

CALENDAR

DECEMBER 1993

5-8 Electron Devices Washington, DC
Contact: M. Widerkehr, Ste 610, 1545
18th St NW, Washington, DC 20036

6-9 Conf on Cold Fusion Lahaina, HI
Contact: Linda Nelson, Electric Power
Rsch Inst, PO Box 10412, Palo Alto, CA
94303

6-10 Lasers '93 Lake Tahoe, NV Con-
tact: Soc for Opt and Quantum Electron-
ics, PO Box 245, McLean, VA 22101

6-10 Optics, Lasers and Spectroscopy
Melbourne, Australia Contact: Helen
Frangos, Conf Management, Univ of Mel-
bourne, Vic 3052, Australia

**6-10 Application of Vuv and Soft X-Ray
Spectroscopies to Solid Surfaces and
Molecules** Campinas, Brazil Contact:
LNLS Wksp, CP 6192, Campinas 13081-
970, SP, Brazil

6-10 AGU Fall Mtg San Francisco, CA
Contact: AGU

**12-17 Cornelius Lanczos Centenary
Conf** Raleigh, NC Contact: Vicki Grant-
ham, Admin Secretary, North Carolina
State Univ, Box 8202, Raleigh, NC
27695-8202

**13-15 QEXAFS and Dispersive EXAFS:
Magnetic Dichroism and Time-Resolved
Applications** Campinas, Brazil Contact:
LNLS Wksp, CP 6192, Campinas 13081-
970, SP, Brazil

JANUARY 1994

3-8 AAPT Winter Mtg San Diego, CA
Contact: AAPT

4-7 Nuclear Phys at Oaxtepec Oax-
tepec, Mexico Contact: A. Mondragón,

Inst de Fisica, UNAM, AP 20-364, 01000
Mexico DF, Mexico [E-mail: amondra@
ifunam.ifisicacu.unam.mx]

9-13 Organic Nonlinear Optics Val
Thorens, France Contact: F. Kajzar,
DEIN/LPEM, CE Saclay, 91191 Gif sur
Yvette Cedex, France

**9-14 Surface Characterization of Ad-
sorption and Interfacial Resources**
Kona, HI Contact: Eng Foundation, 345
E 47th St, New York, NY 10017

11-15 183rd Mtg of AAS Washington,
DC Contact: AAS

16-21 Nanofabrication and Biosys
Kona, HI Contact: Eng Foundation, 345
E 47th St, New York, NY 10017

**22-24 Photoacoustic and Photothermal
Phenomena** Pointe-a-Pitre, Guadeloupe
Contact: Danièle Fournier, Optique/Instru-
mentation, ESPCI, 10 rue Vauquelin,
75321 Paris Cedex 05, France

● **22-28 Biomed Optics** Los Angeles, CA
Contact: SPIE, PO Box 10, Bellingham,
WA 98227

**22-28 Superconducting Superlattices
and Multilayers** Los Angeles, CA Con-
tact: I. Bozovic, Varian Associates, 3075
Hansen Way, M/S K-114, Palo Alto, CA
94304

**22-28 Optoelectronic and Microwave
Eng** Los Angeles, CA Contact: SPIE, PO
Box 10, Bellingham, WA 98227

22-28 OE/LASE '94 Los Angeles, CA
Contact: SPIE, PO Box 10, Bellingham,
WA 98227

**24-27 Critical Currents in Superconduc-
tors** Alpbach, Austria Contact: Eva
Haberl, Atominstut, Schüttelstrasse 115,
A-1020 Wien, Austria

24-28 Quantum Optics Rotorua, New
Zealand Contact: D. F. Walls, Dept of
Phys, Univ of Auckland, Private Bag
92019, Auckland, New Zealand

● **25-4 Feb Gamma-Ray Sky with Comp-
ton GRO and Sigma** Les Houches,
France Contact: M. Signore, Radioastro-
nomie Millimétrique, Ecole Normale
Supérieure, 24 Rue Lhomond, 75231
Paris Cedex 05, France

FEBRUARY 1994

6-10 Electronic Imaging Sci & Tech
San Jose, CA Contact: SPIE, PO Box 10,
Bellingham, WA 98227

● **12-19 Sanibel Symp** Ponte Vedra
Beach, FL Contact: Sanibel Symp, 362
Williamson Hall Univ of Florida, Gaines-
ville, FL 32611

13-18 Med Imaging Newport Beach,
CA Contact: SPIE, PO Box 10, Belling-
ham, WA 98227

○ **18-23 AAAS Ann Mtg** San Francisco,
CA Contact: AAAS Mtg Office, 1333 H
St NW, Washington, DC 20005 Note
revised contact

20-25 Opt Fiber Communications San
Jose, CA Contact: OSA

21-23 Ann Mtg of Adhesion Soc Or-
lando, FL Contact: Ken Liechti, ASE/EM
WRW 217, Univ of Texas, Austin, TX
78712

**21-25 Ocean Sci Mtg of AGU and
Amer Soc of Limnology and Oceanogra-
phy** San Diego, CA Contact: AGU

**21-25 Fiber Optic Sensing and Environ-
mental Monitoring** Prague, Czech Re-
public Contact: Karin Burger, Direct
Communications, Xantener Strasse 22,

Please note: New listings are marked ● and newly revised listings are marked ○. Addresses for frequently listed organizations are given in the accompanying table. The listings are coded as follows:

date title location contact

This calendar appears in alternate (odd-numbered) months. Notices should be sent to: Calendar, PHYSICS TODAY, American Center for Physics, One Physics Ellipse, College Park, MD 20740-3843, at least three months in advance.

AAAS American Association for the
Advancement of Science
AAPM American Association of Physicists
in Medicine
AAPT American Association of Physics
Teachers
AAS American Astronomical Society
ACA American Crystallographic Association
AGU American Geophysical Union
ANS American Nuclear Society
APS American Physical Society
ASA Acoustical Society of America
AVS American Vacuum Society
BNL Brookhaven National Laboratory
CNRS Centre National de la Recherche
Scientifique
DOE Department of Energy
DPG Deutsche Physikalische Gesellschaft
EPS European Physical Society
ESF European Science Foundation
IAEA International Atomic Energy Agency
IAU International Astronomical Union
ICTP International Centre for Theoretical
Physics

IEEE Institute of Electrical and Electronics
Engineers
IOP Institute of Physics (London)
IUPAC International Union of Pure and
Applied Chemistry
IUPAP International Union of Pure and
Applied Physics
LANL Los Alamos National Laboratory
LBL Lawrence Berkeley Laboratory
LLNL Lawrence Livermore National
Laboratory
MRS Materials Research Society
NAS National Academy of Sciences
NIST National Institute of Standards
and Technology
NRC Nuclear Regulatory Commission
NRL Naval Research Laboratory
NSF National Science Foundation
ORNL Oak Ridge National Laboratory
OSA Optical Society of America
S of R Society of Rheology
SPIE International Society for
Optical Engineering
SPS Society of Physics Students

ADDRESS KEY

Addresses for some frequently listed organiza-
tions are given below.

AAPM One Physics Ellipse, College Park, MD
20740-3846 [Tel. (301) 209-3350]
AAPT One Physics Ellipse, College Park, MD
20740-3845 [Tel. (301) 209-3300]
AAS 1630 Connecticut Ave, NW, Suite 200,
Washington, DC 20009 [Tel. (202) 328-2010]
AGU 2000 Florida Ave, NW, Washington,
DC 20009 [Tel. (202) 462-6900]
ANS 555 N Kensington Ave, La Grange Park,
IL 60525 [Tel. (708) 352-6611]
APS One Physics Ellipse, College Park, MD
20740-3844 [Tel. (301) 209-3285]
ASA 500 Sunnyside Blvd, Woodbury, NY
11797-2999 [Tel. (516) 576-2360]
AVS 120 Wall St, 32nd Floor, New York, NY
10005 [Tel. (212) 248-0200]
ESF 1 quai Lezay-Marnésia, F-67080 Strasbourg,
France [Tel. (33) 88 76 71 35]
ICTP PO Box 586, 34100 Trieste, Italy [Fax
(39)(40) 224163]
MRS 9800 McKnight Rd, Pittsburgh, PA 15237
[Tel. (412) 367-3003]
OSA 2010 Massachusetts Ave NW, Washington,
DC 20036 [Tel. (202) 223-8130]

D-1000 Berlin 15, Germany

27-4 Mar Microlithography San Jose, CA *Contact:* SPIE, PO Box 10, Bellingham, WA 98227

27-4 Mar Future Prospects for Uv and Vuv Lasers Santa Barbara, CA *Contact:* Eng Foundation, 345 E 47th St, New York, NY 10017

27-5 Mar Matter under Extreme Conditions Schladming, Austria *Contact:* 33rd IUKT, Inst für Theor Phys, Karl-Franzens-Univ Graz, Universitätsplatz 5, A-8010 Graz, Austria [*E-mail:* utp@edvz.kfunigraz.ac.at]

MARCH 1994

12-17 Nanophase Materials Davos, Switzerland *Contact:* Eng Foundation, 345 E 47th St, New York, NY 10017

13-18 Astronomical Telescopes and Instrumentation for the 21st Century Kona, HI *Contact:* SPIE, PO Box 10, Bellingham, WA 98227

● **14-16 Intl Sherwood Fusion Theory Conf** Dallas, TX *Contact:* Saralyn Stewart, Inst for Fusion Studies, Univ of Texas, RLM 11.234, Austin, TX 78712

14-16 Integrated Ferroelectrics Mon-

terey, CA *Contact:* Alona Miller, Microelectronics Rsch Labs, Univ of Colorado, Box 7150, Colorado Springs, CO 80933-7150

14-18 Chapman Conf on Phys of the Magnetopause San Diego, CA *Contact:* AGU

21-23 Molecular Structure Austin, TX *Contact:* J. E. Boggs, Dept of Chem, Univ of Texas, Austin, TX 78712

● **21-25 Intl Aerosol Symp** Moscow, Russia *Contact:* N. Belov, Karpov Inst of Physical Chem, ul. Obukha 10, Moscow 103064, Russia [*E-mail:* conf@nifhi.uucp.free.msk.su]

21-25 APS March Mtg Pittsburgh, PA *Contact:* APS

23-25 Production and Application of Light Negative Ions Dublin, Ireland *Contact:* M. Hopkins, Dept of Physical Sci, Dublin City Univ, Glasnevin, Dublin 9, Ireland

27-31 Indium Phosphide and Related Materials Santa Barbara, CA *Contact:* IEEE, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331

● **28-31 Wksp on Gamma-Gamma Colliders** Berkeley, CA *Contact:* A. Sessler, MS 71H, LBL, Berkeley, CA 94720

28-31 Conf of EPS Condensed Matter Div Madrid, Spain *Contact:* Secretary, Instituto de Ciencia de Materiales A, CSIC, Serrano 144, E-28006 Madrid, Spain

28-31 Ann Mtg of Physical Soc of Japan Fukuoka, Japan *Contact:* Physical Soc of Japan, Rm 211, Kikai-Shinko Bldg, 3-5-8 Shiba-Koen, Minato-ku, Tokyo 105, Japan

APRIL 1994

4-8 Aerospace Sensing Orlando, FL *Contact:* SPIE, PO Box 10, Bellingham, WA 98227

4-8 MRS Spring Mtg San Francisco, CA *Contact:* MRS

5-8 High-Power Lasers and Laser Applications Vienna, Austria *Contact:* Karin Burger, Direct Communications, Xantener Strasse 22, D-1000, Berlin 15, Germany

● **6-7 30th Ann Mtg of Natl Council on Radiation Protection and Measurements** Arlington, VA *Contact:* NCRP, 7910 Woodmont Ave, Ste 800, Bethesda, MD 20814

10-15 Experimental Nmr Conf Pacific Grove, CA *Contact:* ENC, 815 Don Gaspar Ave, Santa Fe, NM 87501

11-15 Integrated Optics Lindau, Germany *Contact:* SPIE, PO Box 10, Bellingham, WA 98227

17-22 Space Optics Garmisch-Partenkirchen, Germany *Contact:* SPIE, PO Box 10, Bellingham, WA 98227

18-20 Semiconductor Processing and Characterization with Lasers—Applications in Photovoltaics Stuttgart, Germany *Contact:* M. Brieger, DLR, Inst für Tech Phys, Pfaffenwaldring 38/40, 70569 Stuttgart, Germany

18-22 APS/AAPT Joint Spring Mtg Crystal City, VA *Contact:* APS

24-27 Assessing Impact of Nuclear Facilities on Human Health and the Environment Arlington, TX *Contact:* Randall

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CALENDAR

Janne, TU Electric, 400 N Olive, LB-81, Dallas, TX 75201

24-29 Surfaces and Interfaces in Mesoscopic Devices Kona, HI Contact: Eng Foundation, 345 E 47th St, New York, NY 10017

MAY 1994

1-5 Instrumentation Symp Baltimore, MD Contact: R. E. Lindeman, Cal-span/AEDC Div, 676 2nd St, Arnold AFB, TN 37388-4001

1-6 Laser Processing of Materials Palm Coast, FL Contact: Eng Foundation, 345 E 47th St, New York, NY 10017

8-13 Conf on Lasers and Electro-Optics/Quantum Electronics and Laser Sci Anaheim, CA Contact: OSA

● **16-19 Symp on Radiation Measurements and Applications** Ann Arbor, MI Contact: H. Lum, 3034 Phoenix Memorial Lab, Univ of Michigan, Ann Arbor, MI 48109

● **16-20 Interferometry '94** Warsaw, Poland Contact: M. Kujawińska, Inst of Design of Precise and Opt Instruments, Chodkiewicza 8, 02-525 Warsaw, Poland

19-24 Particles, Strings and Cosmology Syracuse, NY Contact: PASCOS 1994, Phys Dept, Syracuse Univ, Syracuse, NY 13244

23-27 Joint Spring Mtg of AGU and Mineralogical Soc of America Baltimore, MD Contact: AGU

● **23-29 Quantum Sys: New Trends and Methods** Minsk, Belarus Contact: Ya. M. Shnir, B. I. Stepanov Inst of Phys, Acad of Sci of Belarus, F. Skaryna Ave 70, Minsk, 220602, Republic of Belarus [E-mail: kilin@adonis.ias.msk.su]

26-28 High-Temperature Superconducting Electron Devices Whistler, Canada Contact: Wksp Secretariat, FED, Fukide Bldg No 2, 4-1-21, Toranomon, Minato-ku, Tokyo 105, Japan

29-2 Jun 184th Mtg of AAS Minneapolis, MN Contact: AAS

30-4 Jun Nucleus-Nucleus Collisions Taormina, Italy Contact: M. Ditoro, Lab Nazionale del Sud, INFN, 44 Via S. Sofia, 95125 Catania, Italy [E-mail: nnconf@lns.infn.it]

● **31-3 Jun 38th Intl Symp on Electron, Ion and Photon Beams** New Orleans, LA Contact: I. Adesida, Everitt Lab, Univ of Illinois, 1406 West Green St, Urbana, IL 61801

31-6 Jun Intersections of Particle and Nuclear Phys St. Petersburg, FL Contact: Elly Driessen, Conf Secretary, TRIUMF, 4004 Wesbrook Mall, Vancouver, BC V6T 2A3, Canada

JUNE 1994

● **5-7 Wallace Clement Sabine Centennial Symp** Cambridge, MA Contact: MIT Conf Services, Room 7-111, 77 Massachusetts Ave, Cambridge, MA 02139

5-10 Ordered Molecular and Nano-scale Electronics Kona, HI Contact: Eng Foundation, 345 E 47th St, New York, NY 10017

6-8 Conf on Plasma Sci Santa Fe, NM Contact: Anthony Perratt, LANL, Group X-10, MS D-406, PO Box 1663, Los Alamos, NM 87545

● **6-9 1994 Rochester 5 Mtgs** Rochester, NY Contact: OSA

6-10 127th Mtg of ASA Cambridge, MA Contact: ASA

7-10 Cryogenic Eng Genova, Italy Contact: Piera Ponta, Consorzio INFN, Via dell'Acciaio 139, 16152 Genova, Italy

● **13-17 Perspectives for Interacting Boson Model** Padova, Italy Contact: J. Mooney, BNL, Bldg 510A, Phys Dept, PO Box 5000, Upton, NY 11973

● **13-17 Eur Vacuum Conf** Uppsala, Swe-

den Contact: L. Westerberg, Svedberg Lab, Box 533, S-751 21 Uppsala, Sweden

13-17 Ion Implantation Tech Catania, Italy Contact: IIT '94, Dept of Phys, Corso Italia 57, I-95129 Catania, Italy [E-mail: iit_94@ct.infn.it]

13-17 Spectral Line Shapes Toronto, Canada Contact: A. D. May, Phys Dept, Univ of Toronto, Toronto M5S 1A7, Canada

● **14-18 Amer Coll of Med Phys Symp and Ann Mtg** Jackson Hole, WY Contact: ACMP, 1891 Preston White Dr, Reston, VA 22091

Essential Reading Material For the Materials Scientist

SUPERCONDUCTIVITY: Its Historical Roots and Development from Mercury to the Ceramic Oxides

Per Fridtjof Dahl, *Superconducting Super Collider Laboratory, Dallas*

The first truly comprehensive history of superconductivity—from the first studies in the late 19th century to the present. The book delves deeply into a largely undocumented early history, marked by H.K. Onnes's first successes with mercury in 1911 and extending to the onset of World War II. Encompasses the materials development of the fifties; the work that culminated in the BCS theory of the early sixties; and the important recent application of ceramic oxides.

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● **15-17 Surface Analysis '94** Burlington, MA *Contact:* J. D. Geller, Geller MicroAnalytical Lab, 1 Intercontinental Way, Peabody, MA 01960

● **15-17 Phys in Collision** Tallahassee, FL *Contact:* H. Wahl, Florida State Univ, High Energy Phys Dept, Tallahassee, FL 32306

● **15-17 Collective Phenomena in Polymer Phys** London, Ontario *Contact:* T. Lookman, Dept of Applied Math, Univ of Western Ontario, London, Ontario N6A 5B7, Canada

18-24 Concepts of Magnetic Resonance Kiawah Island, SC *Contact:* Allan Johnson, Dept of Radiology, Box 3302, Duke Univ Med Ctr, Durham, NC 27710

19-24 Ann Mtg of ANS New Orleans, LA *Contact:* ANS

21-24 NATO ARW on Rapid Solidification and Processing Tech West Point, NY *Contact:* M. A. Otonari, US Army ARDEC, Picatinny Arsenal, NJ 07806

26-1 Jul Ann Mtg of ACA Atlanta, GA *Contact:* ACA, Box 96, Ellicott Station, Buffalo, NY 14205

27-1 Jul Conf on Precision Electromagnetic Measurements Boulder, CO *Contact:* Donald Sullivan, Div 847, NIST, Boulder, CO 80303

29-4 Jul Forum on New Materials Florence, Italy *Contact:* CIMTEC, PO Box 174, 48018 Faenza, Italy

● **29-14 Jul Particle and Nuclear Astrophysics and Cosmology in the Next Millennium** Snowmass, CO *Contact:* C. M. Sazama, Fermilab, PO Box 500, Batavia, IL 60510

JULY 1994

3-8 Resonance Ionization Spectroscopy Bernkastel-Kues, Germany *Contact:* J. E. Parks, Inst of RIS, 10521 Rsch Dr, Ste 300, Knoxville, TN 37932

3-9 Synchrotron Radiation in Materials Sci Chester, UK *Contact:* G. N. Greaves, Daresbury Lab, Warrington WA4 4AD, UK

● **4-8 Hypernuclear and Strange-Particle Phys** Vancouver, Canada *Contact:* HYP94, TRIUMF, 4004 Wesbrook Mall, Vancouver, BC V6T 2A3, Canada

4-9 Materials and Mechanisms of Superconductivity/High-Temperature Superconductors Grenoble, France *Contact:* M. Cyrot, CNRS, 25 ave des Martyrs, 38042 Grenoble Cedex, France

● **5-8 Airborne Astron Symp** Moffett Field, CA *Contact:* E. Erickson, NASA Ames Rsch Ctr, MS 245-6, Moffett Field, CA 94035-1000

● **10-23 NATO Adv Study Inst on Phys and Materials Sci of High-Temperature Superconductors III** Sithonia, Greece *Contact:* N. G. Eror, Dept of Materials Sci and Eng, 848 Benedum Hall, Univ of Pittsburgh, Pittsburgh, PA 15261

17-22 Solid-to-Solid Phase Transformations in Inorganic Materials Pittsburgh, PA *Contact:* TMS Mtg Services Dept, 420 Commonwealth Dr, Warrendale, PA 15086

18-22 Synchrotron Radiation Instrumentation Stony Brook, NY *Contact:* L. Lever, NSLS, BNL, Bldg 725D, Upton, NY 11973

18-22 Intl Radiation Phys Soc Symp Rabat, Morocco *Contact:* D. B. Isabelle, CERI-CNRS, 3A Rue de la Ferrollerie, 45071 Orleans Cedex 2, France

24-28 36th Ann Mtg of AAPM Anaheim, CA *Contact:* AAPM

24-29 Nonlinear Optics: Materials, Fundamentals and Applications Waikaloa, HI *Contact:* OSA

● **31-5 Aug 14th Intl Conf on Atomic Phys** Boulder, CO *Contact:* ICAP-14, JILA, Univ of Colorado, Campus Box 440, Boulder, CO 80309

AUGUST 1994

2-6 Mtg of APS Div of Particles and Fields Albuquerque, NM *Contact:* Sally Seidel, Univ of New Mexico, Dept of Phys and Astron, 800 Yale Blvd NE, Albuquerque, NM 87131

● **7-12 Gordon Conf on Order/Disorder in Solids** New London, NH *Contact:* M. A. White, Dept of Chem, Dalhousie Univ, Halifax, Nova Scotia B3H 4J3, Canada

● **7-12 Sagamore XI Conf on Charge, Spin and Momentum Densities** Brest, France *Contact:* G. Loupiau, LMC, Univ P. et M. Curie, 4, pl. Jussieu, case 115, 75252 Paris Cedex 05, France [*E-mail:* sagamore@lmcp.jussieu.fr]

8-13 AAPT Summer Mtg Notre Dame, IN *Contact:* AAPT

14-18 High-Speed Optoelectronic Devices for Communications and Interconnects Durham, NH *Contact:* Eng Foundation, 345 E 47th St, New York, NY 10017

14-19 Phys of Semiconductors Vancouver, Canada *Contact:* C. Schwerdtfeger, Phys Dept, Univ of British Columbia, Vancouver, BC V6T 1Z1, Canada

● **15-18 Intl Conf on Strongly Correlated Electron Systems** Amsterdam, The Netherlands *Contact:* A. de Visser, SCES '94, Van der Waals-Zeeman Lab, Univ van Amsterdam, Valckenierstraat 65, 1018 XE Amsterdam, The Netherlands [*E-mail:* sces94@phys.uva.nl]

22-26 Intl Conf on Magnetism Warsaw, Poland *Contact:* J. Morkowski, Inst of Molecular Phys, Polish Acad of Sci, ul. Smoluchowskiego 17/19, 60-179 Pozan, Poland

22-26 Theory of Fusion Plasmas Varenna, Italy *Contact:* E. Sindoni, ISPP, 16 Via Celoria, 20133 Milano, Italy

25-29 AGU Western Pacific Geophysics Mtg Hong Kong *Contact:* AGU

28-2 Sep Conf on Lasers and Electro-Optics Amsterdam, The Netherlands *Contact:* OSA

29-3 Sep X-Ray Absorption Fine Structure Berlin, Germany *Contact:* XAFS Secretariat, Dept of Phys, Freie Univ, Arnimallee 14, D-1000 Berlin 33, Germany

29-3 Sep Wksp on Tokamak Concept Improvement Varenna, Italy *Contact:* S. Bernabei, PPPL, PO Box 451, Princeton, NJ 08543

30-1 Sep Conf on Thermoelectrics Kansas City, MO *Contact:* B. Mathiprakasham, Midwest Rsch Inst, 425 Volker Blvd, Kansas City, MO 64110-2299

SEPTEMBER 1994

● **4-9 Eur Conf on Molecular Electronics** Kloster Banz, Germany *Contact:* J. U. von Schütz, ECME 94, 3 Phys Inst, Univ Stuttgart, Pfaffenwaldring 57, D-70550 Stuttgart, Germany

● **5-9 Multiparticle Correlations and Nuclear Reactions** Nantes, France *Contact:* J. Aichelin, Dept of Phys, Univ Nantes, 2 rue de la Houssinière, 44072 Nantes Cedex 03, France [*E-mail:* corinne@frcpn11.in2p3.fr]

● **7-11 Hadrons '94** Uzhgorod, Ukraine *Contact:* G. V. Bugrij, Hadrons, Inst for Theor Phys, Kiev 143, Ukraine [*E-mail:* abugrij@gluk.apc.org]

● **15-22 High-Energy Spin Phys and Polarization Phenomena in Nuclear Phys** Bloomington, IN *Contact:* J. Meadows, Indiana Univ Cyclotron Facility, 2401 Milo B. Sampson Lane, Bloomington, IN 47408

18-22 Aperiodic Crystals Lausanne, Switzerland *Contact:* Aperiodic '94, Inst of Crystallography, Univ of Lausanne, BSP, 1015 Lausanne, Switzerland

18-24 Semiconductor Laser Conf Maui, HI *Contact:* IEEE/LEOS, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331

22-27 Thinking Sci for Teaching: The Case for Phys Rome, Italy *Contact:* P. Maiolo, Lab di Didattica delle Scienze, Dipartimento di Fisica, Università La Sapienza, Ple Aldo Moro 2, 00185 Rome, Italy

26-30 Eur Conf on Opt Communication Florence, Italy *Contact:* C. Mossotto, CSLET spa, Via Reis Romoli 274, 10148 Torino, Italy

OCTOBER 1994

2-6 66th Ann Mtg of S of R Philadelphia, PA *Contact:* Norman Wagner, Dept of Chemical Eng, Univ of Delaware, Newark, DE 19716

24-28 41st Ann AVS Symp Denver, CO *Contact:* AVS

24-28 Intl Conf on Plasma Phys Foz do Iguaçu, Brazil *Contact:* INPE, Setor de Eventos, Av dos Astronautas 1758, CP 515, CEP 12201-970, Sao José dos Campos, SP, Brazil [*E-mail:* 94icpp@plasma.inpe.br]

30-4 Nov Optcon '94 Boston, MA *Contact:* OSA

NOVEMBER 1994

● **7-10 Application of Accelerators in Rsch and Industry** Denton, TX *Contact:* J. L. Duggan, Univ of North Texas, Dept of Phys, PO Box 5368, Denton, TX 76203

7-11 Mtg of APS Div of Plasma Phys Minneapolis, MN *Contact:* APS

13-18 Winter Mtg of ANS Washington, DC *Contact:* ANS

● **14-19 Ionizing Radiation and Polymers** Guadeloupe, France *Contact:* A. Le Moël DSM/DRECAM/SRSIM/LPI, CEA-CE Saclay, F-91191 Gif-Sur-Yvette Cedex, France

27-1 Dec 128th Mtg of ASA Austin, TX *Contact:* ASA

28-2 Dec MRS Fall Mtg Boston, MA *Contact:* MRS

continued from page 15

the surface would have little chance to contribute). However, in other cases the direction remained unchanged, but the intensity went through a maximum for a particular voltage, as one would expect from the requirement of a constructive phase relationship between scatterings from different atomic layers. As Davisson and Germer pointed out, every diffraction maximum based on scattering from a space lattice also corresponded to a possible peak due to scattering from a line grating of surface atoms. In their summary of all their results they identified several peaks due to a single layer of surface atoms and a larger number of others due to scattering by a space lattice. These latter peaks gave the first indications that the scattering angle was not necessarily quite what one would predict from a knowledge of the electron wavelength *outside* the crystal.

It is true that in subsequent experiments Davisson and Germer did deliberately explore Bragg scattering from the planes of atoms parallel to the crystal surface.⁴ By studying the regular reflection of electrons incident on the crystal surface at angles other than 90°, they were able to compare their results with the theoretical predictions based on a refractive index for electron waves entering a crystal,⁵ and found substantial agreement. All this, of course, is old and well-established history. The only point I would wish to make is that except for the initially mysterious phenomenon of a refractive index for electron waves entering a solid, Davisson and Germer had a full and realistic picture of what was going on in their experiments, whereas Best's brief comments about their analysis might be taken to suggest otherwise.

References

1. R. L. Sproull, W. A. Phillips, *Modern Physics*, 3rd ed., Wiley, New York (1980).
2. For example, A. P. French, E. F. Taylor, *Introduction to Quantum Physics*, Norton, New York (1978).
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Did Privilege Blunt Soviet Scientists' Politics?

My attention was attracted by the

letter from Eugene M. Chudnovsky and Alex Vilenkin that appeared under the headline "Soviet Scientists' Apolitical Past" (December 1992, page 11). I know the authors in person and I took an interest in the problem they touched upon. However, as I read through the letter, I realized that it is quite biased: The main point of the letter is not a proper analysis of past apolitical behavior, but only that former Soviet scientists neither deserve nor need individual financial support.

How can an apolitical past be related to current support? I by no means wish to get into an argument with Chudnovsky and Vilenkin. My only goal in this letter is to let Western readers, especially young people, know the truth about the situation of Soviet physicists and their attitude toward politics.

Soviet physicists were patriots and played an important role in strengthening their country's defense potential, just as their American and English colleagues did in their countries. Andrei Sakharov never blamed himself for his participation in this work. On the contrary, he was proud that his efforts promoted the creation of thermonuclear weapons for his country. Igor Kurchatov also contributed essentially to this program. They, like many hundreds of other physicists, did their job not because they were bought with "privileges," as Chudnovsky and Vilenkin state, but only out of their sense of duty. And what enormous privileges are these authors jabbering about? Kurchatov's "privilege" was that he did not live till 60 and died of a heart attack. My "privilege" was that in addition to my main salary of 500 rubles per month, I got 350 more as a member of the Academy of Sciences. But I had neither "cars with drivers" nor "dachas." As far as I know, neither did more prominent scientists such as Lev Landau, Vladimir Fock, Igor Tamm and Isaak Pomeranchuk. Once I heard a story about Pomeranchuk calling the head of a canteen seeking help in getting a pound of rice for his sick wife.

And now about politics. Chudnovsky and Vilenkin claim that Soviet scientists' "freedom of thought rarely went beyond discussions around the kitchen table, while objectively they were supporting the regime by their complacent behavior." However, physicists such as Fock and Moisey Markov struggled for the scientific truth contained in quantum mechanics and relativity, both general and special, against strong attacks from orthodox Marxist

philosophers who charged them with idealism. When a powerful anti-Einstein article was prepared for publication in *Pravda*, Kurchatov succeeded in stopping it. Weren't conferences on physics and philosophy held in Kharkov and Kiev at which the ideas of quantum mechanics were defended? Those conferences were very important in legalizing quantum mechanics and relativity at Ukrainian universities. It is surprising that Chudnovsky and Vilenkin, educated at Kharkov University, have forgotten that.

And how can we forget the courage of the great physicist Peter Kapitsa, who literally pulled Landau from the hands of Lavrenty Beria, the head of the Soviet secret police? Was that not politics? Was it not an act of heroism that preserved Landau for science throughout the world? I cannot help recalling the courageous talks of Mikhail Leontovich, Tamm and others against electing Trofim Lysenko and his myrmidons to the Academy of Sciences. Note also that during the hard times of *Lyenskovichina* Kurchatov opened a biological division at his institute in which genetics was studied, and that the geneticist Nikolai Timofeev-Ressovsky gave talks at the seminar held by Kapitsa and at other physical meetings. Incidentally, let me mention the dissident Yuri Orlov. Many physicists supported him, and the academicians Abram Alikhanov, his brother Artemii Alikhanian and Pomeranchuk helped him to get a job at Yerevan and backed up his election to the Armenian Academy of Sciences.

Perhaps all this is not sufficient for Chudnovsky and Vilenkin, and they would like to demand more martyrs for the sake of science. But is it not enough that the brilliant physicist Lev Shubnikov was shot dead by a firing squad, and such talented physicists as Matvey Bronshtein, Vadim Gorski and Lev Rosenkiewicz also were killed?

But here let me step aside from the Soviet reality and get into a more general problem of politics and science by addressing the case of Galileo. Only Bertolt Brecht condemned Galileo for not struggling against the church and not dying like Giordano Bruno. You see, that made Brecht's play about Galileo look more spectacular! Most of us, however, have another opinion. And not only do we have it, but so did Einstein and David Gilbert. Einstein said: "He [Galileo] needlessly got into the lion's jaws, going to Rome to fight priests and other intriguants. I do not think I could attempt something