

CALENDAR

Information in the calendar is compiled from a file maintained in the PHYSICS TODAY office. Readers are invited to write or telephone for general calendar information beyond what we print. For complete information concerning an entry, readers are advised to consult the contact. The date at the end of each item refers to the issue of PHYSICS TODAY in which the item is listed with more detail than appears in subsequent issues.

ABBREVIATIONS: AAPT, American Association of Physics Teachers; AAS, American Astronomical Society; ACA, American Crystallographic Association; APS, American Physical Society; ASA, Acoustical Society of America; OSA, Optical Society of America; S of R, Society of Rheology; AEC, US Atomic Energy Commission; AFRL, Air Force Cambridge Research Laboratories; AVS, American Vacuum Society; IAEA, International Atomic Energy Agency; IEEE, Institute of Electrical and Electronics Engineers; IPPS, The Institute of Physics and The Physical Society; IUPAP, International Union of Pure and Applied Physics; NBS, National Bureau of Standards; ORNL, Oak Ridge National Laboratory.

CODING of each item is as follows: date subject ☐ HOST ☐
Location (Contact) [submission deadline] PT ref.

• new listing ♦ new information

JUNE 1968

- 17-19 Southwest Meeting ☐ APS ☐ Los Alamos, N. M. (W. Whaling) 10/67
- 17-19 Microelectronics ☐ IEEE ☐ St. Louis, Mo. (R. Pellin) [3/15] 3/68
- 17-28 Quantum Electronics ☐ U. OF ARIZONA ☐ Flagstaff, Ariz. (S. F. Jacobs) 3/68
- 19-21 Structure and Chemistry of Solid Surfaces ☐ LAWRENCE RADIATION LABORATORY ☐ Berkeley, Calif. (C. V. Peterson) 1/68
- 23-28 Power Conference ☐ IEEE ☐ Chicago (J. F. Bracken) [2/9] 1/68
- 24-26 Debye Memorial Symposium on Laser Scattering ☐ APS ☐ Ithaca, N. Y. (W. D. Gurowitz) 4/68
- 24-26 Summer Meeting ☐ AAPT ☐ Tempe, Ariz. (R. Geballe) 3/68
- 24-27 Bioastronautics and Exploration

of Space ☐ US AIR FORCE, MEDICAL DIVISION ☐ San Antonio, Tex. (J. Harmon) 2/68

- 25-28 Precision Electromagnetic Measurements ☐ IEEE, NBS ☐ Boulder, Colo. (G. Goulette) [2/12] 12/67

- 30-5 CODATA Conference ☐ INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS ☐ Arnoldshain, Frankfurt/Main, Germany (G. Waddington) 3/68

JULY 1968

- 8-10 Marine Technology ☐ MARINE TECHNOLOGY SOCIETY ☐ Wash., D. C. (F. Masters) 1/68
- 8-10 • Scanning Electron Microscopy ☐ IPPS ☐ Cambridge, England (Meetings Officer, IPPS, 47 Belgrave Square, London, SW1) [3/15] 6/68

Topics will include aspects of applications to medicine, biology and entomology, fibres and paper, mineralogy, metallography, solid-state physics, thin foils, diffraction effects, instrumentation and electron physics.

- 8-11 Nuclear Magnetic Resonance ☐

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FORD FOUNDATION-U. OF SÃO PAULO □ São Paulo, Brazil (L. W. Reeves) [4/20] 1/68

8-12 Molecular Crystals □ TECHNICAL UNIVERSITY "TWENTE" □ Enschede, Netherlands (J. Kommandeur) 3/68

10-12 Competing Spectrochemical Techniques □ IPPS □ Keele, Germany (Meetings Officer, IPPS) [4/19] 2/68

14-20 Combustion □ COMBUSTION INSTITUTE □ U. of Poitiers, France (M. W. Evans) [12/14] 2/68

15 (through 8 Sept) Nuclear Physics □ U. OF GRENOBLE □ Les Houches, Haute-Savoie France (C. Dewitt) [3/1] 1/68

15-17 Polymers in Space Research □ AMERICAN CHEMICAL SOCIETY □ Pasadena, Calif. (A. Rembaum) [7/1] 4/68

15-18 Electrical Contact Phenomena □ IPPS □ University College of Swansea, Wales (Meetings Officer, IPPS) [2/1] 10/67

15-18 Orbital-Electron Capture □ HUNGARIAN ACADEMY OF SCIENCES □ Debrecen, Hungary (R. W. Fink) 2/68

15-19 Crystal Growth □ AFCL □ Birmingham, England (C. S. Sahagian) 12/67

22-26 Rarefied Gas Dynamics □ MASSACHUSETTS INSTITUTE OF TECHNOLOGY □ Cambridge, Mass. (Symposium secretary) [12/31] 11/67

23-29 ♦ Physics of Semiconductors □ IUPAP □ Moscow, USSR (A. R. Regel) [2/1] 12/67

24-30 Magnetohydrodynamic Production of Electricity □ IAEA □ Warsaw, Poland (M. V. Tcherniline) [4/2] 12/67

29-2 Instrumentation Science □ INSTRUMENT SOCIETY OF AMERICA □ Hamden, Conn. (M. Reed) 5/68

29-2 Nuclear Structure □ GORDON RESEARCH CONFERENCE □ Tilton, N. H. (J. Weneser) 5/68

31-2 First Annual Meeting □ ELECTRON PROBE ANALYSIS SOCIETY □ Chicago (C. R. Knowles) 5/68

AUGUST 1968

1-7 Plasmas and Controlled Nuclear Fusion □ IAEA □ Novosibirsk, USSR (J. H. Kane) [1/15] 1/68

6-15 Medical Radioisotope Scintigraphy □ IAEA □ Salzburg, Austria (G. J. Hine & H. Vetter) [3/1] 11/67

7-9 Ellipsometry □ U. OF NEBRASKA □ Lincoln, Neb. (N. M. Bashara) 9/67

7-13 Meteorite Research □ IAEA □

Vienna, Austria (J. H. Kane) [2/28] 4/68

11-14 • Preparation and Properties of Electronic Materials: Optical and Nuclear Radiation □ THE METALLURGICAL SOCIETY □ Chicago, Ill. (L. R. Weisberg, RCA Laboratories, Princeton, N. J. 08540) [5/1] 6/68

Topics under consideration will emphasize preparative aspects of electronic materials as related to their interaction with optical and nuclear radiation: preparation, radiation damage, lasers and laser damage, nuclear-particle detectors, photodetectors.

11-31 Critical Phenomena □ CANADIAN ASSOCIATION OF PHYSICISTS □ Banff, Alberta, Canada (D. L. Hunter) 3/68

12-16 □ ACA □ Buffalo, N. Y. (D. Harker) 10/67

12-16 Liquid Crystals □ KENT STATE U. □ Kent, Ohio (G. H. Brown) [5/1] 2/68

19-21 Thermoluminescent Dosimetry □ U. OF WISCONSIN MEDICAL CENTER □ Madison, Wisc. (J. R. Cameron) 4/68

20-23 Molecular Luminescence □ LOYOLA U. □ Chicago (E. C. Lim) 4/68

20-23 • National Electronics Convention □ INSTITUTION OF ELECTRONIC AND RADIO ENGINEERS, NEW ZEALAND ELECTRONICS INSTITUTE □ Auckland, New Zealand (The Secretary, P. O. Box 3266, Auckland 1, New Zealand) [2/26] 6/68

Topics: integrated circuits, communications for computers, automation, applied and research electronics, components and instruments, data handling.

21-23 □ AAS □ University of Victoria, Victoria, B. C., Canada (G. C. McVittie) 11/67

21-23 Applications of X-Ray Analysis □ DENVER RESEARCH INSTITUTE □ U. of Denver, Colo. (J. B. Newkirk) 10/67

21-28 Low-Temperature Physics □ U. OF ST. ANDREWS □ St. Andrews, Scotland (D. M. Finlayson) 10/67

26-29 Standards Laboratory Conference □ NATIONAL CONFERENCE OF STANDARDS LABORATORIES □ Boulder, Colo. (G. Goulette) [3/15] 5/68

26-30 Reactivity in Solids □ INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY □ Schenectady, N. Y. (R. W. Roberts) 10/67

26-31 Applied Mechanics □ STANFORD U. □ Stanford, Calif. (C. R. Steele) [2/2] 10/67

29-31 AC Properties of Superconductors and Their Applications □ IPPS, IUPAP □ Coventry, England (Meetings Officer, IPPS) [6/7] 5/68

SEPTEMBER 1968

2-6 • Laboratory Astrophysics □ IUPAP □ Lunteren, Netherlands (J.

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SL36-8M	0-36 VDC	0-8 amps	355.
SL36-12M	0-36 VDC	0-12 amps	455.
SL36-25M	0-36 VDC	0-25 amps	650.

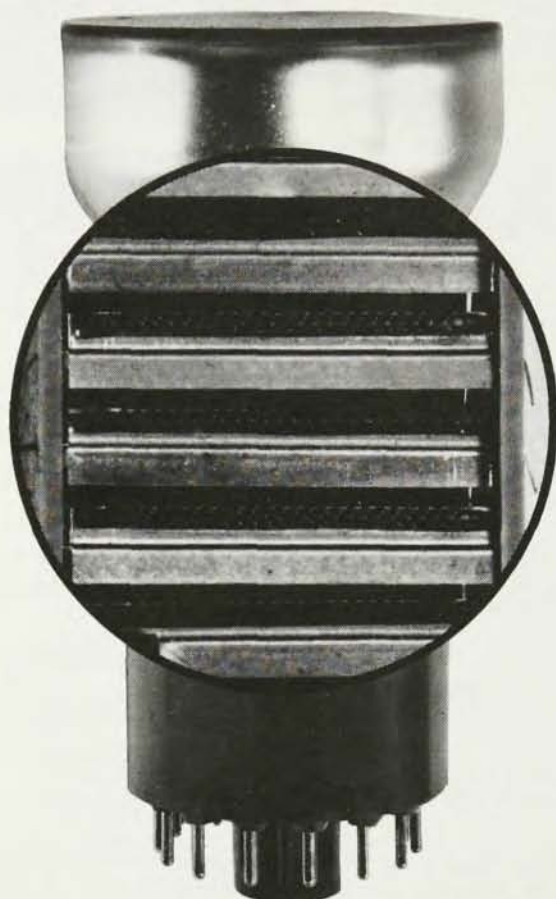
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Rosenberg, *Astronomical Institute, Servaasbolwerk 13, Utrecht, Netherlands* [4/30] 6/68

Topics at this international conference will include molecular physics, interstellar grains, ionization fronts, new observational and experimental techniques.

3,4 Electron Mean Free Paths in Metals □ EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE □ Zürich, Switzerland (J. L. Olsen) 5/68

3-6 • Solid-State Devices □ IPPS, IEEE □ Manchester, England (*Meetings Officer, IPPS, 47 Belgrave Square, London, SW1*) 6/68

Subjects covered at this conference will include silicon-device design, integrated-circuit technology, storage, display, and imaging devices, detectors, thin films and MIS devices, microwave devices, bulk effect, techniques for device diagnosis.

3-6 Macromolecular Chemistry □ INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY □ Toronto (*Organizing Committee*) 1/68

3-6 Light Scattering Spectra in Solids □ NEW YORK U. □ New York (J. Birman) [3/15] 2/68

3-7 Molecular Structure and Spectroscopy □ OHIO STATE U. □ Columbus, Ohio (K. N. Rao) 5/68

4-6 Physics and Chemistry of Electrophotography □ INSTITUTE OF OPTICS, U. OF ROCHESTER □ Rochester, N. Y. (W. L. Hyde) [6/1] 1/68

9-12 Elementary Particles □ IPPS □ London (*Meetings Officer, IPPS*) 2/68

9-14 • Physics of Ice □ FEDERAL MINISTRY OF SCIENTIFIC RESEARCH, BAVARIAN STATE MINISTRY OF EDUCATION AND CULTURE □ Munich, Germany (N. Riehl, *Physics Dept. Technische Hochschule München, Arcisstr. 21, D-8 Munich 2, Germany*) [6/1] 6/68

Topics will cover electrical and mechanical processes originating from proton transfer and relaxation in ice, diffusion and surface problems, phase transitions, structure problems and lattice dynamics.

9-14 ♦ Arnold Sommerfeld Centennial Memorial Meeting and Symposium on Physics of One- and Two-Electron Atoms □ IUPAP □ Munich, Germany for memorial session: (F. Bopp) 2/68 for symposium: (H. Kleinpoppen *Physics Dept., Columbia U., Columbia Radiation Lab., 538 W. 120 St., New York, N. Y. 10027*) 6/68

9-14 Statistical Mechanics □ IUPAP □ Tokyo (R. Kubo) 1/68

10-13 Nuclear Electronics □ SOCIÉTÉ FRANÇAISE DES ELECTRONICIENS ET RADIOÉLECTRICIENS □ Versailles, France (*Colloque International sur l'Electronique Nucléaire*) 5/68

10-15 Magnetic Oxides □ INSTITUTE OF PHYSICS OF THE ACADEMY OF SR

ROMANIA □ Bucharest, Romania (M. Rosenberg) 10/67

11-13 Physical Aspects of Noise in Electronics □ IPPS □ (*Meetings Officer, IPPS*) [5/31] 1/68

11-19 Integration of Science Teaching □ INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS □ Varna, Bulgaria (P. Fleury) 5/68

12, 13 • Solid-State Sensors and Transducers □ IEEE □ Minneapolis, Minn. (M. M. Atalla, *Hewlett-Packard, 1501 Page Mill Road, Palo Alto, Calif. 94304*) [4/17] 6/68

This conference will deal with study, design, fabrication and application of modern solid-state sensors that convert signal inputs into electrical or optical signal outputs.

12-14 • Structural Properties of Hydroxyapatite and Related Compounds □ OFFICE OF NAVAL RESEARCH, NBS □ Gaithersburg, Md. (R. A. Young, *Physics Dept., Georgia Institute of Technology, Atlanta, Ga. 30332*) 6/68

Aspects of apatitic materials to be covered will include ideal and defect crystal models, relation of physical and chemical properties to structure, theoretical and practical consideration of crystal growth in synthetic and natural systems.

16-19 Liquid Dielectrics □ CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE □ Grenoble, France (N. J. Felici) [2/1] 5/68

16-19 • National Meeting □ ELECTRON MICROSCOPY SOCIETY OF AMERICA □ New Orleans, La. (W. P. Jollie, *Anatomy Dept., Tulane University, School of Medicine, 1430 Tulane Ave., New Orleans, La. 70112*) 6/68

16-20 • Microwave and Optical Generation and Amplification □ IEEE □ Hamburg, F. R. Germany (MOGA 68, *Burchardstraße 19, c/o VALVO GmbH, D-2 Hamburg 1, Germany*) [4/10] 6/68

Topics: high-vacuum valves with linear-beam devices and with crossed electric and dc magnetic fields, effects of space-charge waves, gas discharge lamps, effects of the gas plasma, solid-state and semiconductor components, effect of stimulated emission.

16-21 □ 15TH AMPERE COLLOQUIUM □ St. Martin d'Hères, France (P. Averbuch) 9/67

16-21 Optical and Spectroscopic Phenomena in Ionic Crystals □ INSTITUTE OF PHYSICS OF THE ROMANIAN ACADEMY □ Bucharest, Romania (M. Giurgea) [3/30] 5/68

18-20 • Gas-Filled Valves □ IPPS □ U. of Southampton, England (*Meetings Officer, IPPS, 47 Belgrave Square, London, SW1*) [6/7] 6/68

All types of gas-filled devices will be dealt with, covering both electronic and power applications, hydrogen thyatrons, high- and low-voltage mercury-arc converters, ignitrons, voltage stabilizers.

23-26 Plasma Diagnostics □ IPPS □ Culham Laboratory, England (*Meetings Officer, IPPS*) [3/1] 5/68

23-27 Vacancies and Interstitials in Metals □ IUPAP □ Jülich, Ger-

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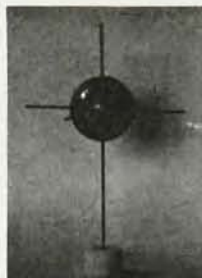
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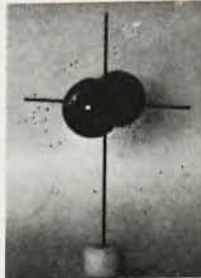
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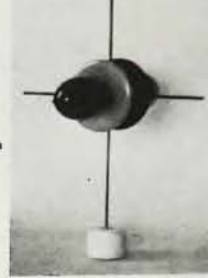
S orbital



$d_{x^2-y^2}$ orbital



p_y orbital



t_2 orbital

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The single s orbital is a sphere symmetrical with respect to the axis. The three p orbitals shown by one red and one yellow sphere lie along either the x, y or z axis. The $d_{x^2-y^2}$ orbital has two positive lobes separated by a negative disc with figure of eight cross section. The three d_{xy} , d_{xz} and d_{yz} orbitals have four lobes,

alternatively positive and negative, lying between the axes. The fifth d orbital $d_{z^2-y^2}$, has its lobes lying along the x and y axis. The f₃ orbital has one positive and one negative lobe lying along the z axis with each lobe surrounded by a 'crinoline' of the opposite sign; f₃ and f₃ differ only in the position

The complete set consists of sixteen models of orbitals—one s, three p, five d and seven f. Twenty-two sp hybrid orbitals (thirteen with large positive lobes and nine with negative) and twenty loose p orbitals are provided so that the form of a variety of molecular orbitals may be illustrated. Also available are sixty small white balls for showing the effect of point charges, and nine frames so that tetrahedral geometry may also be included. Models may be purchased singly or in complete sets of 16. All models are supplied assembled.

relative to the axis. The remaining four f orbitals have eight lobes in f_{xyz} . They are symmetrically placed between the axes. In the other three, $f_{x(y^2-z^2)}$, etc., they are rotated by 45° with respect to the axis so that they lie approximately between them. The models are approximately ten inches high.

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Assoc. Co. Nuclear Enterprises Ltd., Edinburgh, Scotland

many (W. Schilling) [5/15]
11/67

- 23-27 • **Color Centers in Alkali Halides** ☐ IUPAP ☐ Rome, Italy (U. M. Grassano, *Istituto di Fisica Guglielmo Marconi, Università di Roma, Piazzale delle Scienze 5, Roma, Italy*) [6/30] 6/68

Topics: electron-excess centers, hole-excess centers, localized excitations, optical properties, band structure, defect formation, impurity centers.

- 24-26 **Laser Measurements** ☐ INTERNATIONAL SCIENTIFIC RADIO UNION ☐ Warsaw, Poland (S. Hahn) [2/1] 10/67

- 25-27 **Stresses in Composite Materials** ☐ IPPS ☐ Cranfield, England (Meetings Officer, IPPS) [12/1] 1/68

- 25-27 **Ultrasonics** ☐ IEEE ☐ New York (F. M. Smits) [7/15] 2/68

OCTOBER 1968

- 2-4 • **Textures in Research and Practice** ☐ INSTITUT FÜR METALLKUNDE UND METALLPHYSIK ☐ Clausthal, Germany (*Institut für Metallkunde und Metallphysik, Technische Hochschule Clausthal, 3392 Clausthal-Zellerfeld, Großer Bruch 23, Germany*) 6/68

Topics: theory of texture formation (especially deformation and annealing textures), influence of precipitation and second-phase components, influence of phase transformations, texture and formability.

- 2-11 • **International Congress** ☐ S OF R ☐ Kyoto, Japan (M. Horio, *Department of Polymer Chemistry, Kyoto*) [3/1] 6/68

All aspects of rheology will be covered at this fifth international congress.

- 4, 5 **Low-Energy Nuclear Physics** ☐ NEW YORK STATE SECTION-APS ☐ State University of New York at Albany (J. Smith) 5/68

- 8-11 ☐ OSA ☐ Pittsburgh, Pa. (M. E. Wurga) [7/8] 11/67

- 14-17 • **Plasma Instabilities in Astrophysics** ☐ APS, AAS, AEC ☐ Pacific Grove, Calif. (P. A. Sturrock, *Institute for Plasma Research, Via Crespi, Stanford U. Stanford, Calif. 94305*) [7/15] 6/68

This conference will emphasize the significance of plasma physics to astrophysics through discussion of topics such as two-stream, velocity anisotropy, mhd and resistive instabilities, mhd and microscopic turbulence, collision-free shock waves, radio emission from the sun, radio galaxies and quasars, origin and macroscopic effects of cosmic waves.

- 14-18 **Packaging and Transportation of Radioactive Materials** ☐ ORNL, AEC ☐ Gatlinburg, Tenn. (K. W. Haff) [1/1] 2/68

- 16-18 • **Gaseous Electronics** ☐ APS, JOINT INSTITUTE FOR LABORATORY ASTROPHYSICS ☐ Boulder, Colo. (G. H. Dunn, *JILA, U. of Colorado, Boulder, Colo. 80302*) [8/26] 6/68

- 21-23 **Silicon Carbide** ☐ AFCRL ☐ University Park, Pa. (J. W. Faust) 4/68

- 21-25 • **Advanced and High-Temperature Gas-Cooled Reactors** ☐ IAEA ☐ Jülich, Germany (J. H. Kane, *Chief, Conferences Branch, Division of Technical Information, USAEC, Washington, D. C. 20545*) [7/1] 6/68

Topics: experience with existing reactors (design, construction, components, operation, safety aspects), fuel, moderator and materials development and performance, advanced designs, fuel cycles, economics, potential in future nuclear-power programs.

- 28-30 • **Applied Superconductivity** ☐ APS, AEC, IEEE, ORNL ☐ Gatlinburg, Tenn. (W. F. Gauster, *Oak Ridge National Laboratory Building 9201-2, P. O. Box Y, Oak Ridge, Tenn. 37830*) [8/5] 6/68

Discussions will include high-field magnets, flux pumps, dynamos and motors, transmission lines and slow-wave structures, computer switching and storage, magnetometers, radiation detectors, low-noise amplifiers, Josephson and weak-junction phenomena, rf and microwave devices, accelerators and electron microscopes.

- 28-31 **Instrumentation** ☐ INSTRUMENT SOCIETY OF AMERICA ☐ New York (O. W. Williams) [2/1] 1/68

- 29-1 **Annual Symposium** ☐ AVS ☐ Pittsburgh, Pa. (W. J. Lange) [6/15] 4/68

NOVEMBER 1968

- 10-15 • **Winter Meeting** ☐ AMERICAN NUCLEAR SOCIETY ☐ Washington, D. C. (F. Schroeder, *American Nuclear Society, Inc., 244 East Ogden Ave, Hinsdale, Ill. 60521*) [7/15] 6/68

Topics: aerospace and nuclear technology, isotopes and radiation applications, materials, nuclear criticality safety, nuclear-explosive engineering, nuclear education, physics and mathematics, reactor operations and power, remote-systems technology, shielding.

- 18-21 **Magnetism and Magnetic Materials** ☐ AIP, IEEE ☐ New York (D. T. Teaney) 3/68

- 19-21 ☐ ASA ☐ Cleveland, Ohio (J. L. Hunter) 3/68

- 19-21 • **Physics in the Metal Forming Industries** ☐ IPPS ☐ Harrogate, Yorkshire England (Meetings Officer, IPPS, 47 Belgrave Square, London, SW1) [4/30] 6/68

- 21, 22 • **Chemical Kinetics** ☐ U. OF NORTH CAROLINA ☐ Chapel Hill, N. C. (L. Pedersen, *Chem. Dept., U. of North Carolina, Chapel Hill, N. C. 27514*) 6/68

- 25-27 **Fall Meeting and Nuclear Physics Div.** ☐ APS ☐ Miami Beach, Fla. (W. W. Havens) 3/68

DECEMBER 1968

- 2-4 ☐ AMERICAN GEOPHYSICAL UNION ☐ San Francisco (J. C. Harrison) [10/1] 2/68

- 4-7 • **Annual Meeting** ☐ AMERICAN ASSOCIATION OF PHYSICISTS IN

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Dr. G. M. Volkoff, Head, Department of Physics, University of British Columbia, VANCOUVER 8, B.C., Canada.

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MEDICINE ☐ Chicago (R. O. Gorson, Stein Research Center, Jefferson Medical College, 920 Chancellor St., Philadelphia, Pa. 19107) [10/1] 6/68

11-13 ☐ AAS ☐ Austin, Tex. (P. M. Routly) 3/68

16-20 Relativistic Astrophysics ☐
SOUTHWEST CENTER FOR ADVANCED STUDIES ☐ Dallas (I. Robinson) 9/67

18-20 Winter Meeting ☐ APS ☐ San Diego (W. Whaling) [10/15] 2/68

JANUARY 1969

11-15 • Annual Meeting ☐ S OF R ☐
Williamsburg, Va. (J. G. Brodnyan, Research Laboratories, Rohm and Haas Co., Spring House, Pa. 19477) 6/68

FEBRUARY 1969

3-6 Annual Meeting ☐ AAPT-APS ☐
New York (W. W. Havens) 4/68

27-1 Southwest Meeting ☐ APS ☐ St. Louis, Mo. (W. Whaling) 4/68

MARCH 1969

11-15 ☐ OSA ☐ San Diego, Calif. (M. E. Warga) 4/68

24-26 Chemical, High-Polymer and Solid-State Physics Div. ☐ APS ☐
Philadelphia, Pa. (W. W. Havens) 5/68

APRIL 1969

8-11 • ☐ ASA ☐ Philadelphia, Pa.

28-1 Spring Meeting and Nuclear Physics Div. ☐ APS ☐ Washington, D. C. (W. W. Havens) 5/68

28-2 • Thin Films ☐ INTERNATIONAL CONFERENCE ON THIN FILMS ☐
Boston, Mass. (M. H. Francombe, Westinghouse Research Laboratories, Beulah Road, Pittsburgh, Pa. 15235) [11/29] 6/68

The conference will emphasize structure-sensitive properties of thin films. Topics include influence of structure on the electrical, magnetic, dielectric mechanical and optical properties of films.

JUNE 1969

18-20 • Summer East Meeting ☐ APS ☐
Rochester, N. Y. (W. W. Havens, 335 E. 45 St., New York, N. Y. 10017) 6/68

23-25 • Summer Meeting ☐ AAPT ☐
St. Louis, Mo.

JANUARY 1970

26-29 Annual Meeting ☐ APS ☐ Chicago ☐



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