DEPARTMENTS

PUBLICATIONS


F. W. Schemel and B. S. Ogorzalek (APL) and D. E. Paulsen and J. C. Larabee (Air Force Geophysics Lab.), "Satellite Auroral/Ionospheric UV Imagery," in
The following papers were presented at the 1982 Fall AGU Meeting, San Francisco (7-15 Dec 1982).

K. B. Baker and R. A. Greenwald, "Preliminary Analysis of HF-Radar Signals Backscattered from Very High Latitude F-Region Irregularities;"

P. F. Bythow and T. A. Potemra, "Dawn-Dusk Birkeland Currents, Their Latitudinal Location as a Function of the Interplanetary Medium;"

M. Graditi (National Research Council, Italy) and C.-I. Meng (APL), "The Polar Cusp Electrons, Geomagnetic Activity and the IMF;"

J. F. Carbery and S. M. Krimigis (APL) and R. P. Lepping (NASA), "Events in the Interplanetary Medium Near Saturn;"


R. E. Gold and E. C. Roelof, "Fluctuations in the Coronaal Emission of Solar Wind at Fixed Longitudes;"

R. A. Greenwald (APL), J. P. Villain (Univ. Toulon, France), and K. B. Baker (APL), "An AF Radar for Studying E- and F-Region Irregularities in the Auroral Zone and Polar Cap;"
K. Makita (Takushoku Univ., Japan) and C.-I. Meng, "The Average Electron Precipitation Pattern During Extremely Quiet Times and Its Dependence on the Magnetospheric Substorm;"
B. H. Mauk and C.-I. Meng, "Dynamical Particle 'Injections' as the Source of Geostationary, Quiet-Time Particle Spatial Boundaries;"
D. G. Mitchell and E. C. Roelof (APL) and S. J. Bame (Los Alamos National Lab.), "Solar Wind Iron Abundance Variations at Solar Wind Speeds > 600 km s⁻¹, 1972-1976;"
E. C. Roelof and D. G. Mitchell, "Energetic Neutral Atoms (E> 50 keV) from the Ring Current: Simultaneous Measurements by IMP-7 and -8 at ~ 35 Re;"
D. Venkatesan (Univ. Calgary) and R. B. Decker, S. M. Krimigis, and E. C. Roelof (APL), "Radial Gradient of Cosmic Ray Intensity from a Comparative Study of Voyager 1 and 2 and IMP-8 Data during 1977/day 268 to 1981/day 129;"
F. Yasuhara (Chyukyo Univ., Japan), R. A. Greenwald (APL), and S.-I. Akasofu (Univ. Alaska), "On the Rotation of the Polar Cap Potential Pattern and Associated Polar Phenomena;"
The following papers were presented at the 5th International Symp. on Solar Terrestrial Physics, Ottawa (17-21 May 1982):
P. F. Bythrow and T. A. Potemra, "The Response of Birkeland Currents Observed Near the Dawn-Dusk Meridian to Variations in the IMF;"
H. W. Dodson, E. R. Hedeman, and E. C. Roelof, "Large-Scale Solar Magnetic Fields at the Site of Flares, the Greatness of Flares, and Solar-Terrestrial Disturbances;"
R. A. Greenwald, "Electric Fields in the Ionosphere and Magnetosphere;"
T. A. Potemra (APL) and W. Baumjohann (Max-Planck Inst., Extraterrestrial Phys.), "On the Relationship of Birkeland and Ionospheric Currents;"
E. C. Roelof (APL) and T. R. Sanderson (European Space R&D Center), "Wave Particle Interactions at ISEE-3: 35-62 keV Ions and 0.01 Hz Waves;"
T. R. Sanderson, R. Reinhard, and K. P. Wenzel (European Space R&D Center), and E. C. Roelof and R. J. Smith (APL), "Ions (32-56 keV) and Waves (~ 0.03 Hz) from the Earth's Bow Shock;"
D. J. Williams, "Generation and Decay of the Magnetospheric Ring Current;"

**COLLOQUIA**

THE AUTHORS

STAMATIOS M. KRIMIGIS received the Ph.D. in physics from the University of Iowa in 1965. He remained as research associate (1965-66) and assistant professor of physics (1966-68) before joining APL in 1968. He is currently chief scientist of the Space Department.

Dr. Krimigis' research interests include the plasma physics of the earth's magnetosphere-ionosphere system. He has conducted numerous artificial plasma release experiments in the ionosphere and magnetosphere. He has been the principal investigator or co-investigator on several NASA spacecraft. Most recently he has served as the principal investigator of the Fast Plasma Experiment on ISEE-2. His research interests include plasma processes at magnetospheric boundaries. He is currently associate editor of the Journal of Geophysical Research and member of the editorial board of Space Science Reviews.

GERHARD HAERENDEL received his Ph.D. in physics from the University of Munich and has been a director at the Max-Planck Institute for Extraterrestrial Physics since 1972. During 1964-1965, he spent 12 months at Caltech, with further extended U.S. visits follow ing in 1968 (to the Lockheed Palo Alto Research Laboratory) and in 1972 (to the University of California, Berkeley). Dr. Haerendel's research interests include the plasma physics of the earth's magnetosphere-ionosphere system. He has conducted numerous artificial plasma release experiments in the ionosphere and magnetosphere. He is presently council chairman of the European Incoherent Scatter Radar Facility.

RICHARD W. MCENTIRE first worked at APL as a summer employee in 1961 while he was an undergraduate. After receiving the Ph.D. degree in physics from the University of Minnesota, he returned to APL full time in 1972 as a member of the Space Department's Space Physics Group. He has worked in the development of instrumentation for balloons, rockets, and spacecraft.

Dr. McEntire's current research interests are in the dynamics of plasmas and energetic particles in planetary magnetospheres. He is presently program scientist at APL for the Energetic Particles Detector for the NASA Galileo Mission and the AMPTE program, and is lead investigator for the Medium Energy Particle Analyzer on the Charge Composition Explorer spacecraft.

GÖTZ PASCHMANN received his Ph.D. in physics from the Technical University of Munich and since has been on the staff of the Max-Planck Institute for Extraterrestrial Physics, where he is head of the Magnetospheric Plasma Group. From 1968 to 1970, he spent 18 months as a visitor to the Lockheed Palo Alto Research Laboratory. He has also been a frequent visitor to the Los Alamos National Laboratory. Dr. Paschmann has served as principal investigator of the Fast Plasma Experiment on ISEE-2. His research interests include plasma processes at magnetospheric boundaries. He is currently associate editor of the Journal of Geophysical Research and member of the editorial board of Space Science Reviews.

DUNCAN A. BRYANT received his Ph.D. from Imperial College, London. In 1960, with the support of a Resident Research Associate- ship from the National Academy of Sciences, he joined a team at the Goddard Space Flight Center investigating the propagation of solar flare particles through the interplanetary medium, and the elemental composition of cosmic rays. In 1963, at the Radio Research Station (Slough, England), Dr. Bryant formed a group to explore the streams of charged particles that produce the aurora borealis. At the Rutherford Appleton Laboratory, he has continued his work, particularly on the pulsating aurora and the curtain-like auroral arcs formed by freshly accelerated electrons.

HARVEY W. KO was born in Philadelphia in 1944, and received the B.S.E.E. (1967) and Ph.D. (1973) degrees from Drexel University. During 1964-65, he designed communications trunk lines for the Bell Telephone Company. In 1966, he performed animal experiments and spectral analysis of pulsatile blood flow at the University of Pennsylvania Presbyterian Medical Center.

After joining APL in 1973, he investigated analytical and experimental aspects of ocean electromagnetics, including ELF wave propagation and magnetohydrodynamics. Since 1981, he has been examining radar wave propagation in coastal environments and advanced biomagnetic signal processing for encephalography. He is now on the Technical Staff of the Submarine Technology Division.

JAMES W. SARI was born in Buffalo in 1942, and received the Ph.D. degree in physics from the University of Maryland (1972). During 1972-77 he worked at the Cornell Aeronautical Laboratory. There he studied radar propagation in disturbed plasmas and was the principal investigator for studies of neutral beam propagation in the magnetosphere. During the summers he served as visiting professor at the University of Maryland/Goddard Space Flight Center, investigating solar wind and cosmic-ray interactions.

Since joining the Submarine Technology Division of APL in 1977, Dr. Sari has conducted experimental and theoretical research on the geomagnetic field and ocean magnetohydrodynamics. Currently he is project scientist for the examination of radar propagation in the troposphere and is chief scientist for the active acoustic target strength test.

Volume 4, Number 1, 1983
JOSEPH P. SKURA was born in Mineola, New York, in 1952. Before and after earning the M.S. degree in applied physics from Adelphi University (1976), he performed research in reverse eutrophication of lakes and in the combustion of coal-oil-water slurries for Union Carbide, the Department of Transportation, New England Power and Light, and NASA. Mr. Skura joined APL in 1978 as a member of the Magnetics Group of the Submarine Technology Division. He has been involved in oceanographic research concerning extremely-low-frequency underwater magnetic fields and, since 1981, has been examining electromagnetic wave propagation in coastal environments.

DAVID G. GRANT received the M.A. degree in applied mathematics in 1966 from the University of Maryland. He joined APL in 1959 and worked as an engineer on the Typhon weapons system. Mr. Grant later developed electro-optical signal processing techniques for advanced radar systems. He became associated part time with APL's biomedical engineering program in 1967 and was principal investigator on a 3-D X-ray imaging system that received the IR-100 outstanding engineering development award in 1969.

Mr. Grant worked in the Submarine Technology Division before accepting an interdivisional appointment to the Johns Hopkins School of Medicine in 1975, as director of Radiation Therapy Physics. In 1978 he was appointed director of the Division of Clinical Engineering. He recently returned to full-time duties at APL in the Space Department, where he is program manager of the Space Telescope Alternate Fine Guidance Sensor Program.

Mr. Grant was appointed to the Principal Professional Staff in 1970 and holds the appointments of associate professor of biomedical engineering and assistant professor of oncology and radiology in the School of Medicine.

ROBERT M. FRISTROM was born in Portland, Ore., in 1922 and received the Ph.D. in Chemistry from Stanford University in 1948. He was a Research Fellow at Harvard from 1948-1951 and has held visiting professorships at Stanford and the Universities of Göttingen and California (Berkeley). In 1951, he joined APL where he is in the Chemical Physics Group of the Research Center. His interests at the Laboratory have included propulsion, microwave spectroscopy, flames, fire, and chemical kinetics.

Among Dr. Fristrom's awards are the Parsons Fellowship of APL (1959), the Silver Medal of the Combustion Institute and the Hillebrand Award of the Chemical Society of Washington (both with A. A. Westenberg) (1966), and a Humboldt Foundation award (1973). He has served on several advisory committees to the National Academy of Sciences.