
People and things

On 21 January CERN Director General Chris Llewellyn Smith welcomed Italian Foreign Affairs Minister Lamberto Dini (right) to the Laboratory.

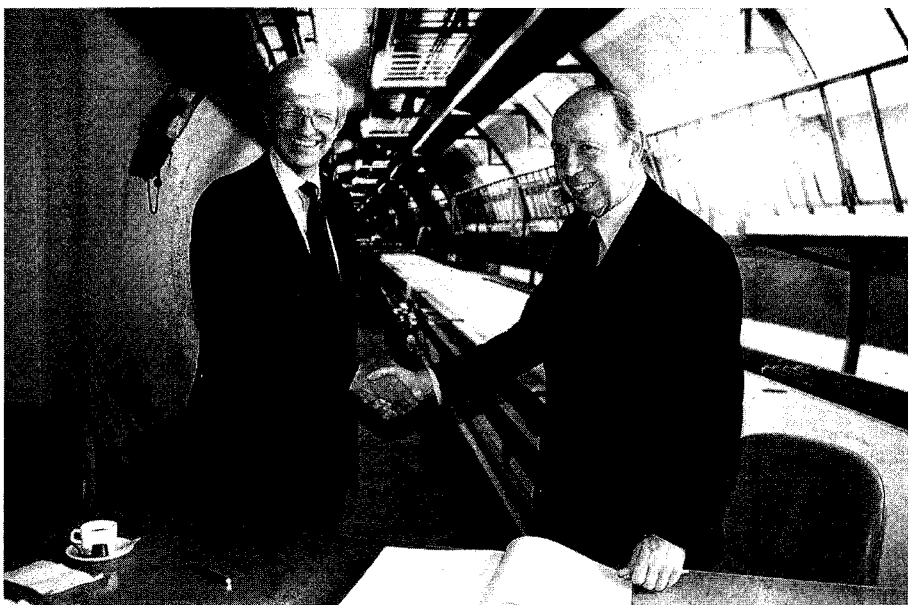
Internet performance - a concern for physicists

Internet performance and future communications networks were major topics at the International Committee for Future Accelerators (ICFA) semi-annual meeting at the Stanford Linear Accelerator Center on January 31. In addition to connectivity, the group also explored other topics related to particle accelerators, technology and design.

Internet reliability, bandwidth and speed were suffering due to the increased use of the public Internet lines, according to specialist David Williams, formerly head of CERN's Computers and Networks Division. "Intranets and Extranets are now necessary for private traffic," said Williams. "The American car industry is already investigating such possibilities. So physics must do the same."

"The problem in setting up a private Internet for physics is not technology, but it is the organization, financing, and politics of such a venture," continued Williams. "The United States is the only country so far where deregulation has worked and service is related to costs." Deregulation of the telecom industry hits Europe in January of 1998. Individual nations may operate more efficiently internally after European deregulation, but "there is yet no clear indication of how the pricing of international lines to the United States and Japan will be affected," according to Williams.

According to Burton Richter, Director of SLAC and host of the ICFA meeting, "Physics was vital to the implementation of the first Internet. Now we need to look the



next level in order to maintain our science proficiency," said Richter. The ICFA meeting was attended by 25 leaders of physics facilities from around the world, including Russia, China, Japan, Europe and the United States. (See also page 25.)

1997 American Physical Society Awards

Among the prestigious awards made by the American Physical Society for 1997 are: the Tom W. Bonner Prize to R.G. Hamish Hamilton of Washington 'for his intellectual and experimental leadership in seminal experiments' testing and determining fundamental properties of nuclear reactions and establishing stringent limits on the mass of the electron antineutrino (at Los Alamos); the Dannie Heineman Prize to Harry Lehmann of Hamburg for developing powerful new mathematical relations; the Lilienfeld Prize to Michael Turner of Chicago for his work in particle

cosmology and 'his ability to communicate the excitement of the field'; the W.K.H. Panofsky Award to Henning Schröder of DESY and Yuri Zaitzev of ITEP, Moscow, for 'their leading role in the first demonstration of mixing in the neutral B system' (with the ARGUS experiment); the I.I. Rabi Prize to Eric Cornell of the US National Institute of Standards and Technology and Wolfgang Ketterle of MIT for their achievement of Bose-Einstein condensation in a gas; the J.J. Sakurai Prize to Thomas Appelquist of Yale for pioneering work on charmonium and on the decoupling of heavy particles; the Robert R. Wilson Award to Andrew Sessler of Berkeley for his many contributions to beam dynamics and accelerator science; the Edward A. Bouchet Award to Larry Gladney of Pennsylvania for work on B meson physics and for his efforts in physics education; and The Dissertation in Beam Physics Prize to Linda Spentzouris of Northwestern for her pioneering measurements of nonlinear coherent phenomena in

Eric Cornell of the US National Institute of Standards and Technology, who shares with Wolfgang Ketterle of MIT the American Physical Society's I.I. Rabi Prize, and with Carl Wieman of Colorado shares the prestigious 1997 King Faisal International Prize for Science, for their 1995 synthesis of a Bose-Einstein condensate.

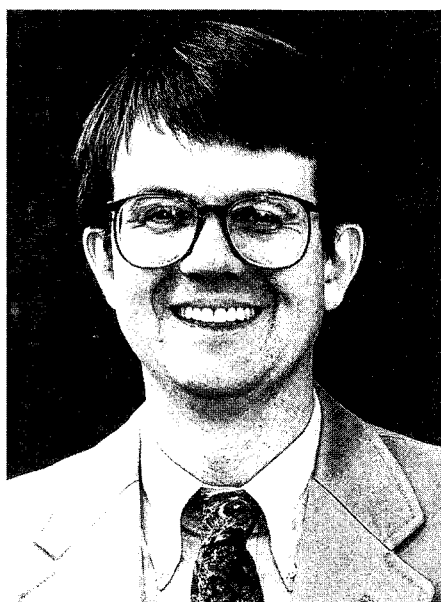
high energy hadron beams. The Herbert P. Broida Prize goes to William Happer of Princeton for contributions to atomic and chemical physics (Happer preceded Martha Krebs as Director of the Office of Energy Research at the US Department of Energy). The Nicholson Medal goes to Fang Lizhi of Arizona for his 'courageous struggle for democracy and human rights in China'.

On people

This year's prestigious Wolf Prize for physics goes to John Wheeler, professor emeritus at Princeton and Texas, Austin. He is cited for his work on black holes, quantum gravity and contributions to nuclear scattering and fission, work which goes back to milestone papers with Niels Bohr.

Herwig Schopper, Director General of CERN 1981-88, and Ugo Amaldi of CERN were among those awarded the Order of Friendship of the Russian Federation in recognition of their contributions to the development of international collaboration in nuclear research. The awards were made during a recent meeting of the Scientific Council of the Joint Institute for Nuclear Research, Dubna.

Larry Cardman, former deputy associate director of physics at the Jefferson Laboratory (formerly CEBAF), Newport News, Virginia, becomes the Laboratory's Associate Director of Physics, replacing John Domingo, who steps down following the completion and equipping of the Laboratory's three large experimental halls.



Bose-Einstein condensate prizes

The synthesis of a Bose-Einstein condensate (November 1995, page 12) is one of the major physics achievements of recent years.

Eric Cornell of the US National Institute of Standards and Technology and Carl Wieman of Colorado share the prestigious 1997 King Faisal International Prize for Science for this work. In addition (see above), the American Physical Society's I.I. Rabi Prize goes to Eric Cornell of NIST and Wolfgang Ketterle of MIT.

The King Faisal Science Prize was awarded for the first observation of BEC in a dilute bose gas. Cornell and Wieman were the leaders of that experiment. The APS Rabi prize is a specialized prize specifically for "young" physicists, hence the selection of Wolfgang Ketterle, who has also realized a BEC in his labs, and has done some very nice work with condensates.

Gerhard Horlitz 1926-97

Gerhard Horlitz, worldwide authority on low-temperature installations for high energy physics and the father of most such devices built and operated at DESY, died in January at the age of 70. After finishing his PhD in Bonn, in 1957 he joined Willibald Jentschke's team at Hamburg to construct the first DESY electron synchrotron, devising ingenious methods for measuring magnetic fields. In 1961 he moved for three years to Saclay, where the 85 cm hydrogen bubble chamber was being built for DESY. Back at DESY he organized the smooth operation and a series of impressive improvements of this chamber, including runs with deuterium, with neon-hydrogen mixtures and some using internal targets. This chamber operated up to 1972, providing some 8 million pictures, mainly with GeV photons.

The bubble chamber was finally replaced by a streamer chamber (using the same magnet) with hydrogen targets provided by Horlitz' group. At that time his team had already started experimenting with

Gerhard Horlitz 1926-97



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EU Postdoctoral Fellowships (TMR Programme)

We invite applications for postdoctoral fellowships (one to two years) in theoretical, experimental physics (high energy physics, astroparticle physics, nuclear physics, synchrotron radiation and gravitational wave detection), and accelerator physics at the Laboratori Nazionali di Frascati of INFN (Istituto Nazionale di Fisica Nucleare).

The Laboratory is situated on a pleasant hill about 20km south of the centre of Rome. Some 150 researchers work here on the different activities. The 1 GeV e^+e^- machine DAΦNE (Phi factory), to study CP violation and hypernuclear physics, is currently under commissioning. Information on the Laboratory activities can be obtained from:

A. Antonelli, tel. 39-6-94032787, e-mail antonelli@lnf.infn.it and at the URL: <http://www.lnf.infn.it/>.

Applicants must be nationals of an EU member state (excluding Italy), or an associated state, age under 35 and have a PhD degree (or equivalent level of education) or 4 years' full-time research activities at post-graduate level. They should not have carried out research activities in Italy for more than 18 months in the last two years.

Fellows will be employed under the EU's general conditions governing research training fellowships (TMR Programme) and will receive an allowance in ECUs per month to cover subsistence and mobility expenses, tax and social security contributions and cost of attending conferences, travel expenses, etc. Global monthly allowance will be of about 3000 ECUs. More information on the TMR Programme are given at the URL: <http://www.cordis.lu/tmr/home.html>.

Candidates should send a letter of application (where the activity of interest must be specified), a C. V. and two letters of recommendation by 15 April 1997 to:

EU Fellowships Programme, Mrs. M. Cristina D'Amato, LNF-INFN
Via E. Fermi, 40 - 00044 Frascati (Italy)
tel.: +39 6 94032373, fax: +39 6 94032475, e-mail: damato@lnf.infn.it

The selected candidates will apply to the next round of EU selection which has the closing date of 16 June 1997.



ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
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Laboratoire Européen pour la Physique des Particules
European Laboratory for Particle Physics

The CERN-Asia Fellows and Associates Programme

Within the framework of the CERN-Asia Fellows and Associates Programme, CERN offers 3 grants every year to young East, Southeast and South Asian postgraduates, below 33 years of age, to participate in its Scientific Programme in the areas of Experimental and Theoretical Physics and of Accelerator Technologies.

Applications will be considered by the CERN Fellowship Selection Committee at its meeting of June.

An application consists of a "completed application form" where it should be stated "CERN-Asia Programme", three separated reference letters, a curriculum vitae including the list of scientific publications and any other information in favour of the quality of the candidate.

Application, reference letters and any other information should be provided only in the English language.

Application forms can be obtained from:

Recruitment Service-CERN-Personnel Division
CH-1211 Geneva 23 - Switzerland
E-mail: recruit@afsmail.cern.ch
Telefax: +41-22-767 2750

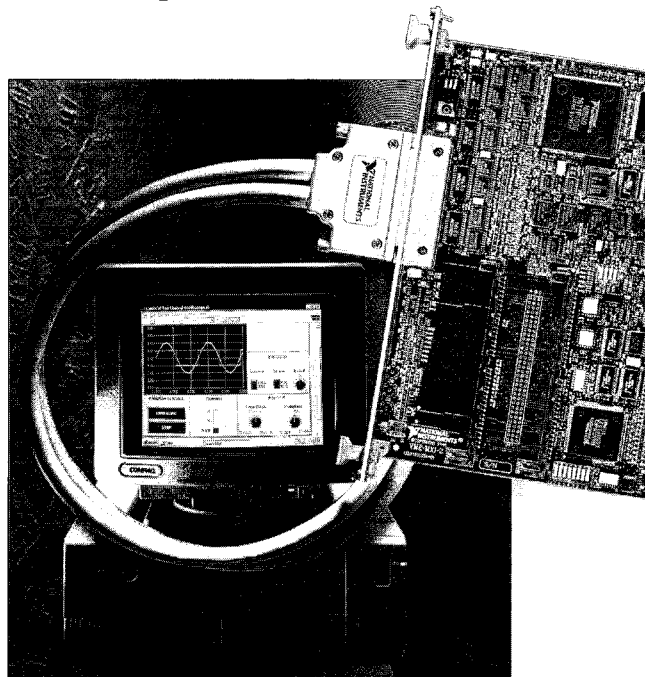
Applications should reach the Recruitment Service at CERN before the 7th of April 1997.

The duration of the appointment will be for one year which might, exceptionally, be renewed up to a maximum length of two years.

Applications for a short term Associate position will also be considered for Scientists of less than 40 years of age, who wish to spend a fraction of the year at CERN or a Japanese laboratory and who are "on leave" from their institute.

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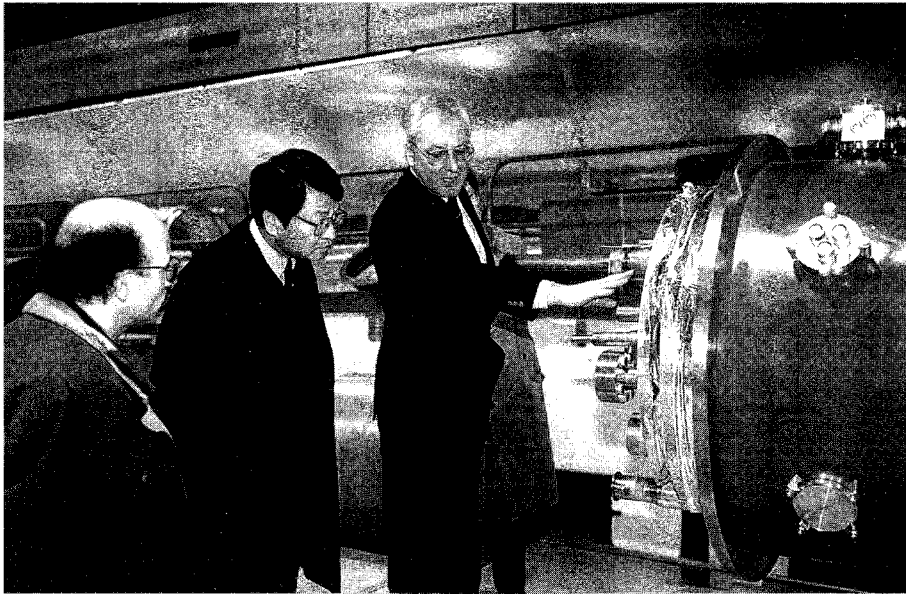
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Soon after the announcement that Japan is extending an additional generous tranche of support for CERN's future LHC proton collider (January, page 1), Wataru Iwamoto, centre, Director of International Science Affairs of the Japanese Ministry of Science, Sports and Culture (Monbusho) hears about LHC superconducting magnets from LHC Project Director Lyn Evans. Looking on is Peter Jenni, spokesman of the LHC ATLAS experiment. (Photo CERN HI18.1.97)



superconducting magnets and getting acquainted with liquid helium technology. Several superconducting coils were built, including one used later for medical purposes, and at the same time the first bigger solenoid, intended for the PLUTO detector, was built by industry under the direction of Horlitz. His group constructed at DESY a very thin superconducting shielding coil and the PLUTO compensation coils. The successful running of PLUTO at the electron-positron storage-rings DORIS and PETRA was to a great extent due to the Horlitz group. After PLUTO was replaced by the bigger CELLO, reliable superconducting operation was again his responsibility.

The most challenging of his activities came with the construction of the HERA proton superconducting storage ring, able to reach energies of more than 800 GeV. Already in 1978 the first studies for dipole magnets were undertaken, culminating with the construction of more than 400 nine-metre magnets

by German and Italian industry. In collaboration with Saclay, Gerhard Horlitz organized the development of HERA superconducting quadrupoles, also built by industry.

HERA required the biggest refrigeration plant ever built in Europe up to that time - and he was responsible for that project too. Its successful operation has contributed greatly to the smooth running of HERA and to experiments requiring low temperatures.

After his 'retirement' in 1991, Gerhard Horlitz continued his activities at DESY and developed a useful concept for the refrigeration of a superconducting linac (within the TESLA project).

As well as being a gifted scientist, Gerhard Horlitz had tremendous energy and was an excellent organizer, able to assume major responsibilities. He was also an admirable team leader, discussing personal or human problems as well as physics and technology with his collaborators and colleagues.

25 years of hadron colliders

In the article on 25 years of proton colliders (October 1996, page 9), we contrived to say 'Following the invention of beam stacking by the US Mid-Western Universities Research Association (MURA), led by Gerald O'Neill, in the mid-1950s, CERN built a ... model machine'. MURA was, of course, led by Donald Kerst. We regret the error.

Meetings

The third European Workshop on Beam Instrumentation and Diagnostics for Particle Accelerators will be held from 12-14 October at Laboratori Nazionali di Frascati dell'INFN, Frascati Italy, <http://www.lnf.infn.it/conference/dipac97.html> Further information from the Workshop Secretariat: Manuela Giabbai, LNF-INFN Accelerators Div., 00044 Frascati - Italy, fax +39 6 94032256 e-mail dipac@lnf.infn.it

The Advanced ICFA Workshop on Beam Dynamics Issues for electron-positron Factories will be held from 20-25 October at Laboratori Nazionali di Frascati dell'INFN, Frascati Italy, <http://www.lnf.infn.it/conference/icfa97.html> Further information from the Workshop Secretariat: Mariarita Ferrazza, LNF-INFN, 00044 Frascati - Italy, fax +39 6 94032582 e-mail icfa97@axlnf1.lnf.infn.it

Beauty 97, the 5th International Workshop on B Physics at Hadron Machines, will be held at UCLA from 13 - 17 October. Information from beauty97@physics.ucla.edu and

Swiss Ambassador to the United Nations and International Organizations in Geneva Walter Gyger at the opening of CERN's striking new building for physicists (see cover photograph), constructed with the help of the Swiss 'Fondation des Immeubles pour les Organisations Internationales', which has over the years added several major edifices to the Geneva landscape.
(Photo M. Jacob)



<http://www.physics.ucla.edu/~beauty97>

The 6th Conference on Electronics for Particle Physics will be held at LeCroy corporate headquarters at Chestnut Ridge, New York, on 28-29 May. Information from Linda Nelson at LeCroy, fax +1 914 578 5984, e-mail linda.nelson@lecroy.com

The 13th International Symposium on High Energy Spin Physics will be held from 8 - 12 September 1998 at the Institute for High Energy Physics, Protvino, Russia. There will be morning sessions of plenary talks, afternoons of contributed talks, poster sessions and round table discussions. The conference web page is <http://www.ihep.su/~spin98> e-mail spin98@mx.ihep.su.

ICFA Statement on the Large Hadron Collider

The International Committee for Future Accelerators (ICFA) met at the Stanford Linear Accelerator Center on 31 January, together with Directors of the world's major high energy physics laboratories. ICFA noted with great satisfaction that in December 1996 the CERN Council approved construction of the Large Hadron Collider (LHC) in a single stage, with commissioning planned for 2005.

The LHC will open a new energy domain and address today's key questions in particle physics, and is essential for further progress in this field. Its importance is indicated by the commitment of the nineteen CERN Member States and of non-Member States to support both the facility and the experiments.

The LHC will be a true world facility: some twenty-five non-Member States will contribute to and participate in the experiments, and contributions to the accelerator itself from Canada, India, Israel, Japan, Russia and the USA have been agreed or proposed. This development fulfills the primary purpose of ICFA which is "to promote international collaboration in all phases of the construction and exploitation of very high energy accelerators". It is a very important step forward in interregional collaboration, which ICFA regards as an excellent precedent.

External correspondents

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CEBAF Laboratory, (USA)
S. Corneliussen

Cornell University, (USA)
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MIT

PRINCIPAL RESEARCH SCIENTIST/ RESEARCH SCIENTIST

The Laboratory for Nuclear Science is seeking applicants for a research staff position with the Medium Energy Physics Group. This position is associated with the construction and operation of the Bates Large Acceptance Spectrometer Toroid (BLAST), a detector which has recently been approved for construction at the Bates Linear Accelerator Center (operated by MIT for the Department of Energy). BLAST will be the critical detector for internal target experiments using the new Stretcher/Storage Ring at Bates. An important responsibility of the MIT Medium Energy Physics Group in the BLAST project is the construction of the multi-wire drift chambers for particle tracking. The person we are seeking will play a leadership role in the construction, testing, and installation of these chambers.

Requirements: a Ph.D. in nuclear or high energy physics, significant experience beyond the graduate level, and experience in the construction of large multi-wire chambers. The level of this position (Principal Research Scientist or Research Scientist) will depend on the qualifications of the candidate.

Applications should include a curriculum vitae, a list of publications, and the names of at least three scientists who could be asked to write letters of recommendation. Applications should be sent before **April 15, 1997** to: **Prof. June L. Matthews, Room 26-433, MIT, 77 Massachusetts Avenue, Cambridge, MA 02139.** Qualified women and minorities are encouraged to apply.



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Niels Bohr Institute for Astronomy, Physics and Geophysics Professorship in Theoretical High Energy Physics

A professorship in theoretical high energy physics will become available as of October 1, 1997, at the Niels Bohr Institute for Astronomy, Physics and Geophysics. The high energy theory group at the Institute consists of 5 staff members and 10-15 guests, postdocs and graduate students. The group works in field theory, cosmology, quantum gravitation, string theory and related subjects. The areas of particular interest for the present professorship are the physics at the interface between particle physics and astrophysics, condensed matter physics and non-linear physics.

The high energy theory group works in close contact with the NORDITA high energy group and with the theoretical groups in complex systems and astrophysics at the Institute and NORDITA.

The successful candidate must have documented original theoretical research at the highest level within theoretical high energy physics and will be expected to contribute to the Institute's teaching programme at both graduate and undergraduate levels.

The application must include a curriculum vitae and a complete list of publications with a special indication of which publications are considered most relevant for this position. Information about teaching experience must also be enclosed.

The applications will from the Faculty of Science receive a list of applicants for the position. A specially appointed committee will evaluate the applicants' qualifications and also the entire report of the committee will be sent to all applicants. The list of applicants and the evaluation of fellow applicants must be treated confidentially by all applicants. The evaluation committee may ask for supplementary material, which the applicant then must provide in the requested number of copies.

Information about research plans, facilities and staff may be obtained from the Director, Professor Ole Hansen, Niels Bohr Institute for Astronomy, Physics and Geophysics, Blegdamsvej 17, DK-2100 Copenhagen Ø, Denmark; telephone: +45 35325292, fax: +45 35431087, E-mail: oleh@nbi.dk. Homepage: <http://www.nbi.dk/NBI/AFG/>.

The appointment is made according to a continuing contract as agreed between the Ministry of Finance and the Danish Confederation of Professional Associations. The annual salary is approx. DKK 430,500 after contribution to the pensions scheme. The application, marked "5207-P/1-97" and written in English, must formally be made to the Rector of the University of Copenhagen and mailed to the Faculty of Science, Øster Voldgade 3, DK-1350 Copenhagen N, Denmark. Applications, in order to be considered, must be received by the Faculty of Science not later than May 1, 1997, at noon.

Three copies of the application, as well as three copies of a brief outline of proposed research and three copies of the most relevant publications, should be mailed to the Director of the Niels Bohr Institute for Astronomy, Physics and Geophysics. No further material should be forwarded until requested.

POSTDOCTORAL POSITION IN EXPERIMENTAL HIGH ENERGY PHYSICS

The ATLAS Group at the **Lawrence Berkeley National Laboratory** has an immediate opening for a postdoctoral candidate in experimental High Energy Physics. The LBNL group is part of the ATLAS collaboration, building one of the two large experiments at the CERN Large Hadron Collider. The LBNL group is engaged in the design and construction of the ATLAS silicon strip and pixel trackers. We are currently working on the electronics and detector module design for the silicon strip tracker. And we are also engaged in the design of the ATLAS pixel system, including the mechanics and cooling, the electronics, detectors and preparations for detector module construction.

The successful candidate will participate in the design and fabrication of the ATLAS silicon strip and/or pixel systems. The candidate is expected to take a major role in the analysis of laboratory and test beam data for silicon strip and pixel systems. Experience in the area of silicon systems is preferred. This position is a two-year term appointment.

Please send a Curriculum Vitae and three letters of reference by April 1, 1997, to: **Betty Moura, 50E-124, Lawrence Berkeley National Laboratory, Job #PHY/4858, 1 Cyclotron Road, Berkeley, CA 94720.** LBNL is an Equal Opportunity Employer committed to the development of a diverse workforce.



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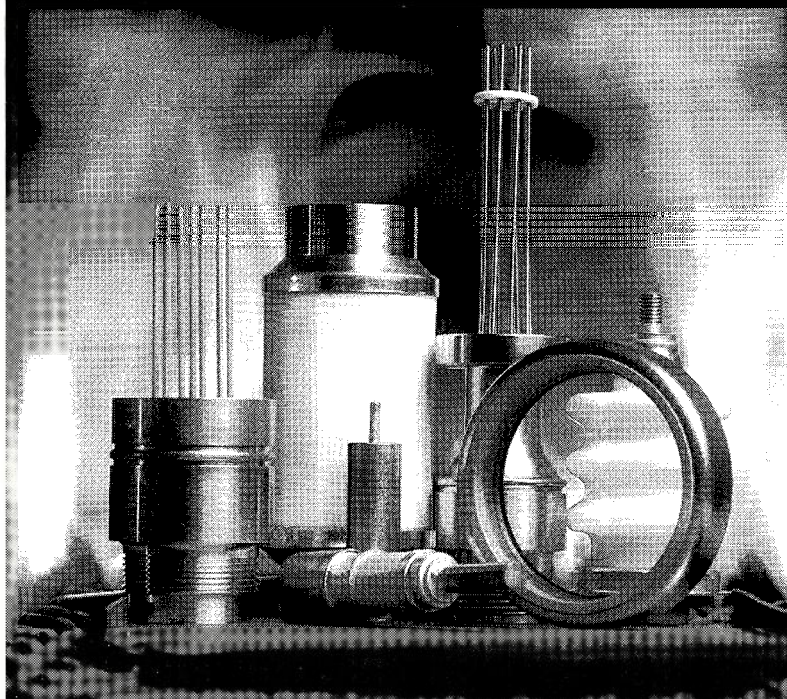
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please see page III

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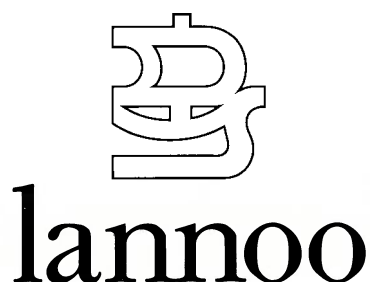
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POSTDOCTORAL RESEARCH ASSOCIATE

The National Synchrotron Light Source (NSLS) at Brookhaven National Laboratory has a position available for a recent PhD trained in physics and/or analog/digital electronics with experience in radiation detection, to participate in the design of novel x-ray detectors for use at the NSLS. Candidates should have experience in detector development, so as to develop and implement the integration of a prototype device into a beamline data acquisition system. Familiarity with condensed-matter physics or materials science is an asset. Candidates should send a *curriculum vitae* including names and addresses of three references to **Dr. D.P. Siddons, NSLS, Bldg. 725B, or Dr. G.C. Smith, Instrumentation Division, Bldg. 535B, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973-5000, before APRIL 15, 1997.** BNL is an equal opportunity employer committed to workforce diversity.



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