

PUBLICATIONS

The following list is a compilation of recently published books and technical articles written by APL staff members.

- R. E. Fischell, "Passive Gravity Gradient Stabilization for Earth Satellites," *Torques and Attitude Sensing in Earth Satellites*, Chap. II, Academic Press, New York, 1964.
- G. H. Mowbray, "Subjective Expectancy and Choice Reaction Time," *Quart. J. Exp. Psych.*, **16**, 1964, 216-223.
- L. Monchick, "Small Periodic Disturbances in Polyatomic Gases," *Physics of Fluids*, **7**, June 1964, 882-896.
- H. D. Black, "A Passive System for Determining the Attitude of a Satellite," *A.I.A.A. J.*, **2**, July 1964, 1350-1351.
- F. J. Adrian (APL) and M. Karplus (IBM Watson Laboratory), " β -Proton Hyperfine Splittings in the Vinyl Radical," *J. Chem. Phys.*, **41**, July 1, 1964, 56-60.
- G. H. Mowbray, "Perception and Retention of Verbal Information Presented During Auditory Shadowing," *J. Acoust. Soc. Am.*, **31**, Aug. 1964, 1459-1464.
- V. L. Pisacane, "Particle Motion in the Equatorial Plane," *A.I.A.A. J.*, **2**, Aug. 1964, 1361-1364.
- T. O. Poehler, Jr. and D. Abraham, "Electric Field Excitation of Electrons from Shallow Traps in CdSe Thin-Film Triodes," *J. App. Phys.*, **35**, Aug. 1964, 2452-2455.
- E. J. Blau and B. F. Hochheimer, "Infrared Spectrum and Structure of Diimide," *J. Chem. Phys.*, **41**, Sept. 1, 1964, 1174-1182.
- R. R. Newton, "Errors in Long-Term Orbital Prediction for Satellite 1961 α ," *J. Geophys. Res.*, **69**, Sept. 1, 1964, 3619-3624.
- J. O. Artman and J. C. Murphy, "Lattice Sum Evaluations of Ruby Spectral Parameters," *Phys. Rev.*, **135**, Sept. 14, 1964, A1622-A1639.
- R. E. Gibson, "Our Heritage from Galileo Galilei," *Science*, **145**, Sept. 18, 1964, 1271-1276.

ADDRESSES

The listing below comprises the principal recent addresses made by APL staff members to groups and organizations outside the Laboratory.

- R. E. Fischell, "Recent In-Orbit Measurements of Radiation Damage to Solar Cells," *Fourth Annual Photovoltaic Specialists Conference*, Cleveland, June 2, 1964.
- J. H. Martin and R. E. Fischell, "Solar Cell Characteristics, Determined as Function of Electron Irradiation and Temperature on Table Mountain," *Fourth Annual Photovoltaic Specialists Conference*, Cleveland, June 2, 1964.
- D. W. Fox, "Lower Bounds to Eigenvalues," *Johannes Gutenberg Universität, Mathematisches Kolloquium*, Mainz, Germany, July 2, 1964.
- R. P. Rich, "The Emerging Importance of Non-Numerical Data Processing," *IBM Systems Research Institute*, New York, July 21, 1964.
- D. W. Fox, "Lower Bounds to Eigenvalues of Self-Adjoint Operators," *University of London*, Institute of Computer Sciences, July 30, 1964.
- W. E. Buchanan, "The APL Story," *Laurel Lions Club*, Laurel, Md., Aug. 11, 1964.
- F. F. Mobley, "Gravity Gradient Attitude Stabilization for Communication Satellites," *Ninth Symposium on Ballistic Missile and Space Technology*, San Diego, Aug. 12-14, 1964.
- H. B. Riblet, "History and Mission of APL," *Hagerstown Lions Club*, Hagerstown, Md., Aug. 18, 1964.
- A. I. Mahan, "Absorption, Stimulated Emission, and Maxwell's Equations," *International Commission on Optics*, Conference on Interference and Coherence, Sydney, Australia, Aug. 24-26, 1964.
- S. D. Bruck, "The Effect of Impurities on the Thermal Degradation of Poly [N,N'-(p,p-oxydiphenylene) pyromellitimide]," *American Chemical Society, Division of Polymer Chemistry*, Chicago, Aug. 31-Sept. 4, 1964.
- R. E. Fischell and K. J. Bialy, "Application of SNAP 9A for Earth Satellites," *Third Biennial Aerospace Power Systems Conference*, (AIAA/SAE/ASME/IAPG/Electron Devices Group, IEEE/Amer-Power Conference), Philadelphia, Sept. 1-4, 1964.
- A. I. Mahan, C. V. Bitterli, and S. M. Cannon, "Far-Field Diffraction Patterns of Single and Multiple Circularly Symmetric Apertures," *Conference on Photographic and Spectroscopic Optics*, Tokyo, Japan, Sept. 1-8, 1964.
- R. B. Kershner and R. E. Fischell, "Application of Gravity Stabilization for Communications Satellites," *Defense Communications Agency*, Arlington, Va., Sept. 17, 1964.
- D. W. Fox, Lecture Series on "Bounds for Eigenvalues of Self-Adjoint Operators" (5 lectures), *Aerospace Research Laboratory*, Wright-Patterson Air Force Base, Ohio, Sept. 28-Oct. 2, 1964.
- G. H. Mowbray and R. W. Hart, "Chopped White Noise and the Triplex Theory of Pitch Perception," *Fifth Annual Meeting of the Psychonomic Society*, Niagara Falls, Ontario, Canada, Oct. 8-10, 1964.

APL COLLOQUIA

Oct. 9—"Star Formation," by J. F. Bird, Applied Physics Laboratory.

Oct. 16—"Photochromic Glasses," by S. D. Stookey, Corning Glass Works, Inc.

Oct. 23—"Technical Program of the Communications Satellite Corporation," by S. Metzger, Communications Satellite Corporation.

Oct. 30—"Project Mohole," by G. G.

Lill, National Science Foundation.

Nov. 6—"Origins of Protons in the Outer Radiation Zone," by W. N. Hess, Goddard Space Flight Center.

Nov. 13—"Elections and Opinion Polls," by P. E. Converse, University of Michigan.

Nov. 20—"Experimental Films in Mathematics Teaching," by H. M. MacNeille, Case Institute of Technology.

PATENTS

F. A. Oyhus — *Expendable Piston-Tube Missile Launcher*, Patent No. 3,135,161.

C. H. Sprague and W. Seamone—*Planetary Transmission*, Patent No. 3,136,180.

R. A. Freiberg—*Motor Servo Driver*, Patent No. 3,137,809.

R. A. Freiberg—*Servo Valve Driver*, Patent No. 3,140,427.

A. H. Dell, J. H. Kuck, and J. H. Sreb — *Proximity Fuze Antenna*, Patent No. 3,143,072.

WITH THE AUTHORS

I. Katz, author of "Ocean Wave Measurements," was the author of "Radar Reflectivity of the Earth's Surface" in the Jan.-Feb. 1963 *Digest*. Mr. Katz joined APL as a physicist in 1952, to conduct experimental and theoretical studies of missile guidance, emphasizing low-angle capture and guidance problems. He also made studies of forward-scattering of radio waves off rough-sea surfaces, conducted research in basic physics connected with radar map-matching, and investigated the nature of back-scattering of radar energy off sea and land

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S. D. Raezer, author of "The Mass Transient and Plasma Arc Instability," is a native of Lancaster, Pennsylvania. He received his A.B. degree in philosophy and his B.S. degree in physics from Franklin and Marshall College, and, in 1954, his M.S. degree in physics from Lehigh University. Mr. Raezer joined the APL staff in 1954 as an associate physicist in the Physical Chemistry Group, concerned with experimental infrared spectroscopy of diatomic molecules. He is currently a senior physicist in the Research and Instrumentation Section of the Propulsion Research Facilities, where his field of

investigation is plasma arc development for hypersonic propulsion tunnels. Mr. Raezer is a member of The Philosophical Society of Washington.



R. H. Hallendorff, author of "A Method of Radome Compensation with Broadband Capability," was born in Milwaukee, Wisconsin. He received his B.S. degree and, in 1962, his M.S. degree in electrical engineering from the University of Illinois. Mr. Hallendorff joined the



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