

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

JULY 1968

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

15-8 Orbital-Electron Capture ☐ HUNGARIAN ACADEMY OF SCIENCES ☐ Debrecen, Hungary (R. W. Fink) 2/68

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

15-19 • Spectral Line Shapes ☐ GORDON RESEARCH CONFERENCE ☐ Andover, N. H. (W. George Parks, Chemistry, Dept., U. of Rhode Island, Kingston, R. I. 02881) 7/68

Topics: spectral line shapes in plasmas, experimental studies in collision-induced absorption, collision-induced absorption in polyatomic molecules, Liouville operator techniques, kinetic equation approach.

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

22-26 • Color Measurement ☐ CLEMSON U. ☐ Clemson, S. C. (H. J. Keegan, Director, Color Measurement Seminars, School of Industrial Management and Textile Science, Clemson U., Clemson, S. C. 29631) 7/68

Topics: physics and chemistry of color measurement by means of spectrophotometer, colorimeters and computers for use in research laboratory and plant.

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. Wenner) 5/68

31-2 First Annual Meeting ☐ ELEC-

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JULY 1968

TRON 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) [5/1] 6/68
 - 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
 - 19-24 • **Summer Conference** ☐ NEW ENGLAND ASSOCIATION OF CHEMISTRY TEACHERS ☐ Wesleyan U., Middleton, Conn. (P. Testa, Putnam St, Wilton, N. H.) 7/68
- The program will include discussions of molecular models, chemical bonding, programmed audio learning systems for general chemistry, light transition elements, development of nomenclature in organic chemistry.
- 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) [2/26] 6/68
 - 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
 - 26-28 • **Abundant Nuclear Energy** ☐ AEC, ORNL ☐ Gatlinburg, Tenn. (Special Projects Office, Oak

Ridge Associated Universities,
P. O. Box 117, Oak Ridge, Tenn.
37830) 7/68

Topics: implications of low-cost nuclear energy, production of metals, technology of electrolytic methods, low-temperature heat, applications.

- 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, Steele) [2/2] 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. Rosenberg) [4/30] 6/68
- 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) 6/68
- 3-6 **Macromolecular Chemistry** □ INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY □ Toronto (Organizing Committee) 1/68
- 3-6 ♦ **Light Scattering Spectra in Solids** □ IUPAP □ New York (J. Birman) [3/15] 2/68

Post-deadline papers will be accepted

- 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) [6/1] 6/68
- 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) 6/68
- 9-14 **Statistical Mechanics** □ IUPAP □ Tokyo (R. Kubo) 1/68

- 10-13 **Nuclear Electronics** □ SOCIÉTÉ FRANÇAISE DES ELECTRONICIENS ET RADIOELECTRICIENS □ 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) [4/17] 6/68

- 12-14 **Structural Properties of Hydroxyapatite and Related Compounds** □ OFFICE OF NAVAL RESEARCH, NBS □ Gaithersburg, Md. (R. A. Young) 6/68

- 16-18 ♦ **Advanced Space Experiments** □ AMERICAN ASTRONAUTICAL SOCIETY □ Ann Arbor, Mich. (P. A. Brooks, Space Physics Research Lab, U. of Michigan, Ann Arbor, Mich. 48104) 7/68

Topics: planetary, orbital and fly-by experiments, planetary surface experiments, lunar orbital experiments, particle and field experiments.

- 16-19 **Liquid Dielectrics** □ CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE □ Grenoble, France (N. J. Felici) [2/1] 6/68

- 16-19 **National Meeting** □ ELECTRON MICROSCOPY SOCIETY OF AMERICA □ New Orleans, La. (W. P. Jollie) 6/68

- 16-20 **Microwave and Optical Generation and Amplification** □ IEEE □ Hamburg, F. R. Germany (MOGA 68) [4/10] 6/68

- 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

- 17-20 ♦ **Engineering Uses of Holography** □ U. OF STRATHCLYDE, NATIONAL PHYSICAL LABORATORY □ Glasgow, England (E. R. Robertson, U. of Strathclyde, Montrose St., Glasgow, C1, England) 7/68

Topics included will be interferometry, micro-circuit manufacture, measuring techniques, computer-generated holograms, fatigue and acoustic detection, particle-size examination, holographic real-image motion projection system, pulsed-laser techniques.

- 18, 19 ♦ **Electrical Properties of Polymers** □ IPPS □ University of Wales, Cardiff (M. E. Biard, Dept. of Applied Physics, U. of Wales Institute of Science and Technology, Cathaus Park, Cardiff, CF1 3NU) [6/15] 7/68



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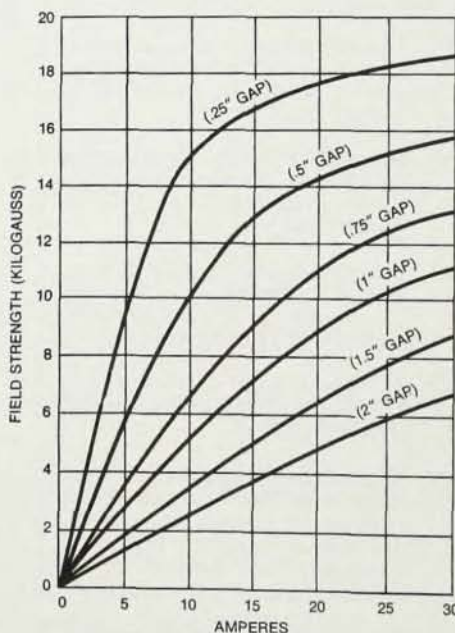
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SEPTEMBER 1968

Topics: dielectric behavior, dc conductivity, dielectric breakdown.

- 18-20 Gas-Filled Valves ☐ IPPS ☐ U. of Southampton, England (Meetings Officer, IPPS) [6/7] 6/68
- 23-26 Plasma Diagnostics ☐ IPPS ☐ Culham Laboratory, England (Meetings Officer, IPPS) [3/1] 5/68
- 23-27 Vacancies and Interstitials in Metals ☐ IUPAP ☐ Jülich, Germany (W. Schilling) [5/15] 11/67
- 23-27 Color Centers in Alkali Halides ☐ IUPAP ☐ Rome, Italy (U. M. Grassano) [6/30] 6/68
- 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) 6/68
- 2-11 International Congress ☐ S OF R ☐ Kyoto, Japan (M. Horio) [3/1] 6/68
- 4, 5 Low-Energy Nuclear Physics ☐ NEW YORK STATE SECTION-APS ☐ State University of New York at Albany (J. Smith) 5/68
- 7-10 Thermal Conductivity ☐ THERMOPHYSICAL PROPERTIES RESEARCH CENTER ☐ Purdue U., West Lafayette, Ind. (W. H. Shafer, Thermophysical Properties Research Center, 2595 Yeager Road, W. Lafayette, Ind. 47906) 7/68

The conference will cover all aspects of thermal transport in solids, liquids and gases.

- 8-10 Analytical Chemistry in Nuclear Technology ☐ ORNL ☐ Gatlinburg, Tenn. (L. J. Brady, Oak Ridge National Laboratory, P. O. Box X, Oak Ridge, Tenn. 37830) [7/1] 7/68

The theme of this conference will be the role of the analytical chemist in research and production on the chemical properties of the actinide elements, and solution of problems in environmental pollution.

Topics: analytical chemistry of the actinide elements including ionic and radiochemical methods, environmental pollution with regard to identification of hazards in water and the atmosphere.

- 9-12 Annual Meeting ☐ OSA ☐ Pittsburgh, Pa. (M. E. Warga, OSA, 2100 Pennsylvania Avenue, N. W., Washington, D. C. 20037) [7/8] 7/68

The meeting will include a symposium on holography, and invited papers on physiological optics, upper-atmosphere research, the physics of photochromic materials.

- 10, 11 • **Applications of Ferroelectrics** □
CATHOLIC U. OF AMERICA, IEEE □
Washington, D. C. (H. L. Stadler, *Engineering and Research Staff*, P. O. Box 2053, Ford Motor Co, Dearborn, Mich. 48121) [7/1] 7/68

- 14-17 **Plasma Instabilities in Astrophysics** □ APS, AAS, AEC □
Pacific Grove, Calif. (P. A. Sturrock) [7/15] 6/68

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

- 15-17 • **Switching and Automata Theory** □ IEEE □ Schenectady, N. Y. (P. M. Lewis, II, *General Electric R & D Center*, Box 8, Schenectady, N. Y. 12301) [8/17] 7/68

Topics to be covered include abstract languages, adaptive logic, automata theory, iterative circuits, minimization techniques, sequential machines, threshold logic.

- 16-18 **Gaseous Electronics** □ APS, JOINT INSTITUTE FOR LABORATORY ASTROPHYSICS □ Boulder, Colo. (G. H. Dunn) [8/26] 6/68

- 20-23 • **Electrical Insulation and Dielectric Phenomena** □ NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL □ Buck Hill Falls, Pa. (R. A. Cliffe, *Conference on Electrical Insulation and Dielectric Phenomena*, National Academy of Sciences, 2101 Constitution Avenue, N. W., Washington, D. C. 20418) 7/68

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

- 21-25 **Advanced and High-Temperature Gas-Cooled Reactors** □ IAEA □ Jülich, Germany (J. H. Kane) [7/1] 6/68

- 23-25 • **Nuclear Science** □ IEEE □ Montreal, Canada (R. Green, *RCA Victor Ltd., RCA Research Laboratories*, 10001 Lenoir St., Montreal 30, Canada) [5/10] 7/68

Topics: detectors, research and power-reactor instrumentation, nuclear space instrumentation, data processing for nuclear experiments, or reactor control.

- 28, 29 • **Hybrid Microelectronics** □ INTERNATIONAL SOCIETY FOR HYBRID MICROELECTRONICS, IEEE □ Rosemont, Ill. (A. H. Mones, *IBM Corp, E. Fishkill Facility*, Rte. 52, Hopewell Junction, N. Y. [6/1] 7/68

Topics: electrical, mechanical and thermal design principles, materials selection, components choice, assembly methods, reliability and failure-mode analysis.

- 28-30 **Applied Superconductivity** □ APS, AEC, IEEE, ORNL □ Gatlinburg, Tenn. (W. F. Gauster) [8/5] 6/68

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

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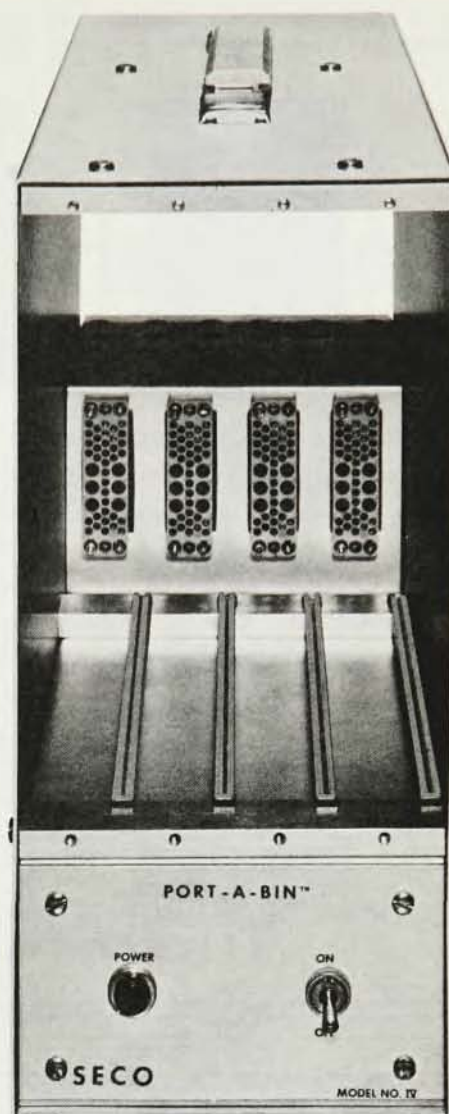
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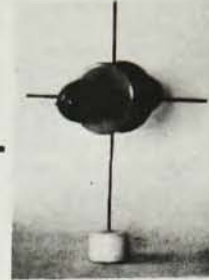
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p_y orbital



f_3 orbital

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alternatively positive and negative, lying between the axes. The fifth d orbital $d_{x^2-y^2}$ has its lobes lying along the x and y axis. The f_3 orbital has one positive and one negative lobe lying along the z axis with each lobe surrounded by a 'crinoline' of the opposite sign: f_{x3} and f_{y3} differ only in the position

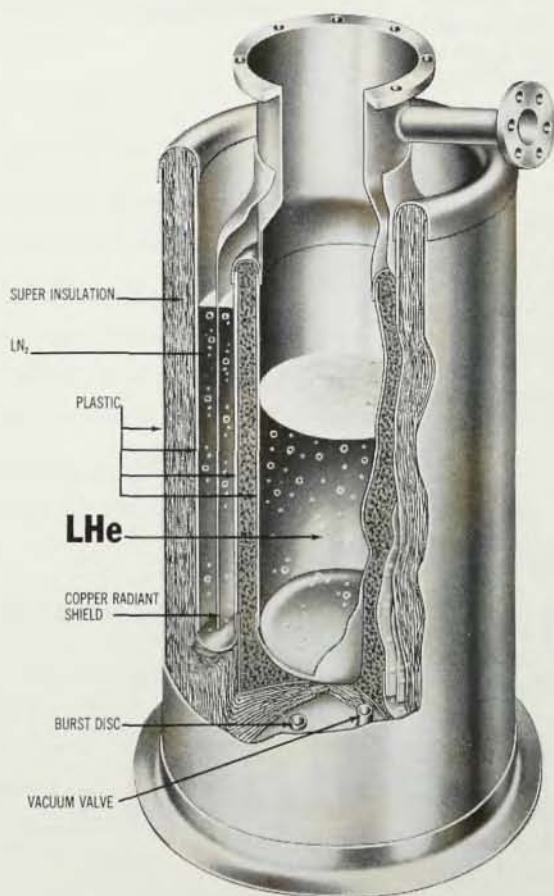
relative to the axis. The remaining four f orbitals have eight lobes in f_{xyz} . They are symmetrically placed between the axes. In the other three, $f_{x(y^2-z^2)}$, etc., they are rotated by 45° with respect to the axis so that they lie approximately between them. The models are approximately ten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

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OCTOBER 1968

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

NOVEMBER 1968

- 6-8 • **Pittsburgh Diffraction Conference** ☐ MELLON INSTITUTE ☐
Pittsburgh, Pa. (S. Diamond,
United States Steel Corp., Applied Research Laboratory, Monroeville, Pa. 15146) [9/9] 7/68

Topics: x-ray, proton and electron scattering, applications of Kossel and Kikuchi lines, cosmic-ray sources and extra-terrestrial radiation.

- 10-15 **Winter Meeting** ☐ AMERICAN NUCLEAR SOCIETY ☐ Washington, D. C. (F. Schroeder) [7/15] 6/68

- 13-16 • **Annual Meeting** ☐ PLASMA PHYSICS DIV.-APS ☐ Miami Beach, Fla. (W. B. Ard, Oak Ridge National Laboratory, P. O. Box Y, Oak Ridge, Tenn. 37830) [9/12] 7/68

- 18-21 • **Magnetism and Magnetic Materials** ☐ AIP, IEEE ☐ New York (D. T. Teaney) 3/68 [8/9]

- 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) [4/30] 6/68

- 21, 22 **Chemical Kinetics** ☐ U. OF NORTH CAROLINA ☐ Chapel Hill, N. C. (L. Pedersen) 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 MEDICINE ☐ Chicago (R. O. Gorson [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) 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

- 6,7 • **Acoustical Holography** ☐ DOUGLAS ADVANCED RESEARCH LABORATORIES, ☐ Huntington Beach, Calif. (Secretary, 2nd International Symp. Acoust. Holography, Douglas Advanced Research Laboratories, McDonnell Douglas Corp, 5251 Bolsa Avenue, Huntington Beach, Calif. 92647) [12/2] 7/68

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

- 13-15 • **Isobaric Spin** ☐ APS ☐ Pacific Grove, Calif.

- 23-29 • ☐ ACA ☐ Seattle, Wash.

- 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) [11/29] 6/68

JUNE 1969

- 23-25 • **Shock Tubes** ☐ APS ☐ Toronto

- 18-20 **Summer East Meeting** ☐ APS ☐ Rochester, N. Y. (W. W. Havens) 6/68

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

AUGUST 1969

- 13-21 • **International Congress** ☐ INTERNATIONAL UNION OF CRYSTALLOGRAPHY ☐ Stony Brook, N. Y. (International Union of Crystallography, Congress Headquarters, State University of New York at Stony Brook, Stony Brook, N. Y. 11790) [6/1] 7/68

SEPTEMBER 1969

- 2-4 • **Summer West Meeting** ☐ APS ☐ Honolulu

OCTOBER 1969

- 19-21 • ☐ S OF R ☐ St. Paul, Minn.

- 21-24 • ☐ OSA ☐ Chicago

- 29-31 • **Gaseous Electronics** ☐ APS ☐ Gatlinburg, Tenn.

JANUARY 1970

- 26-29 **Annual Meeting** ☐ APS ☐ Chicago ☐

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