

CALENDAR

Abbreviations:

AAPT—American Association of Physics Teachers
 AAS—American Astronomical Society
 ACA—American Crystallographic Assoc.
 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
 AFCLRL—Air Force Cambridge Research Laboratories

ANS—American Nuclear Society
 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:

date subject ☐ HOST ☐ Location (Contact) [submission deadline] *Physics Today* ref.

• new listing ♦ new information

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.

APRIL 1969

15-18 **Intermag** ☐ IEEE ☐ Amsterdam
 (Th. Holtwijk) 9/68

15-18 **Conference on the Physics of Liquids** ☐ SOLID STATE PHYSICS SUBCOMMITTEE, IPPS ☐ Norwich, Norfolk, England (Meetings Officer) 10/68

16-18 **Thin Films** ☐ IPPS ☐ University of York (Meetings Officer) 3/69

16-18 **Geoscience Electronics Symposium** ☐ IEEE ☐ Washington, D. C. (M. E. Ringenbach) 10/68

17, 18 **Coherent Optics and Instrumentation** ☐ OAKLAND UNIVERSITY ☐ Rochester, Mich. (Conference Dept.) 2/69

17, 18 • **Cryogenics and Infrared Detection Systems** ☐ 500 INCORPORATED ☐ Frankfurt, W. Germany (B. Powell, 555 Acorn Park, Cambridge, Mass. 02140) 4/69

18, 19 • **Undergraduate Physics Conference** ☐ SOCIETY OF PHYSICS STUDENTS, INDIANA U. OF PENNSYLVANIA (R. L. Longwill, Physics Dept., Indiana U. of Pennsylvania, Indiana, Pa. 15701) 4/69

18, 19 **APS OHIO SECTION** ☐ Kent State U. ☐ Kent, Ohio (A. A. Silvadi) 3/69

19 ☐ AAPT IOWA SECTION ☐ Uni-

versity of Northern Iowa (D. Hutchinson) 1/69

21-25 **Fundamental Aspects of Dislocation Theory** ☐ NBS ☐ Washington, D. C. (J. A. Simmons) by invitation only 8/68

21-25 **50th Anniversary Meeting** ☐ AMERICAN GEOPHYSICAL UNION ☐ Washington, D. C. (Geophysical Union Headquarters) 8/68

21-25 **Solid State Chemistry** ☐ ARIZONA STATE U. ☐ Scottsdale, Ariz. (L. Eyring) 8/68

27-30 • **Conference on Isotopes Application** ☐ OAK RIDGE NATIONAL LAB., OAKRIDGE ASSOC. UNIVERSITIES, AEC ☐ Gatlinburg, Tenn. (J. H. Gillette, Isotopes Div., Oak Ridge National Lab., P.O. Box X, Oak Ridge, Tenn. 37830) 4/69

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

28-2 **Thin Films** ☐ INTERNATIONAL CONFERENCE ON THIN FILMS ☐ Boston, Mass. (M. H. Francombe) 6/68

28-30 **Surface Science, Effusion and Evaporation** ☐ NEW MEXICO SECTION AVS, LOS ALAMOS SCIENTIFIC LABORATORY ☐ Los Alamos, N. M. (C. Winkelman) 8/68

TEXTBOOKS FROM SPRINGER-VERLAG NEW YORK, INC.:

MATHEMATICAL FOUNDATIONS OF NETWORK ANALYSIS

By P. Slepian

Springer Tracts in Natural Philosophy, Volume 16
 xii, 195 pp. 1968. Cloth. \$11.00

ECLIPSE PHENOMENA IN ASTRONOMY

By F. Link

approx. 320 pp. approx. 159 illus.
 1969. Cloth. \$19.50

PRACTICAL WORK IN ELEMENTARY ASTRONOMY

By M. G. J. Minnaert

approx. xxiii approx. 247 pp.
 approx. 81 illus.

Tables. Index of Subjects. References following each section.

1969. Cloth. \$9.20

Co-published with Reidel Publishing Company, Dordrecht/Holland.

RE-ENTRY AND PLANETARY ENTRY: PHYSICS AND TECHNOLOGY

Authored and edited by W. H. T. Loh

Part I: Dynamics, Physics, Radiation, Heat Transfer and Ablation

Applied Physics and Engineering Series, Volume 2 xii, 487 pp. 252 illus.
 1968. Cloth. \$19.80

Part II: Advanced Concepts, Experiments, Guidance Control and Technology

Applied Physics and Engineering Series, Volume 3 x, 292 pp. 219 illus.
 1968. Cloth. \$12.40

JET, ROCKET, NUCLEAR, ION AND ELECTRIC PROPULSION: THEORY AND DESIGN

Authored and edited by W. H. T. Loh

Applied Physics and Engineering Series, Volume 7 xvi, 765 pp. 203 illus.
 1968. Cloth. \$24.80

ARC PHYSICS

By M. F. Hoyaux

Applied Physics and Engineering Series, Volume 8 xiii, 306 pp. 59 illus.
 1969. Cloth. \$14.50

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Booth 94, Spring Physics Show



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Research Associates in Nuclear Structure Physics

There are two vacancies at the Rutherford Laboratory for experimental nuclear physicists to join the Nuclear Physics Group as Research Associates.

Nuclear structure physics research at the Rutherford Laboratory has hitherto centered on the 50 MeV Proton Linear Accelerator. Following the shutdown of this machine in October 1969 the work of the group will be transferred to machines available at A.E.R.E. which adjoins the Rutherford Laboratory site. These machines include a variable energy cyclotron (60 MeV protons), a synchrocyclotron (150 MeV protons) and a tandem electrostatic generator (12 MeV protons). The possibility of using beams available from the 7 GeV proton synchrotron Nimrod for the study of nuclei is also being investigated in collaboration with teams from British Universities.

Candidates will be expected to hold a higher research degree or to have had the equivalent post graduate research experience in experimental nuclear structure or elementary particle physics.

Research Associates are appointed for a period of 3 years and are paid a fixed salary for the duration of the Association; the salary will be based on the broad lines of the Scientific Officer Class (at present ranging from about £1,200 to £3,000 per annum) according to age, qualifications and experience.

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Please send a postcard for application form to Mr. A. G. Taylor, the Rutherford Laboratory, quoting ref. 153/582.

- 30-3 Instrument Conference, Exhibit and Education Symposium □ INSTRUMENT SOCIETY OF AMERICA □ Memphis, Tenn. (D. L. McPherson) 12/68

MAY 1969

- 2 □ ELECTRON AND ATOMIC PHYSICS DIV.—APS □ Washington, D. C. (W. W. Havens Jr) 11/68
- 3-8 Annual Meeting □ AMERICAN CERAMIC SOCIETY □ Columbus, Ohio (D. W. Readey) 2/69
- 4-9 Spring Meeting □ ELECTROCHEMICAL SOCIETY □ New York (Electrochemical Society) 8/68
- 5-7 Aerospace Instrumentation Symposium □ INSTRUMENT SOCIETY OF AMERICA □ Las Vegas, Nevada (D. Limbacher) 12/68
- 5-7 • Hypernuclear Physics □ ARGONNE NATIONAL LAB. (L. G. Hyman, Argonne National Lab., Bldg. 362, 9700 South Cass Ave., Argonne, Ill., 60439) [4/15] 4/69
- 5-8 • Microwave Symposium □ IEEE □ Dallas (IEEE, 345 E. 47th St., New York, N.Y. 10017) 4/69
- 6-8 Frequency Control Symposium □ ELECTRONIC COMPONENTS LABORATORY, US ARMY ELECTRONICS COMMAND □ Fort Monmouth, N. J. (Director, Electronic Components Lab.) 12/68
- 6-8 Nuclear Electronics Symposium □ NORTH ITALY SECTION, IEEE □ Ispira, Italy (Luciano Stanchi) 12/68
- 6-9 Nuclear Track Registration in Insulating Solids and Applications □ Clermont-Ferrand (Jourentra, Faculté des Sciences) 3/69
- 7-9 Annual Symposium □ AVS SOUTH-WEST SECTION (R. P. Fedchenko) 10/68
- 8-10 • X- and Gamma-Ray Astronomy □ Rome (L. Gratton, Laboratorio di Astrofisica, C.P. 67, Frascati, Rome, Italy) 4/69
- 12-15 Symposium on Spectroscopy □ CHICAGO SECTION-SOCIETY FOR APPLIED SPECTROSCOPY, CHICAGO GAS CHROMATOGRAPHY GROUP □ Chicago (R. L. Terry) 12/68
- 14-16 • Semiconductor Effects in Amorphous Solids Symposium □ PICATINNY ARSENAL & ARMY RESEARCH OFFICE □ New York (W. Doremus, Dept. of the Army, Picatinny Arsenal, Dover, N.J.) 4/69
- 14-17 □ ANS ISOTOPES AND RADIATION DIV. □ San Juan, P. R. (O. J. Du Temple)
- 15 Forefront in Optics □ OSA NEW ENGLAND SECTION □ Worcester Polytechnic Institute (B. Hanatow) 3/69
- 18-23 Mass Spectrometry □ AMERICAN

70 Summer Sessions for 1969 Gordon Research Conferences

70 Gordon Research Conferences will be held from 9 June to 29 Aug. at six New Hampshire locations and at Providence Heights College, Issaquah, Wash. Given annually, the conferences are aimed at stimulating research in universities, research foundations and industrial laboratories.

Morning and evening meetings leave afternoons free for discussion and recreation. Emphasis is on latest developments and suggestions for progress rather than reviews of known information. To encourage the free exchange of ideas, no conference proceedings are published and participants wishing to use information must secure authorization of the contributor.

Admission is by application, available from A. M. Cruckshank, Director, Pastore Chemical Laboratory, University of Rhode Island, Kingston, R. I. Applications should be received two months prior to the conference date. Attendance at each conference is limited to approximately 100.

Some physics-related conferences include:

Scientific Information and Problems in Research, 14-18 July, Colby Junior College, New London, N. H.

Magnetic Resonance, 9-13 June; Chemistry and Physics of Cellular Materials, 18-22 Aug., New Hampton School, New Hampton, N. H.

Chemistry and Physics of Solids, 11-15 Aug., Kimball Union Academy, Meriden, N. H.

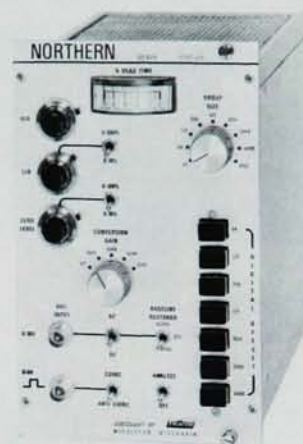
Chemistry and Physics of Space, 7-11 July; Nuclear Structure Physics, 28 July-1 Aug., Tilton School, Tilton, N. H.

Physical Acoustics, 7-11 July, Proctor Academy, Andover, N. H.

Chemistry and Physics of Isotopes, 21-25 July; Chemistry and Physics of Liquids, 11-15 Aug., Holderness School, Plymouth, N. H.

Plasma Physics, 23-27 July; Physical Metallurgy, 7-11 July; Laser Interaction with Matter, 25-29 Aug., Providence Heights College.

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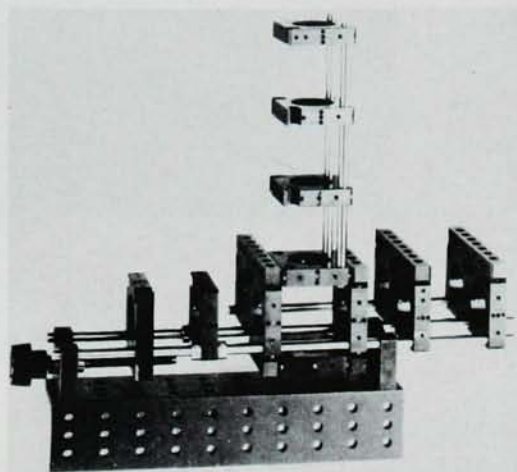
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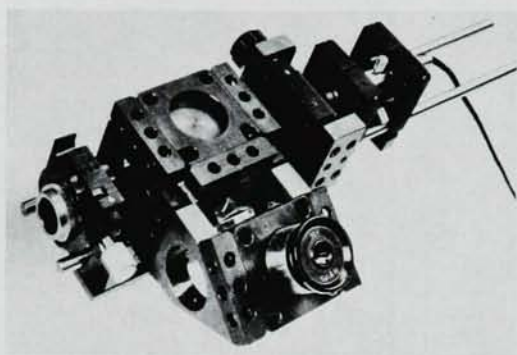
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MAY 1969

SOCIETY FOR TESTING AND MATERIALS □ Dallas (J. M. McCrea) 1/69

19-21 Offshore Technology □ AMERICAN INSTITUTE OF MINING, METALLURGICAL AND PETROLEUM ENGINEERS □ Houston, Tex. (C. Karlson) 8/68

21-23 Electron, Ion, and Laser Beam Technology □ IEEE, NBS, AVS, UNIVERSITY OF MARYLAND □ Gaithersburg, Md. (L. Marton) 2/69

22-23 Applied Magnetics □ IEEE □ Washington, D. C. (O. Kiltie) 3/69

26-28 Laser Engineering □ IEEE □ Washington, D. C. (F. R. Arams) 8/68

27-30 Annual Meeting □ SOCIÉTÉ DE CHIMIE PHYSIQUE □ Paris (Secrétaire Général de la Société de Chimie Physique) 10/68

JUNE 1969

2-6 Radiation Damage in Reactor Materials □ IAEA □ Vienna, Austria (J. H. Kane, U.S. Atomic Energy Commission, Washington, D.C. 20545) 2/69

2-6 • General Relativity □ AEROSPACE RESEARCH LABS., U. OF CINCINNATI □ U. of Cincinnati (L. Witten, Physics Dept., U. of Cincinnati, Ohio 45221) 4/69

8-12 Annual Meeting □ HEALTH PHYSICS SOCIETY □ Pittsburgh, Pa. (R. F. Cowing) 10/68

12-13 Kinetic Equations □ Cornell U. (L. Liboff) by invitation only 3/69

15-28 Magnetism □ INTERNATIONAL CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haide-menakis) 3/69

16, 17 Polymers in High Performance Applications □ London (The Plastics Institute) 12/68

16-18 Structures of Water and Aqueous Solutions □ U. OF CHICAGO (G. E. Walrafen) 2/69

16-18 Fluid and Plasma Dynamics □ AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS □ San Francisco (P. A. Libby) 1/69

16-18 Thermophysics Conference □ AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS □ San Francisco (E. R. Streed) 1/69

16-19 Annual Meeting □ ANS □ Seattle, Wash. (O. J. Du Temple) 11/68

16-20 Metal-Ammonia Solutions □ CORNELL U. □ Ithaca, N. Y. (J. J. Lagowski) 2/69

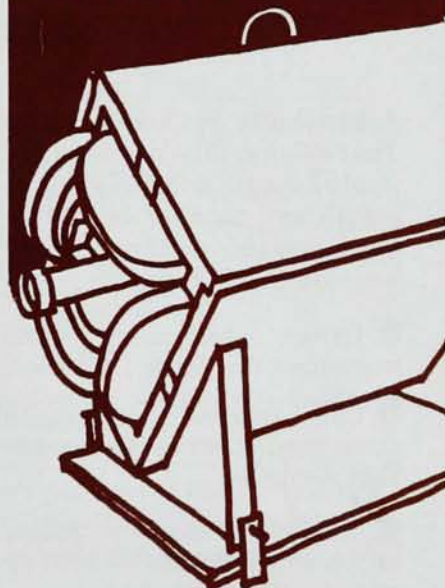
16-20 Conference on Carbon □ AMERI-

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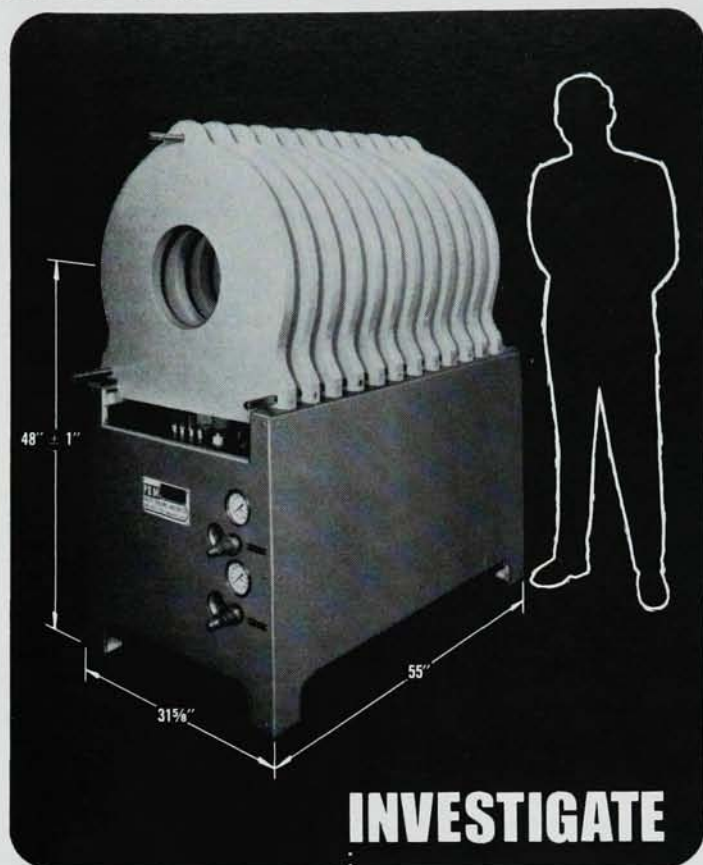
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Boston (A. I. Medalia) 3/69

17-20 **Planning Challenges of the 70's in Space and the Public Domain** □ OPERATIONS RESEARCH SOCIETY OF AMERICA, AMERICAN ASTRONAUTICAL SOCIETY □ Denver, Colo. (J. G. Shaffer) 12/68

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

18-20 • **Symmetries and Quark Models** □ WAYNE STATE U. □ Detroit (R. Chand, Physics Dept., Wayne State U., Detroit, Mich. 48202) 4/69

23-25 **Shock Tubes** □ APS □ Toronto

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

23-27 **Annual Meeting** □ SOCIETY OF NUCLEAR MEDICINE □ New Orleans, La. (S. N. Turiel) 11/68

23-27 **Conference on Plasma Physics and Controlled Fusion** □ FOM-INSTITUTE FOR PLASMA PHYSICS □ Utrecht, Netherlands (FOM-Institute for Plasma Physics) 11/68

25-28 **Annual Meeting** □ CANADIAN ASSOC. OF PHYSICISTS □ Waterloo, Ontario (D. D. Betts) 3/69

29-12 **Optical Properties of Solids** □ INTERNATIONAL CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haidemenakis) 3/69

30-1 **Fibres for Composites: Strength, Structure and Stability** □ MATERIALS AND TESTING AND CARBON AND GRAPHITE GROUPS, IPPS □ University of Sussex (Meetings Officer) 2/69

30-4 **From Theoretical Physics to Biology** □ THERMODYNAMICS AND STATISTICAL MECHANICS COMMISSION, IUPAP □ Versailles, France (R. Kubo) 2/69

JULY 1969

1-4 • **High and Intermediate Energy Molecular Beams** □ Cannes, France (F. M. Devienne, Laboratoire de Physique Moléculaire des Hautes Energies, 06, Peymeinade, France) 4/69

2-4 **Lasers in Medicine** □ IPPS, ROYAL SOCIETY OF MEDICINE, OPHTHALMOLOGICAL SOCIETY, HOSPITAL PHYSICISTS ASSOCIATION □ London (Meetings Officer) 1/69

7-11 **Nuclear and Space Radiation Effects** □ IEEE □ Pennsylvania State U. (E. A. Burke) 3/69

8-10 **Three-Body Problem in Nuclear and Particle Physics** □ Birmingham, England (Administrative Officer, Dept. of Physics) 1/69

13-19 **Short Laser Pulses and Coherent Interactions** □ INTERNATIONAL

CENTER FOR ADVANCED STUDIES □ Chania, Crete (E. D. Haidemenakis, 2 Rue de Furstenberg, Paris 6^e, France) 3/69

14-16 • **Electron Microscopy** □ ELECTRON MICROSCOPY AND ANALYSIS GROUP, IPPS □ St. Catherine's College, Oxford (Meetings Officer, IPPS, 47 Belgrave Sq., London, S.W.1) 4/69

14-18 **Atomic Absorption Spectroscopy** □ IPPS □ Sheffield, England (AAS Conference Secretary) 8/68

14-19 **Instruments and Techniques** □ INTERNATIONAL COMMISSION FOR

OPTICS, IUPAP □ Reading, England (W. L. Hyde) 2/69

15-18 **Nuclear Reactions Induced by Heavy Ions** □ MAX PLANCK INSTITUT FÜR KERNPHYSIK, IUPAP (R. Bock) 3/69

16-18 **Electron Microprobe Analysis** □ ELECTRON PROBE ANALYSIS SOCIETY OF AMERICA □ Pasadena, Calif. (A. A. Chodos) 1/69

20-24 **Dielectric Materials, Measurements and Applications** □ INSTITUTION OF ELECTRICAL ENGINEERS, IEEE □ University of Lan-

NEW LISTING OF INSTITUTES, SHORT COURSES AND SCHOOLS

7-18 APRIL

X-Ray Diffraction, Methods and Applications □ GEORGIA INSTITUTE OF TECHNOLOGY □ Atlanta (Director, Dept. of Continuing Education, Georgia Institute of Technology, Atlanta, Ga. 30332)

Topics: Basics; crystal symmetry and simple structures, reciprocal lattice, powder method of x-ray diffraction and identification of chemical compounds. Topography; methods of x-ray diffraction topography. Special problems; individually selected experiments.

16-26 APRIL

Chemistry of Extended Defects in Non-Metallic Solids □ NATO, ARIZONA STATE U. □ Scottsdale, Ariz. (L. Eyring, Dept. of Chemistry, Arizona State U., Tempe, Ariz. 85281)

This advanced institute will study the principles and experimental observations underlying the chemistry of compounds that are grossly nonstoichiometric or defective.

28 APRIL-2 MAY

Laser Applications □ WASHINGTON U., MCDONNELL-DOUGLAS CORP. □ St. Louis, Mo. (G. L. Esterson, Box 1048, Washington U., St. Louis, Mo. 63130)

This short course will cover principles of gas, liquid and solid-state lasers, parameter measurements and beam control; applications in guidance, computers, communications and tracking, meteorology, diagnostics, medicine, holography and welding and machining.

2-13 JUNE

X-Ray Diffraction □ POLYTECHNIC INSTITUTE OF BROOKLYN □ New York (D. Cattell, Dept. of Physics, Polytechnic Inst. of Brooklyn, 333 Jay St., Brooklyn, N.Y. 11201)

This lecture-laboratory course includes preparation, properties and scattering of x rays, crystallography and optics, diffraction of crystals, symmetry and space groups and x-ray diffraction.

9-13 JUNE

X-Ray Spectrometry □ SUNY, ALBANY □ Albany (H. Chessin, SUNYA, Dept. of Physics, 1400 Washington Ave., Albany, N.Y. 12203)

This clinic will develop from the basic theory and techniques.

9-13 JUNE

Laser Interaction and Related Plasma

Phenomena □ RENSSELAER POLYTECHNIC INSTITUTE □ East Windsor Hill, Conn. (H. J. Schwarz, Rensselaer Polytechnic Institute, Hartford Graduate Center, East Windsor Hill, Conn. 06028)

16-20 JUNE

Mössbauer Spectroscopy □ CATHOLIC U. OF AMERICA □ Washington, D.C. (L. May, Dept. of Chemistry, Catholic U. of America, Washington, D.C. 20017)

This introductory course will cover theory, instrumentation and application to chemistry, metallurgy, nuclear and solid state physics and biology.

16-25 JUNE

Atomic Physics and Applications to Astrophysics □ BRANDEIS U., NSF, NATO □ Waltham, Mass. (Secretary, Physics Summer Institute, Brandeis U., Waltham, Mass. 02154)

16-27 JUNE

Physics of Quantum Electronics □ U. OF ARIZONA □ Tucson, Ariz. (S. F. Jacobs, Optical Sciences Center, U. of Arizona, Tucson, Ariz. 85721)

Topics: stimulated light scattering and self-trapping phenomena, photon statistics, ultra-short pulses, nonlinear optical amplification processes, Rayleigh scattering and light-beat spectroscopy, self-induced transparency and laser physics.

22-30 JUNE

Earthquake Displacement Fields and the Rotation of the Earth □ NATO ADVANCED STUDY INSTITUTE (A. E. Beck, Dept. of Geophysics, U. of Western Ontario, London, Canada) [4/30]

Topic: exploration of relation between deformation fields due to earthquake faulting, Chandler Wobble and rotation of the earth.

23 JUNE-3 JULY

Electronic Materials □ MIT □ Cambridge, Mass. (Director, Summer Session, Room E19-356, MIT, Cambridge, Mass. 02139)

An advanced undergraduate treatment of electronic materials including semiconducting, magnetic and laser. Techniques include Hall effect, field effect, electron and x-ray diffraction and scanning electron microscopy.

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caster (Conference Dept., IEE) 3/69

- 21-24 **Clustering Phenomena in Nuclei** ☐ MINISTRY OF SCIENTIFIC RESEARCH OF W. GERMANY, GERMAN PHYSICAL SOCIETY, IAEA ☐ Bochum, W. Germany (P. Kramer) 3/69
- 27-9 **High Energy Physics** ☐ INTERNATIONAL CENTER FOR ADVANCED STUDIES ☐ Chania, Crete (E. D. Haidemenakis) 3/69
- 28-1 **Conference on Physics and Chemistry of Fission** ☐ IAEA (IAEA) 11/68
- 28-1 • **Instrumentation Science** ☐ INSTRUMENT SOCIETY OF AMERICA ☐ Geneva, N.Y. (T. Tremellen, ISA, 530 William Penn Pl., Pittsburgh, Pa. 15219) 4/69
- 28-2 **Physics of Electron and Atomic Collisions** ☐ MIT ☐ Cambridge, Mass. (I. Amdur) [4/1] 2/69

AUGUST 1969

- 4-7 **Raman Spectroscopy** ☐ CARLETON U. ☐ Ottawa (J. A. Koningstein) 3/69
- 6-8 • **Applications of X-Ray Analysis** ☐ Denver (J. B. Newkirk, Metallurgy Div., Denver Research Institute, U. of Denver, Denver, Colo. 80210) [4/10] 4/69
- 10-23 **Fluctuation Phenomena** ☐ INTERNATIONAL CENTER FOR ADVANCED STUDIES ☐ Chania, Crete (E. D. Haidemenakis) 3/69
- 11-13 ☐ AMERICAN COMMITTEE FOR CRYSTAL GROWTH ☐ NBS, Washington, D.C. (C. S. Sahagian) [5/1] 2/69
- 11-14 **Symposium on Electron and Nuclear Magnetic Resonance** ☐ AUSTRALIAN ACADEMY OF SCIENCE ☐ Clayton, Victoria, Australia (Executive Secretary) 11/68
- 11-15 **Medical Physics** ☐ US NATIONAL COMMITTEE FOR MEDICAL PHYSICS, INTERNATIONAL ORGANIZATION FOR MEDICAL PHYSICS ☐ Boston (E. W. Webster) 8/68
- 11-15 **Radioactivity in Nuclear Spectroscopy** ☐ IUPAP, AEROSPACE RESEARCH LAB., US AIR FORCE, VANDERBILT U. (J. H. Hamilton) 3/69
- 12-14 ☐ AAS ☐ State University of New York at Albany (G. C. McVittie) 3/69
- 12-15 **Conference on Photoconductivity** ☐ OFFICE OF NAVAL RESEARCH ☐ Stanford U. (G. S. Picus) 12/68
- 13-15 **Optical Contamination in Space** ☐ OSA ROCKY MOUNTAIN SECTION ☐ Aspen, Colo. (J. A. Muscari) 2/69 ☐

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