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- Heffernan, K. J., "Comparison of Recent Scout Class Spacecraft Subsystem Weights for Future Weight Estimation Purposes," 1st Annual Utah State Univ. Conf. on Small Satellites, Logan, Utah (Oct 7-9, 1987).
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- Meng, C.-I., "Advanced Optical Sensing in the Visible and the UV of the Earth's Upper Atmosphere from Satellites," Physics Inst., Univ. Oslo (Oct 15, 1987).
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- Miller, J. T., "Silent Gridlock," Aegis Shipbuilding Program EW Review, JHU/APL, Laurel, Md. (Oct 28-29, 1987).
- Mitchell, D. G., "Magnetotail Energetic Particles in the Magnetosheath, Boundary Layers, and Plasma Sheet—Inferences of Magnetic Topology and Implications Regarding Energy Transport," Univ. Maryland/GSFC Space Science Seminar (Oct 5, 1987).
- Moorjani, K., "High T<sub>c</sub> Superconductors," Seminar, Harry Diamond Labs., Silver Spring, Md. (Dec 10, 1987).
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- Potemra, T. A., "Satellite Observations of Magnetic Fields in Space," Physics Dept. Colloq., Univ. Calgary (Sep 30, 1987) and Colloq., Institute of Earth and Planetary Physics, Univ. Alberta, Edmonton (Oct 2, 1987).
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- Roelof, E. C., "Energetic Neutral Atom Imaging of the Magnetosphere and Possibly the Sun," Lecture, Observatoire de Paris, Meudon (Jul 10, 1987).
- Reichert, R. T., "EXDRONE: Expendable Drone Aircraft Guidance and Control System Features," SAE Control and Guidance Committee Meeting, Houston (Oct 30, 1987).
- Rust, D. M., "Science Objectives of the Stable Solar Analyzer Experiment," ESTEC, Noordwijk, The Netherlands (Sep 15, 1987).
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- Sibeck, D. G., "Energetic Ions at the Subsolar Magnetopause: Evidence for Leakage or Merging?," Seminar, Boston Univ. (Feb 13, 1987).
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- Spall, J. C., "The Kalman Filter: An Overview," Annual Meeting, American Statistical Assoc., San Francisco (Aug 17-20, 1987).
- Stoyanov, B. J., and Farrell, R. A., "Effects of Simple Shadowing on Variational Calculations," CRDEC Scientific Conf. on Obscuration and Aerosol Research, Aberdeen Proving Ground, Md. (Jun 25, 1987).
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- Vogel, W. J. (Univ. Texas), and Goldhirsh, J. (APL), "Multipath Measurements at L-Band and UHF in Mountainous Terrain for Land Mobile Satellite Systems," Proc. NASA Experimenters' Meeting XI, VPI/SU, Blacksburg, Va. (Jun 18-19, 1987).
- Weintraub, D. M., "APL2 and the CMS System: Approaches to the APL2/REXX Connection," SHARE 69, Chicago (Aug 25, 1987).
- Weintraub, D. M., "APL2 and REXX: Using Them Together," SHARE 69, Chicago (Aug 25, 1987).
- Wenstrand, D. C., Stewart, R. L., Buscher, D. J., and Grabowski, W. J., "An Investigation of the Feasibility of Autonomous Mission Control for AUVS in Naval Applications," 5th Int. Symp. on Unmanned Untethered Submersible Technology, Univ. of New Hampshire (Jun 25, 1987).
- West, R. L., Brelsford, F. P., and Ecker, J. A., "PC-Based Computer Aided Engineering Workstations," IEEE Computer Society Workshop on Improving the Productivity of the Professional through Personal Computing, JHU/APL, Laurel, Md. (1987).
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- Williams, D. J., "Energetic Particle Observations of the Magnetosheath Low Latitude Boundary Layer and Plasmasheet," Kiruna Geophysical Inst., Sweden (May 1987).
- Yumoto, K., and Saito, T. (Tohoku U.), Menk, F. W., and Fraser, B. J. (U. Newcastle), and Takahashi, K. (APL), "Characteristics of Pi2 Magnetic Pulsations in Conjugate Area Around  $L = 1.3-2.1$ : A Case Study," Fall Meeting, Society of Geomagnetism and Earth, Planetary and Space Sciences, Shinsyu Univ., Japan (Sep 28-30, 1987).
- The following papers were presented at the Int. Symp. on Quantitative Modeling of Magnetosphere-Ionosphere Coupling Processes, Kyoto Sangyo Univ., Kyoto, Japan (Mar 9-13, 1987):
- Greenwald, R. A., "Will We Ever Understand Convection?";
- Meng, C.-I. (APL), and Huffman, R. E. (AFGL), "Preliminary Observations from Auroral Imager Onboard the Polar Bear Satellite";
- Meng, C.-I. (APL), and Makita, K. (National Inst. of Polar Res., Japan), "What is the Ground State of the Solar-Terrestrial Interaction?";
- Zanetti, L. J., "Magnetospheric-Ionospheric Electric Current Systems."
- The following papers were presented at the European Geophysical Union, Strasbourg (Apr 9-14, 1987):
- Erlandson, R. E. (APL), Cahill, L. J. (Univ. Minnesota), Pollock, C. J., and Arnoldy, R. L. (Univ. New Hampshire), and Kintner, P. M. (Cornell Univ.), "Results from an Active Plasma Beam Experiment: Waves and Particles";
- Erlandson, R. E., Zanetti, L. J., and Potemra, T. A. (APL), and Lundin, R. (Kiruna Geophysical Inst.), "Initial VIKING Results: Dayside High Latitude Birkeland Currents";
- Gustafsson, G., Koskinen, H. E. J., and Holmgren, G., (Uppsala Ionospheric Observatory), and Potemra, T. A. (APL), "Low Frequency Wave Observations in the Cusp/Cleft Region by Viking";
- Lopez, R. E., Lui, A. T. Y., McEntire, R. W., Sibeck, D. G., and Krimigis, S. M., "Energetic Particle Dispersion in Substorm Particle Injections Observed by AMPTE/CCE";
- Lui, A. T. Y. (APL); Venkatesan, D. (Univ. Calgary), Rostoker, G. (Univ. Alberta), Murphree, J. S., Anger, C. D., and Cogger, L. L. (Univ. Calgary), and Potemra, T. A. (APL), "Dayside Auroral Intensifications During an Auroral Substorm";
- Marklund, G., Block, L. P., and Blomberg, L. G. (Royal Inst. Technology, Sweden), and Potemra, T. A. (APL), "Electric Fields in the Cusp/Cleft Region";
- Marklund, G., and Blomberg, L. (Royal Inst. Technology, Sweden), Potemra, T. (APL), Murphree, J. S. (Univ. Calgary), and Rich, F., and Stasiewicz, K. (AFGL), "New Method to Derive 'Instantaneous' High-Latitude Potential Distributions from Satellite Measurements Including Auroral Imager Data";
- Potemra, T. A., Zanetti, L. J., Bythrow, P. F., and Erlandson, R. E., "Multi-Satellite Observations of Magnetic Fields During the PROMIS Campaign";
- Pottelette, R., Malingre, M. (CRPE, France), Bahnsen, A. (Danish Space Res. Inst.), Erlandson, R. E. (APL), and de Feraudy, H. (CRPE, France), "Observations of High Frequency Waves in the Vicinity of the Cusp";
- Sarris, E. T., and Krimigis, S. M., "Shock Associated Energetic Particle Intensity Enhancements by Closely Separated Spacecraft";
- Venkatesan, D. (Univ. Calgary), Lui, A. T. Y. (APL), and Murphree, J. S. (Univ. Calgary), "Auroral Activity Near 1400 MLT During Auroral Substorms";
- Zanetti, L. J., Potemra, T. A., and Erlandson, R. E. (APL), Engebretson, M. J. (Augsburg College), and Acuna, M. H. (GSFC), "Geomagnetic Field Line Resonant Harmonics Measured by the VIKING and AMPTE Magnetic Field Experiments."
- The following papers were presented at the Spring Meeting of the American Geophysical Union, Baltimore (May 18-22, 1987):
- Batchelor, D. A., and Rust, D. M., "Morphology and Dynamics of Solar Flare Soft X-Ray Sources";
- Bythrow, P. F., and Potemra, T. A., "Conjugate Observations of Birkeland Currents and Charged Particles in the Polar Cusps";
- Cheng, A. F., Krimigis, S. M., and Mauk, B. H. (APL), Lanzerotti L. J., and MacLennan, C. C. (AT&T Bell Labs.), and Armstrong, T. P. (Univ. Kansas), "Uranus Ion and Electron Phase Space Densities";
- Christon, S. P., "Relativistic Electron Fluxes in and near the Hermean Magnetosphere: Mariner 10 Observations";
- Decker, R. B., "Diffusive Shock Acceleration Rates at Oblique Shocks";
- Erlandson, R. E., Zanetti, L. J., Potemra, T. A. (APL), and Stasiewicz, K., and Lundin, R. (Kiruna Geophys. Inst., Sweden), "VIKING Observations of Dayside High Latitude Birkeland Currents";
- Gold, R. E., and Decker, R. B. (APL), and Lanzerotti, L. J., and MacLennan, C. G. (AT&T Bell Labs.), "Secular Decrease of Interplanetary Shock Accelerated Ions in 1985";
- Hughes, W. J. (Boston Univ.), and Sibeck, D. G. (APL), "On the 3-Dimensional Structure of Plasmoids";
- Ishimoto, M., and Meng, C.-I. (APL), Romick, G. J., and Degan, V. (Univ. Alaska), and Huffman, R. E. (AFGL), "NI(1745A) and NI(2143A) Auroral Emissions Observed from the S3-4 Satellite";
- Keath, E. P., Mauk, B. H., Krimigis, S. M., and Cheng, A. F., "Evidence for Substorm Activity within the Uranian Magnetotail and Magnetosphere";
- Krimigis, S. M., Mauk, B. H., and Cheng, A. F. (APL), Lanzerotti, L. J. (AT&T Bell Labs.), and Keath, E. P. (APL), "Observations of Uranian Magnetospheric Ions Im-

- mediately Upstream of Uranus' Bow Shock Densities";
- Lopez, R. E., Lui, A. T. Y., McEntire, R. W., Sibeck, D. G., and Krimigis, S. M., "Energetic Particle Dispersion in Substorm Particle Injections Observed by AMPTE/CCE";
- Lui, A. T. Y., McEntire, R. W., and Krimigis, S. M. (APL), and Hamilton, D. G., and Gloeckler, G. (Univ. Maryland), "Contributions from Different Ionic Species to the Current Density in the Ring Current Region";
- Mauk, B. H., "The Generation of Precipitated Ion Dispersion Events by Magnetospheric Substorm Dipolarizations";
- McEntire, R. W., Lui, A. T. Y., and Krimigis, S. M., "Angular Distribution of Magnetospheric Equatorial Energetic Heavy Ion Populations";
- Mitchell, D. G., Christon, S. P., and Williams, D. J. (APL), Frank, L. A., and Huang, C. Y. (Univ. Iowa), and Eastman, T. E. (NASA), "Particle Distributions in the Central Plasma Sheet";
- Newell, P. T., Meng, C.-I., and Sibeck, D. G., "Cusp Phenomenology on November 1, 1984: A Case for Merging";
- Roelof, E. C., "Energetic Neutral Atom Image of a Storm Time Ring Current";
- Roelof, E. C., "Solar and Interplanetary Conditions During SUNDIAL";
- Rust, D. M. (APL), and Harvey, K. L. (Solar Physics Res. Corp.), "Large Two-Ribbon Events and Coronal Magnetic Fields";
- Sanderson, T. R. (European Space Agency), Slavin, J. A. (JPL), Richardson, I. G. (Imperial College, London), Sibeck, D. G., and Mitchell, D. G. (APL), and Hughes, W. J. (Boston Univ.), "CDAW 8: Analysis of the Structure of Plasmoids, Flux Ropes and Vortices Using Energetic Ions as 3-Dimensional Tracers";
- Sarris, E. T., and Krimigis, S. M., "Observations of Shock Acceleration by Closely Separated Spacecraft";
- Sibeck, D. G., Decker, R. B., Krimigis, S. M., Lui, A. T. Y., McEntire, R. W., Potemra, T. A., and Takahashi, K. (APL), Baumjohann, W. (Max Planck Inst.), Elphic, R. C. (UCLA), Fairfield, D. H. (GSFC), Fennell, J. F. (Aerospace Corp.), and Lopez, R. E. (APL), "The Magnetospheric Response to 10-Minute Upstream Solar Wind Dynamic Pressure Variations";
- Takahashi, K., Zanetti, L. J., and Potemra, T. A. (APL), and Acuna, M. H. (GSFC), "A Model for the Harmonic of Compressional Pc5 Waves";
- Williams, D. J., "ISEE 1 Observations of Plasma Sheet Ion and Electron Populations: 50 eV to 1 MeV";
- Williams, D. J., "Particle Distributions in the Central Plasma Sheet";
- Williams, D. J., "Velocity Distributions in the Plasma Sheet Boundary Layer";
- Williams, D. J., and Roelof, E. C., "Examples of Magnetospheric Particle Population ENA Images";
- Zanetti, L. J., Potemra, T. A., Erlandson, R. E., and Bythrow, P. F. (APL), Acuna, M. H., and Lepping, R. P. (GSFC), and Murphree, J. S., (Univ. Calgary), "Polar Current Systems and Aurora Measured by Experiments on the VIKING Spacecraft: Influence of the IMF."
- The following papers were presented at the 6th Int. Conf. on Mathematical Modeling, Washington Univ., St. Louis (Aug 4-7, 1987):
- Lambert, R. R., "Use of a Computer-Based Decision Aid to Reduce the Predictability of Submarine Operations";
- Lambert, R. R., and Magruder, S. F., "Performance Modeling for Hydrophone Arrays";
- McKinney, B. C., "Modeling Area of Uncertainty."
- The following papers were presented at the 19th General Assembly of the IUGG, Vancouver (Aug 10-21, 1987):
- Christon, S. P., Mitchell, D. G., and Williams, D. J. (APL), Frank, L. A., and Huang, C. Y. (Univ. Iowa), and Eastman, T. E. (NASA), "ISEE-1 Observations of Plasma Sheet Ion and Electron Populations: ~50 eV to ~1 MeV";
- Erlandson, R. E., Zanetti, L. J., and Potemra, T. A. (APL), and Stasiewicz, K., and Lundin, R. (Swedish Inst. for Space Physics), "VIKING Observations of Magnetic Field Depressions in the Polar Cusp";
- Hughes, W. J. (Boston Univ.), and Sibeck, D. G. (APL), "On the 3-Dimensional Structure of Plasmoids";
- Lopez, R. E., Lui, A. T. Y., McEntire, R. W., Sibeck, D. G., and Krimigis, S. M., "Energetic Particle Dispersion in Substorm Particle Injections Observed by AMPTE/CCE";
- McEntire, R. W., Lui, A. T. Y., and Krimigis, S. M., "Spectral and Angular Distributions and Variations of Magnetospheric Equatorial Heavy Ion Populations";
- Mitchell, D. G., "Particle Observations in the Magnetotail";
- Newell, P. T., and Meng, C.-I., "Dispersion Signatures in the Equatorward Edge of the Diffuse Aurora";
- Roelof, E. C., and Williams, D. J., "Energetic Neutral Atom Image of a Storm-Time Ring Current";
- Sanderson, T. R., and Wenzel, K.-P. (European Space Research and Technology Centre), Richardson, I. G., and Cowley, S. W. H. (Imperial College, England), Mitchell, D. G., and Sibeck, D. G. (APL), and Hughes, W. J. (Boston Univ.), "CDAW 8: Determination of the 3-Dimensional Structure of Plasmoids, Flux Ropes and Vortices Using Energetic Ions as Tracers";
- Sibeck, D. G., "Theoretical Aspects of Magnetopause Boundary Waves";
- Sibeck, D. G., Decker, R. B., Krimigis, S. M., Lui, A. T. Y., McEntire, R. W., Potemra, T. A., and Takahashi, K., "Observed and Modelled Magnetospheric Response to 10-Minute Upstream Solar Wind Dynamic Pressure Variations";
- Slavin, J. A. (GSFC), Christon, S. P. (APL), and Hoffman, R. A. (GSFC), "Mariner 10 Observations of Field-Aligned Currents in Mercury's Magnetosphere";
- Slavin, J. A. (GSFC), Smith, E. J. (JPL), Baker, D. N. (GSFC), Zwickl, R. D., (Los Alamos National Lab.), Craven, J. D., and Frank, L. A. (Univ. Iowa), Elphic, R. C. (Univ. Calif.), Fairfield, D. H. (GSFC), Hughes, W. J. (Boston Univ.), Manka, R. H. (NAS), and Richardson, I. G. (Imperial College, England), Sanderson, T. R. (European Space and Technology Centre), Sibeck, D. G., and Mitchell, D. G. (APL), and Singer, H. J. (AFGL), "CDAW 8 Studies of Plasmoid Magnetic Field Topology";
- Stark, V. L., and Ondercin, D. G., "Some Applications of the Smith-Baker Algorithm";
- Takahashi, K., Lopez, R. E., Potemra, T. A., Zanetti, L. J., McEntire, R. W., Lui, A. T. Y., and Krimigis, S. M., "An Eastward-Propagating Compressional Pc5 Wave Observed by the AMPTE/CCE Spacecraft";
- Williams, D. J., and Roelof, E. C., "Examples of Magnetospheric Particle Population ENA Images."
- The following papers were presented at the IUGG/IAGA Symp. on Variability of the Ion Composition in the Earth's Magnetosphere, Vancouver (Aug 10-23, 1987):
- Cheng, A. F., Krimigis, S. M., and Mauk, B. H. (APL), Lanzerotti, L. J., and MacLennan, C. (AT&T Bell Labs.), and Armstrong, T. P. (Univ. Kansas), "Uranus Ion and Electron Phase Space Densities";
- Keath, E. P., Mauk, B. H., Krimigis, S. M., and Cheng, A. F., "Evidence for Substorm Activity within the Uranian Magnetotail and Magnetosphere";
- Krimigis, S. M., Cheng, A. F., and Mauk, B. H., "Magnetospheres of Mercury, Earth, Jupiter, Saturn and Uranus: Similarities and Differences";
- Krimigis, S. M., Mauk, B. H., Cheng, A. F., and Keath, E. P. (APL), and Lanzerotti, L. J. (AT&T Bell Labs.), "Observations of Uranian Magnetospheric Ions Immediately Upstream of Uranus' Bow Shock";
- Lanzerotti, L. J., Brown, W. L., and MacLennan, C. G. (AT&T Bell Labs.), Cheng, A. F., and Krimigis, S. M. (APL), and Johnson, R. E. (Univ. Virginia), "Effects of Charged Particles on the Surfaces of the Satellites of Uranus."
- The following papers were presented at Solar Wind 6, Estes Park, Colo. (Aug 23-29, 1987):
- Decker, R. B., Gold, R. E., and Krimigis, S. M. (APL), Lanzerotti, L. J., and MacLennan, C. G. (AT&T Bell Labs.), and Venkatesan, D. (Univ. Calgary), "Spatial Intensity Gradients of Energetic Ions ( $\geq 30$  keV) Between 13 and 31 AU During 1984 to Mid-1987";
- Mitchell, D. G., Roelof, E. C., and Williams, D. J. (APL), and Bame, S. J., and Gosling, J. T. (Los Alamos National Lab.), "Iron and Oxygen Abundances in Very High Speed Solar Wind from IMP 8, February 8, 1986";
- Sarris, E. T., Decker, R. B., and Krimigis, S. M., "Evolution of Energetic Ion Enhancements Between Closely Separated Spacecraft."
- The following papers were presented at the 2nd DoD Electromagnetic Windows Symp., Arnold Engineering Development Center, Tenn. (Oct 6-8, 1987):
- Frazer, R. K., Stadter, J. T., and Weckesser,

L. B., "Silicon Nitride - Test Summary";  
 Kuehne, B. E., "A Comparative Evaluation of  
 Radome Boresight Error Compensation  
 Techniques";  
 Newman, R. W., and Weiskopf, F. B., "Mea-  
 sured Temperature and Ablation Histories of  
 Heated Duroid 5667M";  
 Prendergast, D. T., and Bruns, R. W., "Op-  
 tical Test Results in the Environmental Seeker  
 Test Facility";  
 Weckesser, L. B., "Aerothermal Testing of IR  
 Domes."

The following papers were presented at the 37th  
 Naval Symp. on Underwater Acoustics,  
 JHU/APL, Laurel, Md. (Nov 3-5, 1987):

Bogard, L. L., "A Towed Array Development  
 Processor for Surtass";  
 Feuillet, J. P. (SPAWAR), Lombardo, J. S.,  
 Hunter, J. D., and Bogard, L. L. (APL), and  
 Allensworth, W. (Applied Hydroacoustics),  
 "Transient Vibrations in Surface Towed Sur-  
 veillance Arrays";  
 Lee-McCann, F. L., "Comparison of Trans-  
 mission Loss Measurements Made in the  
 Eastern Pacific and the Western Atlantic  
 Along Paths with Varying Bathymetry with  
 IFD-PE Predictions";  
 Lombardo, J. S., Wojcik, R. A., and Hunt-  
 er, J. D., "Tow Vessel Induced Aperture Dis-  
 tortions in Surveillance Towed Array  
 Sensors."

The following papers were presented at the Fall  
 Meeting of the American Geophysical Union,  
 San Francisco (Dec 7-11, 1987):

Baker, K. B., Greenwald, R. A., and Ruo-  
 honiemi, J. M., "Altitude Measurements of  
 10-m Plasma Irregularities in the Cusp";  
 Bythrow, P. F., Meng, C.-I., Potemra, T. A.,  
 Zanetti, L. J., and Erlandson, R. E. (APL),  
 Huffman, R. E. (AFGL), Murphree, J. S.,  
 (Univ. Calgary), and Lundin, R. (Swedish  
 Inst. of Space Physics), "Intense Auroral  
 Emissions Near 1400 MLT: A Relationship  
 to Structure in the Region 1 Current";  
 Cheng, A. F., "Stability and Temporal Varia-  
 bility of the Io Torus";  
 Christon, S. P., Mitchell, D. G., and Williams,  
 D. J. (APL), Frank, L. A., and Huang,  
 C. Y. (Univ. Iowa), and Eastman, T. E.  
 (NASA), "Variations of Plasma Sheet Par-  
 ticle Energy Spectra Associated with the Level  
 of Geomagnetic Activity";  
 Erlandson, R. E., Zanetti, L. J., Potemra,  
 T. A., and Bythrow, P. F. (APL), and Lun-  
 din, R., and Stasiewicz, K. (Swedish Inst. of  
 Space Physics), "Comparison of Birkeland  
 Currents and Low Energy Electrons at Mid-  
 latitudes on the Dayside";  
 Foster, J. C. (MIT), Bythrow, P. F. (APL),  
 Maynard, N. C. (AFGL), and Winningham,  
 J. D. (Southwest Res. Inst.), "Equipotential  
 Contours and Charged Particle Boundaries  
 in the Pre-Midnight Sector: A Composite  
 from DE and Millstone Hill";  
 Gold, R. E., Decker, R. B., and Krimigis,  
 S. M. (APL), and Thomson, D. J., Lanzerot-  
 ti, L. J., and MacLennan, C. G. (AT&T Bell  
 Labs.), "Heliolatitude and Helioradius De-  
 pendencies of Energy Spectra and Time Vari-  
 ations of Shock-Accelerated Ions on Voyager  
 1, 2";

Greenwald, R. A., and Ruohoniemi, J. M.  
 (APL), Villain, J.-P. (Univ. Toulon), and  
 Baker, K. B. (APL), "Two Dimensional Ve-  
 locity Flow Patterns Obtained from Doppler  
 Velocity Measurements with the Goose Bay  
 HF Radar";  
 Iijima, T. (Univ. Tokyo), and Potemra, T. A.,  
 and Zanetti, L. J. (APL), "Large-Scale  
 Characteristics of Magnetospheric Equatorial  
 Currents";  
 Iijima, T. (Univ. Tokyo), and Zanetti, L. J.,  
 and Potemra, T. A. (APL), "Substorm-  
 Associated Birkeland Currents in the Night-  
 side Magnetosphere";  
 Ishimoto, M., and Meng, C.-I. (APL), Ro-  
 mick, G. J. (Univ. Alaska), and Huffman,  
 R. E. (AFGL), "Anomalous UV Spectra in the  
 Diffuse Auroral Region Due to keV  
 Heavy Particles";  
 Lopez, R. E., Lui, A. T. Y., Sibeck, D. G.,  
 McEntire, R. W., Zanetti, L. J., and Krimigis,  
 S. M., "Changes in the Magnetic Field  
 Strength During Substorms in the Near-Earth  
 Equatorial Magnetotail";  
 Lui, A. T. Y., Lopez, R. E., Sibeck, D. G.,  
 McEntire, R. W., Krimigis, S. M., Zanetti,  
 L. J., and Potemra, T. A., "Structure of  
 Substorm Injection Fronts";  
 Mastrantonio, G., and Candidi, M.  
 (IFSI/CNR, Italy), and Meng, C.-I. (APL),  
 "Plasma Structures in the Polar Cusp";  
 Mauk, B. H., "Generation of Macroscopic  
 Magnetic-Field-Aligned Electric Fields by the  
 Convection-Surge/Dipolarization Mechanism  
 During Magnetospheric Substorms";  
 Mitchell, D. G., and Williams, D. J., "ISEE-1  
 Energetic Particle Observations of the Mag-  
 netosheath and Low-Latitude Boundary  
 Layer";  
 Newell, P. T., and Meng, C.-I., "Hemispher-  
 ical Asymmetry in Cusp Precipitation Near  
 Solstices";  
 Pick, M. (Observatoire de Paris), and Roelof,  
 E. C. (APL), "Type III Radio Bursts in a  
 Fibrous Corona";  
 Potemra, T. A., Zanetti, L. J., Bythrow, P. F.,  
 and Erlandson, R. E. (APL), Lundin R.  
 (Swedish Inst. of Space Physics), and Block,  
 L. P. (Royal Inst. Technology, Sweden),  
 "Resonant Geomagnetic Field Oscillations  
 and Birkeland Currents";  
 Roelof, E. C., Mitchell, D. G., and Williams,  
 D. J., "Comparison of ISEE-1 Energetic  
 Neutral Atom Images of Ring Currents in  
 Three Geomagnetic Storms";  
 Ruohoniemi, J. M., Greenwald, R. A., and  
 Baker, K. B. (APL), Villain, J.-P. (Univ.  
 Toulon), and Newell, P. T. (APL), "A New  
 Type of Coherent HF-Radar Scatter and Its  
 Relation to the Mid-Latitude Trough";  
 Sibeck, D. G., Lopez, R. E., McEntire, R. W.,  
 and Potemra, T. A., "Solar Wind Control of  
 the Dayside Magnetopause Position";  
 Takahashi, K., Zanetti, L. J., Lopez, R. E.,  
 McEntire, R. W., and Potemra, T. A.  
 (APL), and Yumoto, K. (Tohoku Univ., Jap-  
 an), "Disruption of the Magnetotail Cur-  
 rent Sheet Observed by AMPTE/CCE";  
 Thomson, D. J., Lanzerotti, L. J., and  
 MacLennan, C. G. (AT&T Bell Labs.), and  
 Gold, R. E., and Decker, R. B. (APL),  
 "Power Spectral Analysis Techniques in  
 Studies of Shock-Accelerated Ions in the  
 Heliosphere";

Venkatesan, D. (Univ. Calgary), Lui, A. T. Y.  
 (APL), and Murphree, J. S. (Univ. Calgary),  
 "Dynamics of Auroral Activities Near 1400  
 MLT";  
 Williams, D. J., and Mitchell, D. G., "ISEE-1  
 Energetic Particle Perspective of High  
 Anisotropy Ion and Electron Distributions in  
 the Plasma Sheet Boundary Layer and the  
 Active Plasma Sheet";  
 Zanetti, L. J., Potemra, T. A., and Bythrow,  
 P. F. (APL), and Iijima, T. (Univ. Tokyo),  
 "Convection Cells: Four, Three, Two-...?"

## COLLOQUIA

Oct 2, 1987—"Sea Level Variability of the  
 Tropical Pacific from GEOSAT," R. E.  
 Cheney, NOAA.  
 Oct 9—"High Temperature Superconductiv-  
 ity," K. Moorjani, APL.  
 Oct 16—"Ceramics as Engineering Materi-  
 als: From Heat Engines to Superconduc-  
 tors," H. K. Bowen, MIT.  
 Oct 23—"Neuromagnetism: A New Window  
 into the Brain," S. J. Williamson, New  
 York University.  
 Oct 30—"Protostellar Collapse and Star For-  
 mation," A. P. Boss, Carnegie Institute  
 of Washington (DTM).  
 Nov 6—"Cosmology and Particle Physics  
 with Dark Matter," J. Primack, Univer-  
 sity of California, Santa Cruz.  
 Nov 12—"The Crisis in Space Science,"  
 L. J. Lanzerotti, AT&T Bell Labora-  
 tories.  
 Nov 20—"The Soviet Space Program,"  
 R. Z. Sagdeev, Director, Soviet Institute  
 for Space Research.  
 Dec 4—"New Strategies for Detecting the  
 AIDS Virus," T. F. Zuck, University of  
 Cincinnati.  
 Dec 11—"Japanese Techniques in AI, Edu-  
 cation, Research Administration and the  
 Competiveness Problem," R. T. Greene,  
 Cognitive Technologies Associates.  
 Dec 18—"Three-Dimensional X-Ray Micro-  
 tomography," B. P. Flannery, Exxon  
 Research & Engineering Co.  
 Jan 14, 1988—"A Look at the World  
 Through the Tunneling Electron Micro-  
 scope," J. Golovchenko, Harvard Uni-  
 versity.  
 Jan 22—"Heavy Snow Forecasting," F. Bro-  
 dy and J. Sokich, National Meteorologi-  
 cal Center.  
 Jan 29—"Current Strategies in the Treatment  
 of Heart Attacks," M. L. Weisfeldt, The  
 Johns Hopkins University.  
 Feb 5—"Acid Rain: History and Current  
 Research," O. P. Bricker, U.S. Geological  
 Survey.  
 Feb 12—"History, Weather and War," J.  
 Greenhut, Department of the Army.  
 Feb 19—"Networking, Computing and  
 Differentiation," S. Tolchin, Pyramid  
 Technology.  
 Feb 26—"Materials by Design: Diamond  
 Films, Nanocomposites and Zero-  
 Expansion Ceramics," R. Roy, Pennsyl-  
 vania State University.



## U.S. PATENTS (1987)

- D. L. Mitchell, *Test Set for a Navigational Satellite Receiver*, No. 4,641,254, Feb 3:  
An apparatus particularly adapted for testing and isolating malfunctions in a navigational satellite receiver unit.
- R. S. Potember, T. O. Poehler, Jr. (APL), and D. O. Cowan (JHU), *Electrical Organic Thin Film Switching Device Switching Between Detectably Different Oxidation States*, No. 4,652,894, Mar 24:  
A current-controlled bistable threshold or memory switch that comprises a polycrystalline metal-organic semiconductor thin film sandwiched between metallic electrodes.
- R. E. Fischell, A. C. Sadilek (APL), and W. Swift (Parker-Hannifin), *Method for Clearing a Gas Bubble from a Positive Displacement Pump Contained within a Fluid Dispensing System*, No. 4,661,097, Apr 28:  
A method and apparatus for removing gas bubbles from the fluid reservoir and pumping chamber of an implantable medication infusion system.
- R. S. Potember and T. O. Poehler, *Multistate Optical Switching and Memory Using an Amphoteric Organic Charge Transfer Material*, No. 4,663,270, May 5:  
A multistate optical storage medium, formed of an amphoteric organic charge transfer material, responsive to an optical beam for reading and writing data.
- M. E. Schmid, R. L. Trapp, and A. E. Davidoff, *Method and Apparatus for Bus Arbitration Using a Pseudo-Random Sequence*, No. 4,667,192, May 19:  
A technique for performing bus arbitration within a distributed computer network without requiring central control or centralized clocking.
- E. P. Irzinski, J. A. Krill, and W. H. Zinger, *Sharp Mode-Transducer Bend for Overmoded Waveguide*, No. 4,679,008, Jul 7:  
A structure to effectuate a sharp bend within an overmoded (circular TE<sub>01</sub>) waveguide system.
- J. H. Loveless, *Chin Actuated Controller System for Controlling Powered Apparatus*, No. 4,679,644, Jul 14:  
A chin actuated system for controlling the operation of a powered wheelchair or similar apparatus.
- T. R. Small, *Vibration Dissipation Mount for Motors or the Like*, No. 4,679,761, Jul 14:  
A vibration dissipation mount for motors, generators, and like devices having rotatable shafts.
- R. S. Potember and T. O. Poehler, *Enhanced Optically Sensitive Medium Using Organic Charge Transfer Materials to Provide Reproducible Thermal/Optical Erasure*, No. 4,684,598, Aug 4:  
An optically sensitive medium, utilizing an organic charge transfer complex as the switching material for storing data, which can be erased thermally.
- J. A. Krill, *Air Inlet for Internal Cooling of Overmoded Waveguide*, No. 4,688,007, Aug 18:  
Various structural embodiments for using an airflow to cool an overmoded waveguide installation.
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- J. H. Kuck, *Automatic Attenuator for Sonobuoys*, No. 4,691,305, Sep 1:  
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- W. E. Snelling and J. E. Penn, *Guild Array Multiplier for Binary Numbers in Two's Complement Notation*, No. 4,706,210, Nov 10:  
A digital multiplier circuitry for handling digital data represented in two's complement notation.
- A. L. Newman and W. D. Stanbro, *Regulation of the Exposure of Active Surfaces*, No. 4,708,765, Nov 24:  
A method and apparatus for controlling the exposure of an active surface (e.g., in a pollutant detector) by means of an erodible protective coating.