbrook Micro-

- electronics Workshop, Blue Mountain Lake, N.Y. (Sep 9-12).
- Bird, J. F., Farrell, R. A., Gray, E. P., and Stoyanov, B. J., "Trial Functions for Scattering from Surfaces of Arbitrary Roughness and Variational Test Variations," Scientific Conf. on Obscuration and Aerosol Research, Aberdeen, Md. (Jun 26).
- Bokulic, R. S., "Signal-to-Noise Ratio Performance of the Sawtooth Phase Detector When Demodulating PM Subcarriers," Intl. Telemetering Conf., Las Vegas (Oct 15).
- Burgan, M. W., "Computer Graphics for Less than \$200K," Annual Conf., Research Institute Publishing Executives, Elkridge, Md. (Oct 19-22).
- Burgan, M. W., "Corporate Problem-Solving Techniques: Time-Forced Ad Hoc Committees," Annual Conf., Research Institute Publishing Executives, Elkridge, Md. (Oct 19-22).
- Bythrow, P. F., "Shear Instability at the Plasma Sheet/Boundary Layer Interface: Recent Developments," Intl. Symp. on Polar Geomagnetic Phenomena, Souzdal, U.S.S.R. (May 23-Jun 1).
- Bythrow, P. F., "Wave-Like Aurorae in the Pre-Midnight Sector: Implications for a Boundary Layer Model of Substorms," Seminar, Air Force Geophysics Laboratory, Hanscom AFB, Mass. (Sept.).
- Cheng, A. F., "Acceleration Mechanisms in Rapidly Rotating Magnetospheres," 2nd Neil Brice Memorial Symp. on Magnetospheres of the Outer Planets, Univ. Iowa/Iowa City (Aug 31-Sep 5).
- Cheng, A. F., "Magnetosphere of Mercury: Implications of the Sodium Exosphere," Mercury Conf., Univ. Arizona, Tucson (Aug 5-9).
- Christon, S. P., "Magnetospheric Charged Particle Measurements at Mercury," Mercury Conf., Univ. Arizona, Tucson (Aug 5-9).
- Danchik, R. J., and Rueger, L. J., "Navigation Systems in the Year 2000 and Beyond," Conf., Royal Institute of Navigation, Brighton, England (Sep 30-Oct 2).
- Farrell, R. A., Barger, C. B., Deters, O. J., and McCally, R. L., "Thermal Damage to Corneal Cells," 7th Intl. Congress of Eye Research, Nagoya, Japan (Sep 25-Oct 1).
- Fraeman, M. E., Hayes, J. R., Williams, R. L., and Zaremba, T., "Johns Hopkins University/Applied Physics Laboratory 32-Bit Forth Chip Architecture," Rochester Forth Conf., Rochester, N.Y. (June).
- Friedman, M. H., "A Primitive Model of Intimal Thickening under Shear," 11th Annual Hugh Lofland Conf. on Arterial Wall Metabolism, Bolton Landing, N.Y. (May 16).
- Friedman, M. H., "Correlation of Human Intimal Thickness with Hemodynamic Shear," Scientific Symp. on the Occasion of the 600th Anniversary of the University of Heidelberg, Heidelberg, FRG (Jul 9).
- Friedman, M. H., "How Hemodynamic Forces in the Human Affect the Topography and Development of Atherosclerosis," Intl. Workshop on the Evolution of the Human Atherosclerotic Plaque, Rockville, Md. (Sep 21).
- Gerber, M. (Univ. Stellenbosch), Irvine, D. (APL), and Shemdin, O. (JPL), "Giant Waves on a Shearing Current," 20th Intl. Conf. on Coastal Engineering, Taipei (Nov 9-14).
- Gray, E. P., and Bird, J. F., "Wave Scattering by a Sinusoidal Surface: A Variational Approach," National Radio Science Meeting, Philadelphia (Jun 6-13).
- Goldhirsh, J. (APL), Vogel, W. J. (Univ. Texas), Rowland, J. R. (APL), and Torrence, G. W. (Univ. Texas), "Tree Attenuation Statistics at 869 MHz Derived from Helicopter-Mobile Vehicle Measurements," URSI/IEEE AP-S Symp., Philadelphia (Jun 9-13).
- Mauk, B. H., and Krimigis, S. M., "Sources of Ring Current Density Within Outer Planet Magnetospheres," 2nd Neil Brice Memorial Symp. on Magnetospheres of the Outer Planets, Univ. Iowa/Iowa City (Sep 1-5).
- Mattox, D. E. (JHMI), Duncan, D. D., and Tayag, T. J. (APL), "Measurement of Oscillatory Movement with a Laser Interferometer," Crowe Symp. on New Perspectives in Hearing Science and Rehabilitation, Baltimore (Oct 2-3).
- McCally, R. L., Freund, D. E., and Farrell, R. A., "Calculations of Light Scattering from EM of Swollen Corneas by Direct Summation of Fields," Spring Meeting, Association for Research in Vision and Ophthalmology, Sarasota (Apr 28-May 2).
- McEntire, R. W., "Results of the AMPTE Program," SDIO/IST Second Workshop on Pathways to Space Experimentation, Orlando (Jun 17-18).
- Meng, C.-I., "Review of UV Auroral Imaging Work," Meeting on Atmospheric Studies by Optical Methods, London, England (Aug 17-22).
- Meyer, R. A. (APL), Campbell, J. N., and Raja, S. N. (JHMI), "Hyperalgesia Following Peripheral Nerve Injury," Symp. on the Effects of Injury on the Somatosensory System, Mount Hood, Ore. (July).
- Meyer, R. A., "Peripheral Neural Signal for Pain," 15th Annual Meeting, American Academy of Thermology, Baltimore (June).
- Michel, A. N. (Univ. Notre Dame), and Oppenheimer, E. P. (APL), "Application of Interval Analysis Techniques to the Parameter Tolerance Problem for Linear Dynamical Systems," Annual Allerton Conf. on Circuits and Systems Theory, Urbana, Ill. (Oct 1-3).
- Mitchell, D. G., "Energetic Neutral Atom Imaging," Intl. Symp. on Plasma-Gas Interactions, Guenzburg, FRG (Sep 21-27).
- Ondercin, D. G., and Fuechsel, P. G., "Bio-Optical Measurements in the Northeast Pacific," Ocean Optics VIII Conf., Orlando (April).
- Palmer, R. E., and Klauda, R. J., "Sensitivity of Blueback Herring Eggs and Yolk-Sac Larvae to Varying Duration Pulses of Acid and Inorganic Aluminum in Soft Fresh Water," Annual Meeting, American Fisheries Society, Providence (Sep 15).
- Parker, J. G., "Optical Detection of the Photodynamic Production of Singlet Oxygen *In Vivo*," 6th Annual Meeting, American Society for Laser Medicine and Surgery, Boston (May 24-26).
- Potember, R. S., Hoffman, R. C., Hu, H. S., Cocchiaro, J. E., Viands, C. A., and Poehler, T. O., "Electronic Devices from Conducting Organics and Polymers," 2nd Intl. Polymer Conf., Tokyo (Aug 18-21).
- Potemra, T. A., "Characteristics of Birkeland Currents," Intl. Symp. on Polar Geomagnetic Phenomena, Souzdal, U.S.S.R. (May 23-Jun 1).
- Raja, S. N., Manning, D. C., and Campbell, J. N. (JHMI), and Meyer, R. A. (APL), "Bradykinin Sensitizes Nociceptors to Heat," Substance P and Neurokinins Symp., Montreal (July).
- Reilly, J. P., "Determining Acceptability of Power Frequency Electric Field Induced Shock," Scientific Conf. on Electropathology, Freiburg, FRG (Sep 11-13).
- Reilly, J. P., "Transient Spark Discharge Exposures," Dosimetry Workshop, 8th Annual Meeting, Bioelectromagnetics Society, Madison (Jun 1-5).
- Roelof, E. C., "Imaging the Ring Current With Energetic Neutral Atoms," Marshall Space Flight Center, Huntsville (May 13-15).
- Roelof, E. C., "Simulation of ENA Images of the Magnetosphere and Comparison With ISEE Results," Intl. Symp. on Plasma-Gas Interactions, Guenzburg, FRG (Sep 21-27).
- Rust, D. M., "Solar Oscillation Observing Techniques," Space Research Inst., Moscow (Jun 18).
- Rust, D. M., "Science Application of a Prototype SAMEX Magnetograph," Conf. on Scientific Uses of the SAMEX Satellite System, Boulder (Sep 25).
- Sarabun, C. C., Jr., "Internal Waves in the Chesapeake Bay," Seminar, Univ. Rhode Island Graduate School of Oceanography, Kingston (Apr 16).
- Sarabun, C. C., Jr., "Internal Waves, Ship Waves and Things That Alias in the Night," Seminar, Chesapeake Bay Institute, Shady Side (Aug 1).
- Schenkel, F. W., Ogorzalek, B. S., Gardner, R. R., Hutchins, R. A. (APL), Huffman, R. E., and Larrabee, J. C. (Air Force Geophysics Lab.), "Simultaneous Multi-Spectral Narrow Band Auroral Imagery from Space (1150 Å-6300 Å)," 30th Annual Intl. Tech. Symp. on Optical and Optoelectronic Applied Sciences and Engineering, San Diego (Aug 17-22).
- Thomas, M. E., Joseph, R. I., and Tropf, W. J., "Infrared Transmission Properties of Sapphire, Sinel, and Yttria as a Function of Temperature," 30th Annual Intl. Tech. Symp. on Optical and Optoelectronic Applied Sciences and Engineering, San Diego (Aug 18-19).
- Tossmann, B. E. (APL), and Weller, H. W. (Ford Aerospace & Communications Corp.), "Subcontract Management in a Technically Dynamic Environment—GEOSAT-A Mission Operations A Case Study," Intl. Conf., American Society for Engineering Management, Crystal City, Va. (Sep 23).
- Vasholz, D., "Random String Models of Oceanic Dye Dispersion," Seminar, MIT Dept. of Earth and Planetary Sciences, Cambridge (Apr 7).

- Vogel, W. J. (Univ. Texas), Goldhirsh, J. (APL), Torrence, G. W. (Univ. Texas), and Rowland, J. R. (APL), "Remote Sensing of Tree Attenuation at 870 MHz along Simulated Earth-Satellite Paths," 1986 Intl. Geoscience and Remote Sensing Symp., Zurich (Sep 8-11).
- Wilkinson, W. O., and Fox, H. G., "West Chamber Cryopump System Upgrade Project," 33rd Meeting, AIAA Working Group on Space Simulation, Ottawa (Sep 22-25).
- Wilkinson, W. O., and Fox, H. G., "Computer Aided Thermal Test System (CATTS)," 33rd Meeting, AIAA Working Group on Space Simulation, Ottawa (Sep 22-25).

The following papers were presented at the Spring Meeting of the American Geophysical Union, Baltimore (May 19-23, 1986):

- Erlandson, R. E. (APL), Cahill, L. J., Jr. (Univ. Minnesota), Pollock, C. J., and Arnoldy, R. L. (Univ. New Hampshire), "Observations and Simulations of Electrostatic Ion Waves Excited by an Artificial Ion Beam in the Ionosphere";
- Goodrich, C. C. (Univ. Maryland), Mankofsky, A. (Science Applications International), and Lui, A. T. Y. (APL), "Hybrid Simulations of the AMPTE Lithium and Barium Releases in the Solar Wind";
- Papadopoulos, K. (Science Applications International), Huba, J. D., and Fedder, J. A. (Naval Research Lab.), and Lui, A. T. Y. (APL), "Collisionless Coupling in the AMPTE Artificial Comet and Its Relevance to Cometary Plasmas."

The following papers were presented at the XXVI COSPAR Meeting, Toulouse, France, (Jun 30-Jul 12, 1986):

- Cahill, L. J., Jr. (Univ. Minnesota), Erlandson, R. E. (APL), Arnoldy, R. L., and Pollock, C. J. (Univ. New Hampshire), "Plasma Waves Generated in the Ionosphere by Argon Ion Beams";
- Mauk, B. H., and Meng, C.-I., "Plasma Injection During Substorms";
- Mitchell, D. G., and Williams, D. J. (APL), Lundin, R. (Kiruna Geophysical Inst.), Cattell, C. A., Mozer, F. S., Elphic, R. C., and Russell, C. T. (Univ. Calif.), "Pulsations in Magnetospheric Ion Anisotropies at 6 to 20 R_E , Observations from ISEE-1";
- Potemra, T. A., Zanetti, L. J. (APL), and Gustafsson, G. (Uppsala Ionospheric Observatory), and Acuña, A. (NASA/GSFC), "First VIKING Results: Magnetic Field";
- Sibeck, D. G., McEntire, R. W., and Krimigis, S. M., "Butterfly PAD's in the Day-side Inner Magnetosphere: Evidence for Drift Shell Splitting."

The following papers were presented at the URSI Commission F Open Symp. on Wave Propagation and Remote Sensing, Durham, N.H. (Jul 28-Aug 1, 1986):

- Dockery, G. D., "Modeling Electromagnetic Wave Propagation in the Troposphere Using the Parabolic Equation";
- Gray, E. P., and Bird, J. F., "A Variational Approach to Scattering from the Ocean Surface: A Sinusoidal Model";
- Vogel, W. J. (Univ. Texas), Goldhirsh, J. (APL), Torrence, G. W. (Univ. Texas), and Rowland, J. R. (APL), "Tree Attenuation

Measurements at 870 MHz Along Simulated Earth-Satellite Paths."

The following papers were presented at the NATO Electromagnetic Silencing Symp., Rome (Oct 6-10, 1986):

- Hart, L. W., Keys, G. S., and Chambers, W. M., "Laser Tracking for Magnetic Ranging";
- Jose, M. J., Meritt, J. W., and Hart, L. W., "Design and Implementation of a Computer Graphics System for Managing Magnetic Silencing Facilities";
- Vasholz, D. P., Agnello-Restione, J. S., Jose, M. J., and Hart, L. W., "Design and Implementation of a CAD System for Predicting the Magnetic Signature of Minesweepers."

COLLOQUIA

- Sep 25, 1986 — "Chernobyl and the Future of Nuclear Energy," A. M. Weinberg, Institute for Energy Analysis.
- Oct 3 — "Magnetospheres of the Outer Planets," A. F. Cheng, APL.
- Oct 10 — "Scientific Discovery: A Psychological Account," H. A. Simon, Carnegie-Mellon University.
- Oct 17 — "Quasicrystals," P. J. Steinhardt, University of Pennsylvania.
- Oct 24 — "Relaxation in Complex Systems," J. Klafter, Exxon Research Laboratories.
- Oct 31 — "Progress Towards a Tokamak Fusion Reactor," H. P. Furth, Princeton Plasma Physics Laboratory.
- Nov 7 — "Nutrient Enrichment and the Chesapeake Bay," C. F. D'Elia, University of Maryland.

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