calendar

MAY 1980

19–21 **Int Plasma Sci Conf** Madison, Wisc. *3/80*

19–22 **1st Int Conf on Lasers: Part 2** Beijing, People's Rep. China *1/80*

19–24 **2nd Int Conf on Intercalation Compounds of Graphite** Provincetown, Mass. *11/79*

20–21 **Wrkshp on Dielectric Systems for the III–V Compounds** San Diego, Cal. *11/79*

22–27 **AGU Spring Meeting** Toronto, Canada *7/79*

24–29 **2nd Chem Congress of North Amer** San Francisco, Cal. *3/80*

25–30 **28th Annual Conf on Mass Spectroscopy and Allied Topics** New York, N.Y. *1/80*

27–31 **Int Microwave Symp** Washington, D.C. *7/79*

28–29 **Topical Conf on Filamentary A15 Superconductors** Upton, N.Y. *3/80*

28–30 **Adv Seminar on Singular Perturbation and Asymptotics** Madison, Wisc. *11/79*

28–31 **Int Symp on the History of Particle Phys** Batavia, Ill. *3/80*

31–6 **1980 Spring Conf on Applied Optics** Oakland, Cal. *1/80*

JUNE 1980

1–2 **21st Meeting of the Acoustic Emission Working Group** Ithaca, N.Y. *3/80*

2–4 **5th Int Symp on Ultrasonic Imaging and Tissue Characterization** Gaithersburg, Maryland *3/80*

2–4 • **Wrkshp on Math Phys** Bad Honnef, Fed. Rep. Germany (*K. Dietz, Fachgruppe Physik/Astron., Univ., Wegelerstr. 10, 5300 Bonn, Fed. Rep. Germany*)

2–4 **Topical Meeting on Hologram Interferometry and Speckle Metrology** North Falmouth, Mass. *11/79*

2–4 **Conf on the Chem and Phys of Coal Utilization** Morgantown, W.Va. *1/80*

2–4 • **5th Johns Hopkins Wrkshp on Current Problems in High Energy Particle Theory** Bonn, Fed. Rep. Germany (*G. Domokos, Dept. of Physics, Johns Hopkins U., Baltimore, Md. 21218*)

Coding: date **subject** [Sponsor] Location (*Contact*) [abstract deadline] *Physics Today* reference • new listing □ new or revised information

Please Note: **follow-up listings give italicized reference date specifying Physics Today issue in which further information can be found.**

Abbreviations:

AAPM	American Association of Physicists in Medicine
AAPT	American Association of Physics Teachers
AAS	American Astronomical Society
ACA	American Crystallographic Association
APS	American Physical Society
ASA	Acoustical Society of America
AVS	American Vacuum Society
OSA	Optical Society of America
SPS	Society of Physics Students
S of R	Society of Rheology
AAAS	American Association for the Advancement of Science
AGU	American Geophysical Union
ANS	American Nuclear Society
ASTM	American Society for Testing and Materials
DOE	Department of Energy
DPG	Deutsche Physikalische Gesellschaft
EPS	European Physical Society
IAEA	International Atomic Energy Agency
IAU	International Astronomical Union
IEEE	Institute of Electrical and Electronics Engineers
IOP	The Institute of Physics
IUPAP	International Union of Pure and Applied Physics
NAS	National Academy of Sciences
NBS	National Bureau of Standards
NRC	Nuclear Regulatory Commission
NRL	Naval Research Laboratory
NSF	National Science Foundation
ONR	Office of Naval Research
SFP	Société Française de Physique
SIF	Società Italiana di Fisica

A calendar of physics-related meetings appears only in alternate (odd-numbered) months. Send information to: Calendar, PHYSICS TODAY, 335 East 45th Street, New York, N.Y. 10017, to arrive at least three months before the notice should appear.

2–6 • **11th GIFT Seminar on Theoretical Phys: Electroweak Interactions** Peniscola, Spain (*J. Sanchez-Guillen, Dept. de Fisica, Faculty of Sci., Zaragoza University, Zaragoza, Spain*)

2–6 **Symp on the Management of Alpha-Contaminated Wastes** Vienna, Austria *9/79*

2–6 **6th Int Conf on Vacuum Ultraviolet Radiation Phys** Charlottesville, Va. *11/79*

2–6 **Canadian/Amer Radio Sci Meeting** Quebec City, Canada *7/79*

2–14 **23rd COSPAR Plenary Meeting and Seminar** Budapest, Hungary *3/80*

3–5 **10th Int Conf on Effects of Radiation on Materials** Savannah, Ga. *11/79*

3–6 **Eur Symp on Few-Body Problems in Nuclear and Particle Phys** Sesimbra, Portugal *9/79*

3–6 **Int Conf on Boundary and Interior Layers—Computational and Asymptotic Methods** Dublin, Ireland *1/80*

4–6 **2nd Int Symp on Ultrasonic Materials Characterization** Gaithersburg, Maryland *3/80*

4–6 **Calorimetry and Thermal Analysis Conf** Barcelona, Spain *1/80*

5–9 **24th ETAN Conf (Acoustics)** Priština, Yugoslavia *3/80*

7–12 • **91st Annual Summer Conf on the Astronomical Soc of the Pacific** Tucson, Arizona (*Summer Meeting, ASP, 1290 24th Ave., San Francisco, Cal. 94122*)

8–13 **ANS Annual Meeting** Las Vegas, Nev. *7/79*

8–14 **Symp on Systems Far From Equilibrium** Sitges (Barcelona), Spain *1/80*

9–11 • **Int Wrkshp on High Resolution Nuclear Phys** Bad Honnef, Fed. Rep. Germany (*H. V. von Geramb, I. Inst. für Exp. Physik, Univ., Luruper Chausee 141, 2000, Hamburg 50, Fed. Rep. Germany*)

9–12 **2nd Int Conf on Particle Induced X-Ray Emission and Its Analytical Applications** Lund, Sweden *1/80*

9–12 **5th Eur Tandem Conf** Catania, Italy *3/80*

9–13 **Symp on Topical Questions in QCD** Copenhagen, Denmark *3/80*

9–13 **Nobel Symp: Nuclei at Very High Spins** Lund, Sweden *9/79*

10–14 **Ethics on Sci: Conf/Wrkshp on Pedagogical Issues in Teaching Ethics in College Sci Courses** Poughkeepsie, N.Y. *3/80*

11–13 **Int Symp on the Statistical Mechanics of Phase Transitions** Cleveland, Ohio *9/79*

11–13 **2nd Symp on Applied Surface Analysis** Dayton, Ohio *1/80*

11–14 **Symp: The Origin of Cosmic Rays** Bologna, Italy *3/80*

12–19 • **Seminar: Interacting Bose-Fermi Systems in Nuclei** Erice, Italy (*G. Preparata, CERN, CH-1211 Geneva 23 Switzerland*)

15–18 **AAS Gen Meeting** College Park, Md. *9/79*

16–18 • **1st Int Conf on the Sci and Tech of Zirconia** [Case Western Reserve U.; Amer. Ceramic Soc.] Cleveland, Ohio (*L. W. Hobbs, Dept. of Metallurgy and Materials Sci., Case Inst. Technology, Case Western Reserve U., Cleveland, Ohio 44106*)

16–18 **Int Conf on Communications** Seattle, Wash. *11/79*

16–18 **Phys Electronics Conf** Ithaca, N.Y. *9/79*

16–19 • **Congress of the Canadian Assn of Phys** Hamilton, Canada (*M. Jento, CAP, 151 Slater St., Suite 903, Ottawa Ontario, Canada K1P 5H3*)

16–20 • **Conf on Experimentation at LEP** Uppsala, Sweden (*T. Ekelöf, EP Div., CERN, CH-12211, Geneva 23, Switzerland*) [2/20/80]

16–20 • **7th Int Conf on MHD Electric Power Generation** Cambridge, Mass. (*J. F. Louis, MIT 31-254, Cambridge, Mass. 02139*) [1/7/80]

16–20 **35th Annual Symp on Molecular Spectroscopy** Columbus, Ohio *11/79*

18–19 • **Meeting on NMR Spectroscopy in Solids** London, UK (*Exec. Sec., The Royal Sec., 6 Carlton House Terrace London SW14 5AG, UK*)

18–20 **AAS Solar Phys and Dynamical Astronomy Div Meeting** College Park, Md. *1/80*

18–20 **Topical Meeting on Picosecond Phenomena** North Falmouth, Mass *11/79*

18–20 **Int Topical Conf on the Phys of MOS Insulators** Raleigh, N.C. *11/79*

18–20 • **15th Symp on Electromagnetic Windows** [Ga. Tech.] Atlanta, Georgia (*D. J. Kozakoff, Engineering Experiment, Station EML/RSD, Ga. Tech., Atlanta, Ga. 30332*)

19–20 • **5th Annual R&D Public Policy Colloquium** [AAAS] Washington, D.C. (*AAAS Office of Public Sector Programs, 1776 Massachusetts Ave., NW, Washington, D.C. 20036*)

21–25 **Int Lens Design Conf** Santa Cruz, Cal. *11/79*

22–27 **11th Int Symp on Multiparticle Dynamics** Bruges, Belgium *1/80*

23–25 • **Meeting on High-Resolution Infrared Applications and Developments** [NBS] Gaithersburg, Maryland (*Jon Hougen, Molecular Spectroscopy Div., Center for Thermodynamics and Molecular Sci., NBS, Washington, D.C. 20234*)

23–25 • **Conf on Heat Transfer and Fluid Mechanics** Los Angeles, Cal. (*S. M. Paul, U. Southern California, School of Engrng., University Park, Los Angeles, Cal. 90007*)

23–25 **11th Int Quantum Electronics Conf** Boston, Mass. *7/79*

23–25 **38th Annual Device Res Conf** Ithaca, N.Y. *1/80*

23–26 • **Conf on Resonant Behavior of Heavy Ion Systems** Aboard ship, Aegean Sea (*Tandem Accelerator Lab., NRC Demokritos, Agia Paraskevi Attikis, Greece*) [2/15/80]

23–26 • **Annual Meeting of the Norwegian Phys Soc** Tromsø, Norway (*O. Holt, I.M.R., U. Tromsø, PO Box 953, N-9001, Tromsø, Norway*) [5/1/80]

23–26 **Conf on Precision Electromagnetic Measurements** Braunschweig, Fed. Rep. Germany *7/79*

23–27 • **25th Annual Symp and Exhibition on the Art of Glassblowing** [Amer. Sci. Glassblowing Soc.] Albany, N.Y. (*Earl R. Nagle, Symp. Chairman, 18 Sky View Drive, Cohoes, N.Y. 12047*)

23–27 **9th Int Colloquium on Group Theoretic Methods in Phys** Cocoyoc, Mexico *9/79*

23–27 **Symp on Infrared Astronomy** Kailua-Kona, Hawaii *11/79*

23–28 • **Int Conf on Recasting of Science between the Two World Wars: Part 1** Florence, Italy (*E. Di Silvestro, Conf. Sec., Istituto di Fisica, Università di Roma, P. le Aldo Moro, 3 00185 Rome, Italy*) [3/31/80] **Note: continued on 6/30 in Rome**

23–28 • **Symp on Nucleon-Antinucleon Interactions** Bressanone, Italy (*M. Cresti, Università degli Studi di Padova, Istituto di Fisica Galileo Galilei, Via F. Marzolo 6, I-35100 Padua, Italy*)

23–28 **Int Meeting: Neutrino 80** Erice, Italy *7/79*

24–26 **Topical Meeting on Optical Interference Coatings** Santa Cruz, Cal. *11/79*

25–27 **Int Symp on Solar Power Satellites** Toulouse, France 1/80

25–27 **Wrkshp on Optical Fabrication and Testing** Santa Cruz, Cal. *11/79*

25–27 **AAPT Gen Meeting** Troy, N.Y. *9/79*

30–3 • **Int Conf on Recasting of Science between the Two World Wars: Part 2** Rome, Italy (*E. Di Silvestro, Conf. Sec., Istituto di Fisica, Università di Roma, P. le Aldo Moro, 3 00185 Rome, Italy*) [3/31/80]

30–4 • **8th Int Liquid Crystals Conf** Kyoto, Japan (*S. Kobayashi, Tokyo U. of Agriculture and Tech., Koganei, Tokyo 184, Japan*)

30–4 **Conf on Metallic Glasses: Sci and Tech** Budapest, Hungary *7/79*

30–4 **7th Eur Thermophys Properties Conf** Antwerp, Belgium *9/79*

JULY 1980

1–10 **8th Int Conf on Plasma Phys and Controlled Nuclear Fusion Res** Brussels, Belgium *9/79*

7–11 **5th Int Conf on Spectral Line Shapes** West Berlin, Fed. Rep. Germany *11/79*

7–11 **Int Conf on Liquid and Amorphous Metals** Grenoble, France *7/79*

7–11 **11th Int Conf on High Energy Accelerators** Geneva, Switzerland *1/80*

7–11 **12th Int Symp on Rarefied Gas Dynamics** Charlottesville, Va. *1/80*

9–16 **10th Int Congress on Acoustics** Sydney, Australia *9/79*

9–23 **Wrkshp: Non-Linear Equations and Dynamical Systems** Chania, Crete *1/80*

12–15 • **2nd Int Conf on Numerical Methods in Laminar and Turbulent Flows** Swansea, UK (*C. Taylor, Dept. of Civil Engrng., U. College, Singleton Park, Swansea SA2 8PP, UK*)

14–15 • **Joint Wrkshp: Electron Cyclotron Emission and Heating** Oxford, UK (*A. E. Costley, Electrical Sci. Div., Nat. Phys. Lab., Teddington, TW1 OLW UK*)

14–16 • **Int Wrkshp on Stellarators** Rottach-Egern, Fed. Rep. Germany (*G. Grieger, MPI für Plasmaphysik, D-8046, Garching, Fed. Rep. Germany*)

14–16 • **4th Int Conf on Baryon Resonances** Toronto, Canada (*Nathan Isgur, Dept. of Phys., U. Toronto, Toronto, Canada M5S 1A7*)

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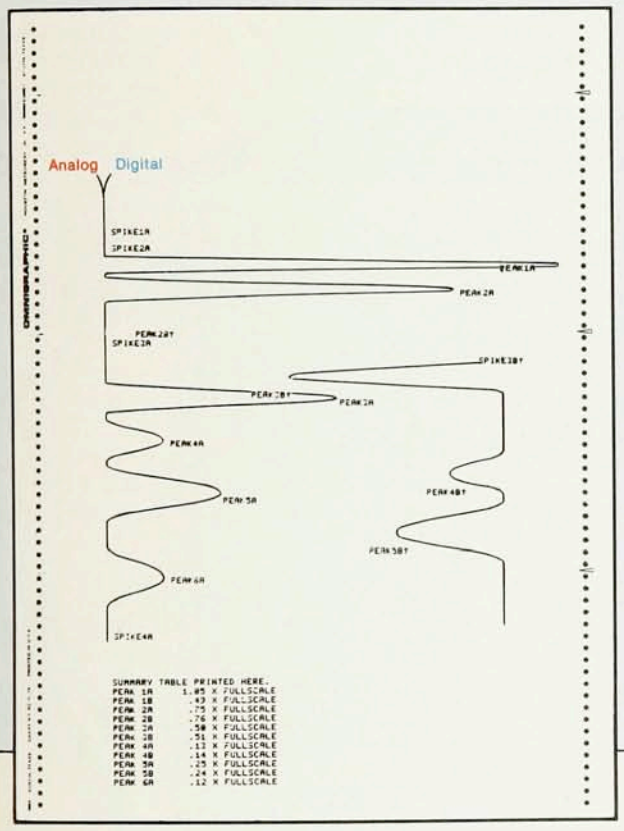

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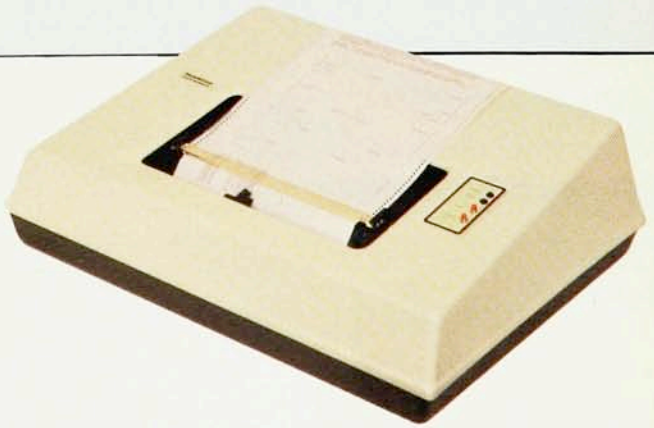

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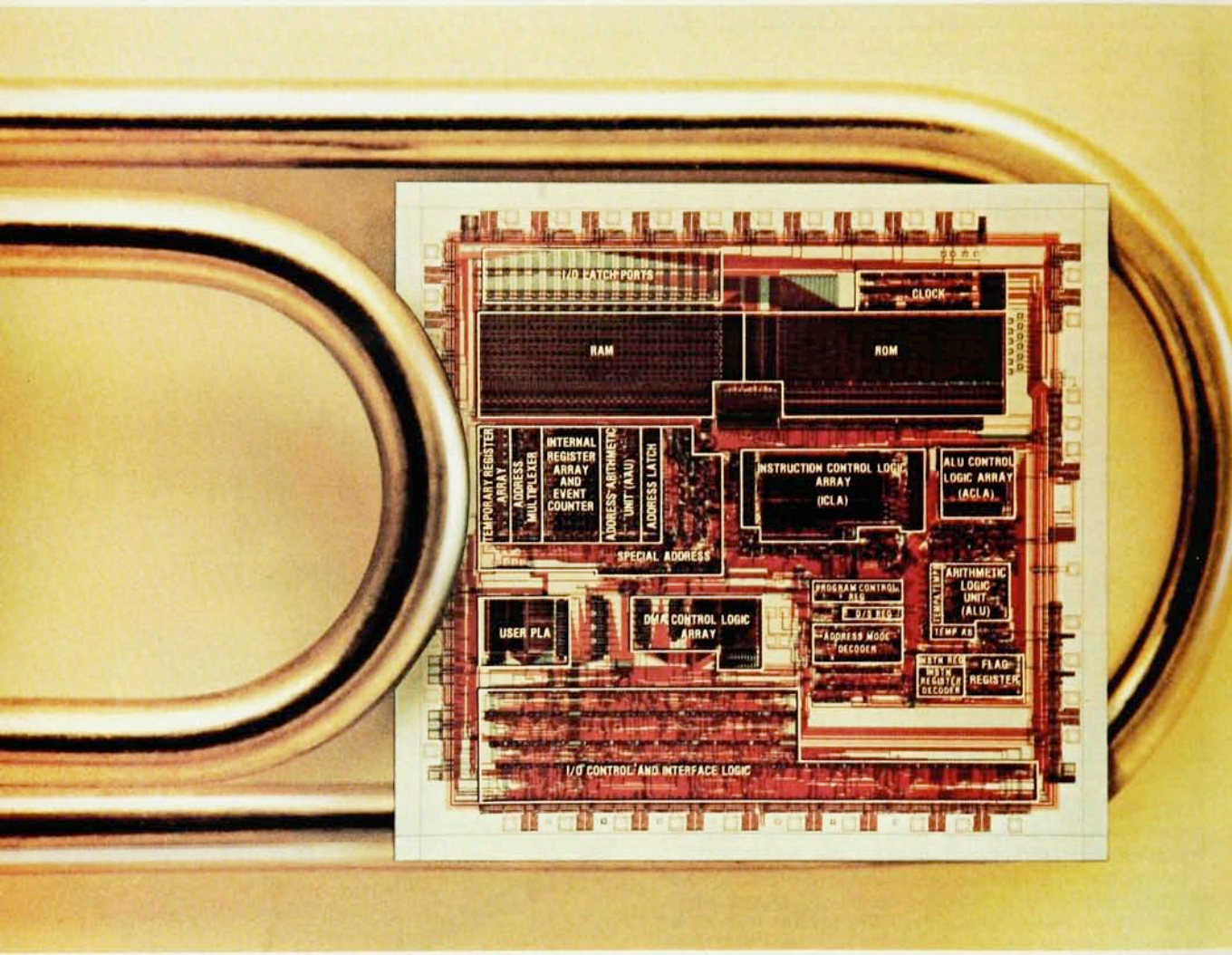
The one-chip computer: offspring of the transistor



The MAC-4 one-chip computer, developed for a variety of telecommunications applications, is compared to a standard-sized paper clip. The chip's numerous functional areas are labeled.

One of the transistor's latest descendants is the Bell System's 30,000-element MAC-4 "computer-on-a-chip." It's another in a long line of microelectronic developments that have come from Bell Laboratories.

The MAC-4 is so efficient that a program written on it takes 25 percent less storage space than that required by most other microcomputers. Its assembler language, C, also developed at Bell Labs, has features that make MAC-4 easier to program, debug and maintain. And the MAC-4 can handle anything from nibbles to bytes to words with its 4-, 8-, 12-, and 16-bit operations capacity.

Like other one-chip computers, the MAC-4 has sufficient memory to support its varied tasks—3000 nibbles of read-only memory and 200 nibbles of random access memory coupled to 34 input/output ports.

Fabricated with the latest CMOS technology, the MAC-4 needs little power. Thus it is well matched to a variety of telecommunications applications.

It started with the transistor

MAC-4 is just one current example of the many microelectronic devices to come from Bell Labs since we started the solid-state revolution with the invention of the transistor in 1947.

Over the past three decades, our advances in materials, processing, and devices have been vital to solid-state technology. These include:

- The Junction Transistor
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- Zone Refining
- Field-Effect Transistor
- Diffusion
- Solar Cell
- Oxide Masking
- Thermocompression Bonding
- Photolithography
- Epitaxial Film Process
- Magnetic Bubble Memory
- Charge-Coupled Device
- Semiconductor Heterostructure Laser Used in Lightwave Communications
- Electron-Beam Exposure System

Today and tomorrow

Today, we continue to make important contributions to solid-state technology. For example, we've developed a rugged 65,536-bit RAM that can tolerate processing faults. Corrections can be made on the chip itself, so we can get more usable chips out of each manufacturing batch—and thus lower unit costs.

In materials processing, we've developed a technique for precisely controlling the growth of successive atomic layers of single crystal materials. This "molecular beam epitaxy" process is finding increasing use within Bell Labs and elsewhere in the electronics industry. We've used it to fabricate a device that permits us to double the speed of electrons by channeling them into crystal layers where they meet less resistance.

Other advances, in X-ray lithography and new resist materials, for example, promise to help place more elements on microelectronic devices and thus enhance their ability to perform important tasks.

As the solid-state revolution continues, these and other developments from Bell Labs will play an important part in it. What's important to us is the promise these advances offer for new telecommunications products and services. Like the transistor, MAC-4 and its solid-state relatives will find more and more applications in the nationwide telecommunications network.

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From Science: Service

14–16 • **13th Fluid and Plasma Dynamics Conf/15th Thermophys Conf** Snowmass, Colorado (*Meetings Dept., Amer. Inst. of Aeronautics and Astronautics, 1290 Avenue of the Americas, New York, N.Y. 10019*)

14–19 **9th Int Conf on Gen Relativity and Gravity** Jena, German Dem. Rep. *7/79*

15–17 **Topical Meeting on Coherent Laser Radar for Atmospheric Sensing** [OSA] Aspen, Colorado (*OSA, 1816 Jefferson Pl., NW Washington, D.C. 20036*) [4/4/80]

15–18 **Nuclear and Space Radiation Effects Conf** Ithaca, N.Y. *1/80*

15–19 • **Int Cloud Phys Conf** Clermont Ferrand, France (*P. Melchior, Sec. Gen. IUGG, Observatoire Royal, Av. Circulaire, 3, B-1180 Brussels, Belgium*)

16–18 **Int Conf on the Frontiers of Glass Sci** Los Angeles, Cal. *11/79*

17–23 **20th Int Conf on High Energy Phys** Madison, Wisc. *9/79*

20–26 **Cornell Symp on Liquid and Solid ^{3}He** Ithaca, N.Y. *9/79*

21–25 • **Symp on Amorphous Silicon Phys and Applications** [IUPAP; UNESCO] Trieste, Italy (*Marc H. Brodsky, Chairman, IBM T. J. Watson Research Center, Yorktown Heights, N.Y. 10598*)

21–25 **5th Int Conf on Hyperfine Interactions** West Berlin, Fed. Rep. Germany *9/79*

22–25 **Symp on Fundamental Problems in the Theory of Stellar Evolution** Kyoto, Japan *9/79*

24–2 • **1980 Dumand Symp** Honolulu, Hawaii (*John Learned, Dir., 1980 Dumand Symp., Dept. of Phys., U Hawaii, 2505 Correa Rd., Honolulu, Hawaii 96822*)

27–31 **AAPM 22nd Annual Meeting** Minneapolis, Minn. *7/79*

28–1 • **5th Eur Regional Astronomy Meeting: Variability in Stars and Galaxies** [IAU] Liège, Belgium (*P. Ledoux, Institut d'Astrophysique, Université de Liège, Ave. de Cointe 5, B-4200 Ogrée, Belgium*)

28–1 • **Int Conf on Periodic Structures, Gratings, Moire Patterns and Diffraction Phenomena** [Soc. of Photo-Optical Instrumentation Engineers] San Diego, California (*Chang Chi, Hughes Aircraft Co., Bldg. 6, MS D/137, Centinela and Teale, Culver City, Cal. 90230*) [3/24/80]

28–1 **6th Eur Crystallographic Meeting** Barcelona, Spain *1/80*

28–1 • **Wrkshp on Lattice Gauge Theory and Related Subjects** Santa Barbara, Cal. (*J. Kogut, Inst. for Theor. Phys., U. California, Santa Barbara, Santa Barbara, Cal. 93106*)

23–8 • **1st Int Wrkshp on Light Absorption by Aerosol Particles** Ft. Collins, Colorado (*Herman E. Gerber, Phys. Branch, Naval Res. Lab., Washington, D.C. 20375*)

AUGUST 1980

4–7 **5th Int Conf on Zirconium in the Nuclear Industry** Boston, Mass. *7/79*

4–8 **Joint Meeting of the Electron Microscopy Soc of Amer and the Microbeam Analysis Soc** San Francisco, Cal. *11/79*

4–8 **Conf on Optics in Four Dimensions** Ensenada, Cal. *1/80*

4–8 **7th Int Conf on Atomic Phys** Cambridge, Mass. *9/79*

4–8 **Denver Conf on Applications of X-Ray Analysis** Denver, Colo. *1/80*

4–9 **Int Conf on Raman Spectroscopy** Ottawa, Canada *7/79*

4–9 **Symp on Atmospheric Ozone** Boulder, Colo. *7/79*

8–13 • **ANS Annual Meeting** Las Vegas, Nevada (*Joel Jobst, EG&G, 680 Sunset Rd., Las Vegas, Nev. 89101*)

10–14 **3rd Int EPR Symp** Denver, Colo. *1/80*

10–15 **Int Conf on Low Dimensional Synthetic Metals** Helsingør, Denmark *9/79*

11–13 • **Colloquium: Stellar Hydrodynamics** [IAU] Los Alamos, N.M. (*A. N. Cox, Los Alamos Sci. Lab., PO Box 1663, Los Alamos, N.M. 87545*)

11–14 **NMR Symp** Denver, Colo. *1/80*

11–15 • **2nd Int Topical Conf on Muon Spin Rotation** Vancouver, Canada (*J. H. Brewer, TRIUMF, U. British Columbia, Vancouver, B.C., V6T 2A3, Canada*)

11–15 **5th Int Symp on Polarization Phenomena in Nuclear Phys** Santa Fe, N.M. *11/79*

11–16 **Symp on Radiative Processes in the Atmosphere** Fort Collins, Colo. *7/79*

17–22 **ACA Annual Meeting** Calgary, Canada *9/79*

17–22 • **Int Symp on Polymer Compatibility and Incompatibility: Principles and Practice** [Michigan Molecular Inst.] Midland, Michigan (*Symp. Sec., MMI, 1910 West St., Andrews Rd., Midland, Michigan 48640*) [5/15/80]

17–23 **9th Int Conf on the Few-Body Problem** Eugene, Ore. *9/79*

17–23 **14th Int Conf on Thermodynamics and Statistical Mechanics** Edmonton, Alberta *9/79*

18–22 **Micro 80** Brighton, UK *11/79*

18–22 **Phys of Transition Metals** Leeds, UK *9/79*

18–22 **Symp on Millimeter Wave Tech, with Emphasis on Radio Astronomy Applications** Grenoble, France *1/80*

18–22 • **35th Annual Calorimetry Conf** Eufaula, Alabama (*J. T. S. Andrews, Chairman-Elect, Liquid Crystal Inst., Kent State U., Kent, Ohio 44242*)

20–22 **Symp on Photochem in Large Molecules and Solids** San Jose, Cal. *1/80*

20–31 **UN Conf on Sci and Tech for Development** Vienna, Austria *1/80*

24–29 **X-ray Processes and Inner-Shell Ionization** Strathclyde, UK *9/79*

24–30 **Int Conf on Nuclear Phys** Berkeley, Cal. *1/80*

24–30 **Int Conf on Post-Graduate Education of Phys** Prague, Czechoslovakia *1/80*

24–30 **7th Eur Congress on Electron Microscopy** The Hague, The Netherlands *9/79*

25–27 • **4th Int Conf on Photon Correlation Techniques in Fluid Mechanics** Stanford, Cal. (*G. Chapman, MS 227-4, NASA-Ames Res. Ctr., Moffett Field, Cal. 94035*)

25–29 **12th Australian Spectroscopy Conf** Sydney, Australia *1/80*

25–29 **4th Nat Congress of the Australian Inst of Phys** Melbourne, Australia *7/79*

25–29 **Int Conf on Phys in One Dimension** Fribourg, Switzerland *9/79*

25–30 **Joint ISMAR-AMPERE Conf on Magnetic Resonance** Delft, The Netherlands *9/79*

25–30 • **10th Symp on Phys of Ionized Gases** Dubrovnik, Yugoslavia (*B. Cobic, Boris Kidrich Inst. of Nuclear Sci., Vinca, PO Box 522, YU-11 001 Beograd, Yugoslavia*)

26–29 • **6th Int Conf on Thermodynamics** Merseburg, German Dem. Rep. (*M. T. Rätzsch, Technische Hochschule "Carl Schorlemmer," Leuna-Merseburg, Geusaer Str., DDR-42 Merseburg 6, German Dem. Rep.*) [1/1/80]

26–29 • **Symp on Pulsars** [IAU] Bonn, Fed. Rep. Germany (*R. Wielebinski, Max-Planck-Institute für Radioastronomie Auf dem Hügel 69, D-5300 Bonn, Fed. Rep. Germany*)

26–29 **Int URSI Symp on Electromagnetic Waves** Munich, Fed. Rep. Germany *1/80*

28–29 **4th Int Conf on Ternary and Multinary Compounds** Tokyo, Japan *9/79*

SEPTEMBER 1980

1–3 • **6th Int Conf on High Voltage Electron Microscopy** Antwerp, Belgium (*G. Van Tendeloo, Centrum voor Hoogspanningselektronenmikroskopie, RUCA, Groenenborgerlaan 171, B-2020 Antwerp, Belgium*)

1–3 • **Chem, Phys and Tech of Organic Substances under High Pressure** Amsterdam, The Netherlands (*H. Steinberg, Lab. for Organic Chem., U. Amsterdam, Nieuwe, Achtergracht 129, 1018 WS Amsterdam, The Netherlands*) [6/1/80]

1–5 • **Colloquium: Pierre Curie** [Ecole Supérieure de Physique et de Chemie Industrielles; U. Pierre et Marie Curie] Paris, France (*J. Lewiner, Sec. Colloque Pierre Curie, 10, rue Vauquelin, 75005 Paris, France*) [2/15/80]

1–5 • **15th Int Conf on the Phys of Semiconductors** [IUPAP] Kyoto, Japan (*Hiroshi Kamimura, Dept. of Phys., Fac. of Sci., U. Tokyo, Bunkyo-ku, Tokyo 113 Japan*) [3/15/80]

1–5 • **Working Seminar: Models of Fundamental Interactions** [Dublin Inst. for Advanced Studies] Dublin, Ireland (*Dir., School of Theoretical Phys. (Working Seminar II 1980), Dublin Inst. for Advanced Studies, 10 Burlington Rd., Dublin 4, Ireland*) [5/23/80]

1–5 • **Int Symp on Medical Radionuclide Imaging** Heidelberg, Fed. Rep. Germany (*IAEA, PO Box 100, Vienna Int. Center, A-1400 Vienna, Austria*)

1–6 **8th Int Congress on Rheology** Naples, Italy *9/79*

1–6 **9th Int Symp on the Reactivity of Solids** Cracow, Poland *9/79*

1–6 **Int Conf on Education for Phys Teaching** Trieste, Italy *1/80*

1–6 • **10th Int Electromagnetic Isotope Separator Conf** Zinal, Switzerland (*D. A. Caton, Sci. Conf. Sec., CERN, CH-1221, Geneva 23, Switzerland*) [6/15/80]

1–13 • **Phys Thought in 1980: Sci and Humanism in Our Times** Village de Peyresq, France (*Foundation Louis de Broglie, 1, rue Montgolfier-75003 Paris, France*)

2–5 **12th Annual Conf of the Eur Group for Atomic Spectroscopy** Pisa, Italy *9/79*

SHORT COURSES AND SCHOOLS

Acousto-optics and Its Applications
26–30 May Wiezyca, Poland (*A. Sliwinski Inst. of Phys. U. Gdansk, ul. Witz Stwosza 57, PL-80-952 Gdansk, Poland*)

Rigorous Atomic and Molecular Phys
1–15 June Erice, Italy (*G. Velo, Istituto de Fisica dell'Università, Via Imerio 46, 1-40126 Bologna, Italy*)

Device Impact of New Microfabrication Tech
2–6 June Heverlee Belgium (*R. De Keersmaecker, ESAT Lab., Kardinaal Mercierlaan 94, 3030 Haverlee, Belgium*)

CERN School of Phys
8–21 June Malente, Fed. Rep. Germany (*D. A. Caton, Sci. Conf. Sec., CERN, CH-1211 Geneva 23, Switzerland*)

Interacting Bose-Fermi Systems in Nuclei
12–20 June Erice, Italy (*G. Preparata, CERN, CH-1211 Geneva 23 Switzerland*)

Phys and Contemporary Needs
14 June–2 July [Pakistan Atomic Energy Comm.; Int. Centre for Theoretical Phys.] Nathiagali, Pakistan (*Sci. Sec., 5th Summer College, Pakistan Atomic Energy Comm., PO Box 1114, Islamabad, Pakistan*)

Fundamentals of Infrared Tech
16–20 June [U. Michigan] Ann Arbor, Michigan (*Engrng. Summer Conf., 800 Chrysler Center, North Campus, U. Michigan, Ann Arbor, Mich. 48109*)

Adhesion Principles and Practice for Coatings and Polymer Scientists
16–20 June [Kent State U.] Kent, Ohio (*Carl J. Knauss, Rheology and Coatings Lab., Dept. of Chem., Kent State U., Kent, Ohio 44242*)

Deposition Tech and Applications
16–20 June [UCLA] Los Angeles, Cal. (*Continuing Educ. in Engrng. and Math., 6266 Boelter Hall, UCLA, PO Box 24901, Los Angeles, Cal. 90024*)

Structure Mechanical Property Measurements in Polymer Solids Rheological Measurements in Polymer Liquids (concurrently)
17–20 June [U. Minnesota] Minneapolis, Minn. (*John S. Vollum, Program Dir., 222 Nolte Center, 312 Pillsbury Dr. SE, U. Minnesota, Minneapolis, Minn. 55455*)

Metal Hydrides
17–27 June [NATO Adv. Study Inst.] Rhodes, Greece (*G. Bambakidis, Phys. Dept., Wright State U., Dayton, Ohio 45435*)

Advanced Infrared Tech
23–27 June [U. Michigan] Ann Arbor, Michigan (*Engrng. Summer Conf., 800 Chrysler Center, North Campus, U. Michigan, Ann Arbor, Mich. 48109*)

Applied Rheology for Industrial Chemists
23–27 June [Kent State U.] Kent, Ohio (*Carl J. Knauss, Rheology and Coatings Lab., Dept. of Chem., Kent State U., Kent, Ohio 44242*)

Design and Analysis of Sci Experiments
23–28 June [MIT] Cambridge, Massachusetts (*Dir. of the Summer Session, Rm. E19-356, MIT, Cambridge, Mass. 02139*)

Fundamental Problems in Statistical Mechanics
23 June–5 July Enschede, The Netherlands (*Int. Education Div., NUFFIC, PO Box 90734, 2509 LS The Hague, The Netherlands*)

Spectroscopic Interpretation
30 June–11 July Manchester, UK (*Registrar, UMIST, PO Box 88, Manchester M60 1QD, UK*)

Photoreceptors
1–12 July [Int. School of Biophys.] Erice, Italy (*A. Borsellino, Istituto di Science Fisica, Università di Genova, Viale Bendetto XV, 51-16132 Genoa, Italy*)

Phase Transitions and Applications of Ferrolectrics
1–15 July [Int. School of Phys. of Condensed Matter] Erice, Italy (*M. Balkanski, Laboratoire de Physique des Solides, Faculté des Sciences, 9 quai St. Bernard, Paris 5e, France*)

Techniques and Concepts of High Energy Phys
2–13 July St. Croix, Virgin Islands (*T. Ferbel, Fermilab, ASI St. Croix, M.S. No. 888, PO Box 500, Batavia, Ill. 60510*)

Fiber Optic Communication Systems
7–11 July Santa Barbara, California (*Dept. of Sci. and Management, U. California Extension, Santa Barbara, Cal. 93106*)

Optical System Design
7–11 July [U. Rochester] Rochester, N.Y. (*The Inst. of Optics, U. Rochester, Rochester, N.Y. 14607*)

Contemporary Optics
7–18 July [U. Rochester] Rochester, N.Y. (*The Inst. of Optics, U. Rochester, Rochester, N.Y. 14627*)

Complex Analysis
7–31 July Erice, Italy (*Int Centre for Theoretical Phys., PO Box 586, 1-34100 Trieste, Italy*)

Digital and Optical Image Processing
14–18 July [U. Rochester] Rochester, N.Y. (*The Inst. of Optics, U. Rochester, Rochester, N.Y. 14607*)

Lasers and Optics for Applications
14–25 July [MIT] Cambridge, Mass. (*Shaoul Ezekiel, MIT, Res. Lab. of Electronics, Cambridge, Mass. 02139*)

Processing Materials with Lasers
17–18 July [USC] Los Angeles, Cal. (*Continuing Engrng. Educ., USC, Powell Hall 216, University Park, Los Angeles, Cal. 90007*)

Modern Permanent Magnet Materials
21–25 July [USC] Dayton, Ohio (*Continuing Educ., USC, Powell Hall 216, University Park, Los Angeles, Cal. 90007*)

Applied Molecular Spectroscopy
21–25 July Tempe, Arizona (*Jacob Fuchs, Dir., Applied Molecular Spectroscopy, Dept. of Chem., Arizona State U., Tempe, Arizona 85281*)

Detection of Infrared Radiation
21–25 July [U. California, Santa Barbara] Santa Barbara, California (*Dept. of Sci. and Management, U. California Extension, Santa Barbara, Cal. 93106*)

Radionuclides in Research
21 July–1 August [Oak Ridge Associated U.] Oak Ridge, Tennessee (*Prof. Training Programs, Oak Ridge Associated U., PO Box 117, Oak Ridge, Tenn. 37830*)

Current Trends in Particle Phys
27 July–8 August [Arctic School of Phys. 1980] Akäslompolo, Finland (*Likka Liede, U. Helsinki, Dept. of Theor. Phys. Siltavuorenpenger 20, SF 00170 Helsinki 17 Finland*)

Food Rheology: Principles and Practice
28 July–1 August [MIT] Cambridge, Mass. (*Dir. Summer Session, Rm E19-356, MIT, Cambridge, Mass. 02139*)

SLAC Summer Inst
28 July–8 August Stanford, California (*Anne Mosher, SLAC Summer Inst., PO Box 4349, Stanford, Cal. 94305*)

Phys of Defects
28 July–30 August Les Houches, France (*Ecole d'Eté de Physique Théorique, F-74310, Les Houches, France*)

Subnuclear Phys
31 July–11 August Erice, Italy (*Int. School of Subnuclear Phys., A. Zichichi, CERN, CH-1211 Geneva 23, Switzerland*)

Scattering Techniques Applied to Supramolecular and Non-Equilibrium Systems
3–15 August [NATO Adv. Study Inst.] Wellesley, Mass. (*Sow-Hsin Chen, Dept. of Nuclear Engnrg., Rm. 25-209, MIT, Cambridge, Mass. 02139*)

Modern Industrial Spectroscopy
4–15 August [Arizona State U.] Tempe, Arizona (*Jacob Fuchs, Dir., Modern Industrial Spectroscopy, Dept. of Chem., Arizona State U., Tempe, Arizona 85281*)

Phys and Tech of Free Electron Lasers
17–29 August [Int. School of Quantum Electronics] Erice, Italy (*A. N. Chester, Gruppo Naz. Elettronica Quantistica e Plasmi del CNR, P. le Vincenzo Tecchio, 80, 1-80125 Naples, Italy*)

Nonlinear Phenomena in Phys and Biol
12–29 August [NATO Adv. Study Inst.] Banff, Canada (*R. H. Enns, Dept. of Phys., Simon Fraser U., Burnaby, B.C. Canada V5A 1S6*)

Superconducting Materials: Sci and Tech
20–30 August [NATO Adv. Study Inst.] Portugal (*Simon Foner, Francis Bitter Nat. Magnet Lab., MIT, Bldg NW 14-3122, Cambridge, Mass. 02139*)

Critical Phenomena in Heavy Ion Collisions
25 August–10 September Poiana Brasov, Romania (*Org. Comm., Central Inst. of Phys., Bucharest, Magurele, MG-6, Romania*)

Accelerated Particles in Nature
30 August–13 September [Int. School of Cosmic Ray Phys.] Erice, Italy (*M. M. Shapiro, Lab. for Cosmic Ray Phys., Naval Res. Lab., Washington, D.C. 20375*)

2–6 • **Eur Study Conf on Low Energy Molecular Collisions** Oxford, UK (*M. S. Child, Theoretical Chem. Dept., U. Oxford, 1 South Parks Rd., Oxford OX1 3TG, UK*)

3–6 • **Joint AAS HEAD-APS Cosmic Phys Div Meeting** Minneapolis, Minnesota (*R. Novick, Dept. of Phys., Columbia U., 538 W. 120th St., New York, N.Y. 10027*)

3–12 **Grenoble-Varenna Int Symp on Heating in Toroidal Plasmas** Como, Italy *9/79*

3–13 • **3rd Adriatic Meeting on Particle Phys: Recent Developments in Strong Interaction Phys** Dubrovnik, Yugoslavia (*I. Andric, Ruder Boskovic Inst., PO Box 1016, YU-41001 Zagreb, Yugoslavia*)

4–5 • **J. M. Robertson Symp** [Chem. Soc.; IOP] Glasgow, UK (*G. A. Sim, Chem. Dept., U. Glasgow, Glasgow G12 8QQ UK*)

6–11 • **2nd Japanese-Soviet Symp on Ferroelectricity** Kyoto, Japan (*J. Kobayashi, Chmn., JSSF-2, Dept. of Applied Phys., Waseda U., 1-4-3 Okubo, Shinjuku, Tokyo, Japan*)

7–12 **7th Annual Meeting of the Fed of Analytical Chem and Spectroscopy Soc** Philadelphia, Pa. *1/80*

7–13 • **Int Symp on Macromolecules** [IUPAC] Florence, Italy (*F. Ciardelli, Istituto Chimica Organica Industriale, Via Risorgimento 35, I-56100 Pisa, Italy*)

7–13 • **Theory of Magnetic Alloys** Blazejewko, Poland (*J. Morkowski, Inst. of Molecular Phys., Polish Acad. of Sci., Smoluchowskiego 17/19 PL-60-179, Poznan, Poland*)

8–11 • **6th Int Conf on Gas Discharges and their Applications** Edinburgh, UK (*IEE Conf. Dept., Saudy Pl., London WC2R OBL, UK*) [11/26/79]

8–11 **Conf on Phys of Dielectric Solids** Canterbury, UK *11/79*

8–12 **2nd Int Meeting on Small Particles and Inorganic Clusters** Lausanne, Switzerland *9/79*

8–12 • **2nd IAU Colloquium on Reference Coordinate Systems for Earth Dymamics** Warsaw, Poland (*E. M. Gaposchkin, Smithsonian Astrophys. Observ., 60 Garden St., Cambridge, Mass. 02138*)

8–12 **3rd Int Symp on Gas Flow and Chemical Lasers** Marseille, France *1/80*

8–12 • **7th Symp on Microdosimetry** Oxford, UK (*Sec., 7th Microdosimetry Symp., DG-XII, 200 rue de la Loi, B-1049 Brussels, Belgium*) [1/31/80]

9–12 • **Int Symp on Flow Visualization** Bochum, Fed. Rep. Germany *11/79*

9–12 **Europhys Conf on Computing in High Energy and Nuclear Phys** Bologna, Italy *9/79*

9–12 • **9th Symp IMEKO Tech Comm on Photo-Detectors** Budapest, Hungary (*J. Solt, IMEKO, PO Box 457, H-1371, Budapest, Hungary*) [12/31/79]

10–12 **Optics '80** Manchester, UK *11/79*

10–12 • **Int Conf on Vibrations at Surfaces** [Inst. for Research in Interface Sci.] Namur, Belgium (*Relations Publiques, Conf. Vibrations at Surfaces, Facultés Universitaires, Rue de Bruxelles, 53, B-5000, Namur Belgium*) [6/1/80]

10–19 • **Czechoslovak-Polish Conf on Optics** Krpacova, Czechoslovakia (*Z. Chorvatova, Dept. of Exp. Phys., Mlynska dolina, CS 816 31 Bratislava, Czechoslovakia*)

11–21 **High Energy Phys** Maria Laach, Fed. Rep. Germany *9/79*

14–17 • **1980 Advances in Reactor Phys & Shielding** Sun Valley, Idaho (*J. C. Haire, EG&G Idaho, Inc., PO Box 1625, Idaho Falls, Idaho 83401*)

15–19 **3rd Int Meeting on Solid Electrolytes** Tokyo, Japan *11/79*

15–19 **10th Eur Solid State Device Res Conf/5th Symp on Solid State Device Tech** York, UK *9/79*

15–19 **11th Symp on Fusion Tech** Oxford, UK *1/80*

15–19 • **Effects of Mass Loss on Stellar Evolution** Trieste, Italy (*R. Stalio, Osservatorio Astronomico, I-34131 Trieste, Italy*)

15–19 • **5th Nat Soviet Conf on Neutron Phys** Kiev, USSR (*M. V. Pasechnik, Inst. for Nuclear Res., Prospekt Nauki 119, Kiev-28, USSR 252 028*)

16–19 **9th Int Symp on Discharges and Electrical Insulation in Vacuum** Eindhoven, The Netherlands *1/80*

16–19 • **14th ESLAB Symp: Phys of Solar Variations** [Eur. Space Agency; EPS] Scheveningen, The Netherlands (*V. Domingo, Space Sci. Dept., ESTEC, Postbus 299, 2200 AG Noordwijk, The Netherlands*) [5/15/80]

22–26 • **Hadron Structure 80: QCD—Theory and Experiment** Smolenice, Czechoslovakia (*A. Nogova, Inst. of Phys., Slov. Acad. Sci., CS-899 30 Bratislava, Czechoslovakia*) [9/22/80]

22–26 **8th Int Vacuum Congress/4th Int Conf on Solid Surfaces/3rd Eur Conf on Surface Science/5th Nat Colloquium on Physics and Chem of Solid Surfaces** Cannes, France *9/79*

22–26 • **3rd Symp on Elementary Processes and Chem Reactions in Low Temperature Plasma** Krpacova, Czechoslovakia (*P. Lukac, Dept. of Exp. Phys., Mlynska dolina F2, CS816 31 Bratislava, Czechoslovakia*) [5/20/80]

23–25 • **1980 Eur Conf on Optical Systems and Applications** Utrecht, The Netherlands (*Royal Netherlands Industries Fair, Special Events Dept., PO Box 8500, NL-3503 RM Utrecht, The Netherlands*) [3/15/80]

23–26 • **Conf on Nuclear Phys Method in Materials Res** Darmstadt, Fed. Rep. Germany (*K. Bethge, Institut für Kernphysik, Johann-Wolfgang-Goethe-Universität, August-Euler-Str. 6, D-6 Frankfurt-am-Main 90, Fed. Rep. Germany*)

23–26 • **Wrkshp on the Phys of Electroluminescence** Liège, Belgium (*J. P. Vigneron, Université de Liège, Institute de Physique, Bât. B5, B-4000 Sart Tilman/Liège 1 Belgium*)

24–26 • **Int Conf on Ternary Superconductors** Lake Geneva, Wisc. (*G. K. Shenoy, Bldg. 223, Argonne Nat. Lab., Argonne, Ill. 60439*)

25–1 • **Int Symp: High Energy Phys with Polarized Beams and Polarized Targets** Lausanne, Switzerland (*C. Joseph, Institut de Physique Nucleaire, Faculté des Sciences Physiques, Université de Lausanne, Dorigny, CH-1015 Lausanne, Switzerland*) [7/31/80]

29–2 **Applied Superconductivity Conf** Santa Fe, N.M. *9/79*

30–1 • **12th Annual Symp on Optical Materials for High Power Lasers** [NBS; ONR; Def. Adv. Res. Projects Agency; Amer. Soc. of Testing and Materials] Boulder, Colorado (*Arthur H. Guenther, Chief Scientist, Air Force Weapons Lab., Kirtland AFB, New Mexico 87117*) [8/15/80]

30–2 • **DESY Wrkshp on Flavor Dynamics** Hamburg, Fed. Rep. Germany (*B. Stech, Inst. f. Theor. Physik, Universitat Heidelberg, Philosophenweg 16, D-6900 Heidelburg, Fed. Rep. Germany*)

30–2 • **Fuel Cycles for the 80's** Gatlinburg, Tenn. (*Benjamin Vondra, ORNL-PO Box X, Bldg. 7601, Oak Ridge, Tenn. 37830*)

30–3 **3rd Int Conf on Ferrites** Kyoto, Japan

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1–2 **Symp on Fiber Microscopy and Spectroscopy** Rockville, Md. *9/79*

5–9 **Symp on Interatomic Potentials and Computer Simulation of Defects in Metals** Pittsburgh, Pa. *1/80*

5–10 • **Meeting of the Electrochemical Soc** Hollywood, Florida (*S. Mahajan, Publicity Chairperson, Electronics Div., Electrochemical Soc. Bell Labs., 600 Mountain Ave., Murray Hill, New Jersey 07974*) [5/1/80]

6–9 • **10th Int Laser Radar Conf** [Amer. Meteorological Soc.; U. Maryland; NASA] Silver Spring, Maryland (*T. D. Wilkerson, Inst. for Phys. Sci. and Tech., U. Maryland, College Park, Maryland 20743*) [6/13/80]

6–10 **5th Int Conf on Infrared and Millimeter Waves** Würzberg, Fed. Rep. Germany *9/79*

6–10 • **Wrkshp on Acceleration of Particles by Shock Waves throughout Interplanetary and Interstellar Space** Lindau/Harz, Fed. Rep. Germany (*A. K. Richter, MPI f. Aeronomie, D-3411 Kattenburg, Lindau 3, Fed. Rep. Germany*)

6–10 • **5th Int Conf on Small-Angle Scattering** West Berlin, Fed. Rep. Germany (*R. Hosemann, Fritz-Haber-Institut der MPG, Teilinstitut f. Strukturforschung, Faradayweg 4–6, D-1000 Berlin 33, Fed. Rep. Germany*)

7–9 **Electromagnetic Compatibility Symp** Baltimore, Md. *9/79*

7–10 • **33rd Annual Gaseous Electronics Conf** Norman, Oklahoma (*Robert St. John, Phys. Dept., U. Oklahoma, Norman, Oklahoma, 73019*)

9–11 **Meeting of APS Nuclear Phys Div** Minneapolis, Minn. *9/79* □

1980 Gordon Research Conferences

The 1980 Gordon Research Conferences will be held from 9 June to 22 August in New Hampshire and California. The conferences were established to stimulate research in universities, research foundations and industrial laboratories. This purpose is achieved by an informal type of meeting consisting of scheduled speakers and discussion groups.

Complete information about the conferences is available from A. M. Cruickshank, Gordon Research Conferences, Pastore Chemical Laboratory, University of Rhode Island, Kingston, R.I. 02881

Some physics-related conferences include:

Nuclear Chemistry, 16–20 June; **Catalysis,** 23–27 June; **Chemistry and Physics of Microstructure Fabrication,** 23–27 June; **Fiber Science,** 30 June–4 July; **Polymers,** 7–11 July; **Elastomers,** 14–18 July; **Corrosion,** 21–25 July at Colby-Sawyer College, New London, N.H.

Lasers in Medicine and Biology, 23–27 June; **Physics and Chemistry at High Pressure,** June 30–July 4; **Chemistry at Interfaces,** 21–25 July; **Solid State Studies in Ceramics,** 4–8 August at Kimball Union Academy, Meridian, N.H.

Physico-Chemical Aspects of Visual Transduction Processes, 23–27 June; **Nuclear Structure Physics,** 7–11 July; **Metal-Insulator-Semiconductor Systems,** 21–25 July; **Magnetic Resonance in Medicine and Biology,** 11–15 August; **Photonuclear Reactions,** 18–22 August at Tilton School, Tilton, N.H.

Physical Metallurgy, 7–11 July; **Particle-Solid Interactions,** 21–25 July; **Fluids in Permeable Media: Mathematics of Modeling and Simulation,** 28 July–1 August; **Plasma Chemistry,** 18–22 August at Proctor Academy, Andover, N.H.

Chemistry and Physics of Photoconductivity and Related Phenomena, 9–13 June; **Physics and Physical Chemistry of Biopolymers,** 30 June–4 July; **Crystal Growth,** 14–18 July; **Dielectric Phenomena,** 28 July–1 August at Holderness School, Plymouth, N.H.

Physical Organic Chemistry, 9–13 June; **Radical Ions,** 16–20 June; **Radiation Chemistry,** 23–27 June; **Solid State Chemistry,** 30 June–4 July; **Electron Spectroscopy,** 14–18 July; **Atomic and Molecular Interactions,** 21–25 July; **Electron-Donor-Acceptor Interactions,** 11–15 August, **Vibrational Spectroscopy,** 18–22 August at Brewster Academy, Wolfeboro, N.H.

Electron Distribution and Chemical Bonding, 30 June–July 4; **Dynamics of Quantum Solids and Fluids,** 14–18 July; **Scientific Information,** 14–18 July; **Chemistry and Physics of Cellular Materials,** 4–8 August; **High Temperature Chemistry,** 4–8 August, **Chemistry and Physics of Coatings and Films,** 11–15 August at Plymouth State College, Plymouth, N.H.

Polymer Physics, 23–27 June; **Analytical Chemistry,** 11–15 August; **Science of Adhesion,** 18–22 August at New Hampton School, New Hampshire, N.H.

Holography and Optical Information Processing, 16–20 June; **Plasma Physics,** 16–20 June at Miramar Hotel, Santa Barbara, California.