

People and things

Sir William Mitchell (UK) is the new President of CERN Council.

Laboratory correspondents

Argonne National Laboratory, USA
M. Derrick

Brookhaven National Laboratory, USA
A. Stevens

CEBAF Laboratory, USA
S. Corneliussen

CERN, Geneva
G. Fraser

Cornell University, USA
D. G. Cassel

DESY Laboratory, Fed. Rep. of Germany
P. Waloschek

Fermi National Accelerator Laboratory, USA
M. Bodnarczuk

GSI Darmstadt, Fed. Rep. of Germany
G. Siegert

INFN, Italy
A. Pascolini

IHEP, Beijing, China
Qi Nading

JINR Dubna
B. Starchenko

KEK National Laboratory, Japan
S. Iwata

Lawrence Berkeley Laboratory, USA
B. Feinberg

Los Alamos National Laboratory, USA
O. B. van Dyck

NIKHEF Laboratory, Netherlands
F. Ern 

Novosibirsk Institute, USSR
V. Balakin

Orsay Laboratory, France
Anne-Marie Lutz

PSI Laboratory, Switzerland
J. F. Crawford

Rutherford Appleton Laboratory, UK
Louise Hall

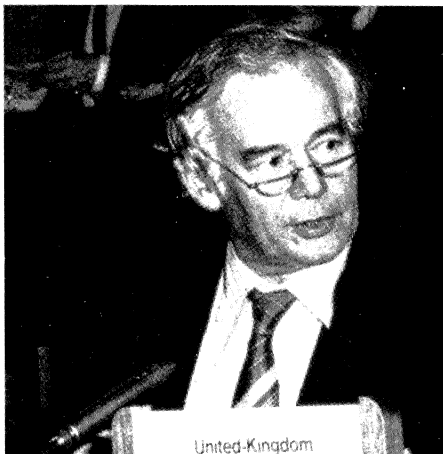
Saclay Laboratory, France
Elisabeth Locci

IHEP, Serpukhov, USSR
Yu. Ryabov

Stanford Linear Accelerator Center, USA
M. Riordan

Superconducting Super Collider, USA
N. V. Baggett

TRIUMF Laboratory, Canada
M. K. Craddock



CERN Council

At its December meeting, CERN Council took a number of important decisions, in addition to admitting Poland as the Organization's 16th Member State (see this page).

After a report of studies organized by the European Committee for Future Accelerators (ECFA), Council reaffirmed its conviction that the LHC Large Hadron Collider should be CERN's next major project, with formal approval foreseen for 1992.

Sir William Mitchell (UK) was elected Council President for the coming year, with Pierre Lehmann (France) and Mrs. Birgitte Sode-Mogensen (Denmark) as Vice-Presidents.

At CERN, Kurt H bner becomes Head of PS Division, succeeding Roy Billinge, Willem Middelkoop becomes Head of Personnel Division, succeeding Georges Michel, and Bastiaan de Raad becomes Head of the Technical Inspection and Safety Commission, succeeding Keith Potter.

Poland joins CERN

Delegates at CERN's Council meeting in December voted unanimously to admit Poland as the Organization's 16th Member State. Finland became the 15th Member State on 1 January, and the Polish flag will officially go up on 1 July.

CERN is the first Western European organization which Poland has joined, while Poland will become CERN's first Member State from outside Western Europe. Informal negotiations are already underway with Czechoslovakia, Hungary and Yugoslavia.

On people

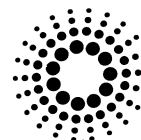
The American Physical Society's Panofsky Prize goes to Gerson Goldhaber of Berkeley and Fran ois Pierre of Saclay for their 1976 discovery of charmed (D) mesons at the SPEAR electron-positron ring at Stanford.

Abdus Salam, Director of the International Centre for Theoretical Physics, Trieste, and President of the Third World Academy of Sciences, has received the Catalonia Prize from King Juan Carlos of Spain.

Stanley Wojcicki of Stanford becomes Chairman of the US High Energy Physics Advisory Panel (HE-PAP), taking over from Francis Low of MIT.

Kaoru Yokoya of the Japanese KEK Laboratory's Accelerator Department has been awarded the 36th Nishina Memorial Prize for his distinguished theoretical work on beam-beam interactions and polarization phenomena in high energy accelerators in general and for a li-

EUROPEAN SYNCHROTRON RADIATION FACILITY GRENOBLE – FRANCE



The Machine Division is charged to design, to operate and develop the accelerator complex of the facility. As part of this Division, the Insertion Devices Group is in charge of all the development of the Insertion Devices (IDs). IDs are essentially very precise magnetic systems made of permanent magnets and coils.

We are recruiting an :

Engineer specialized in Magnets

for the design, procurement, magnetic field measurement, installation and commissioning of permanent magnet & electromagnet systems

Qualifications & Experience : The suitable candidate should be educated to at least Chartered Engineering Degree level. He/she should have a sound knowledge in at least two of the following fields :

- magnetic field design and computation;
- project management and electro-mechanical design of high precision devices;
- superconducting magnets and cryogenic technology;
- programming in C or any other language is essential.

The working language in ESRF is English. Knowledge of French is desirable.

Our Offer : ESRF offers you an interesting opportunity in an international atmosphere, and with high technology equipment. New staff coming from outside the Grenoble area benefit from Installation Allowances, Non-French staff also benefit from Expatriation Allowances ; salaries and other extra legal advantages should be attractive.

Please state your name, address and the reference number to us in Grenoble, and we shall provide you with an 'Application Form' to be returned before 30 March 1991.

ESRF, Personnel Office – Ref. 4119/91, BP 220, F-38043 Grenoble Cedex, France

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The Physics Department of the Massachusetts Institute of Technology invites applications for a faculty position at the Assistant Professor level in the area of Experimental Relativistic Heavy Ion Physics. The Department currently has an active group in this field, and we are looking for someone who will play a major role in preparing for and exploiting the opportunities which will come with the completion of RHIC. The background of such a person could include experience in nuclear or particle physics. While we do anticipate making the appointment at the Assistant Professor level, an appointment at a more senior level is not precluded for an exceptionally well-qualified candidate. Applicants should submit a curriculum vitae publications list, and have three letters of reference sent directly to:

Prof. R. P. Redwine
Chairman, Search Committee
Room 26-453
Physics Department
Massachusetts Institute of Technology
Cambridge, MA 02139 USA

All materials should arrive before April 1, 1991.

M.I.T. is an Affirmative Action/Equal Opportunity employer and solicits applications especially from qualified women and minorities.

Princeton University



Accelerator Engineer

Princeton University seeks an experienced accelerator engineer, or a high level technician with equivalent experience, for development and maintenance of the Princeton AVF Cyclotron. The cyclotron is a K=50 accelerator which produces protons and other light ion beams for the nuclear physics research program at Princeton. Experience with all aspects of the operation of a low energy nuclear physics accelerator is highly desirable, including high power rf electronics, power supplies, computerized control systems, ion sources, and beam transport systems. The successful candidate will be expected to supervise a small technical staff and provide support to student and faculty researchers. Engineering or physics A.B., or equivalent laboratory experience is required. Send resume and references to Professor Frank Calaprice, Department of Physics, Princeton University, P.O. Box 708, Princeton NJ 08544.

Princeton is an equal opportunity/affirmative action employer.

near collider in particular. This prize is awarded annually in memory of Yoshio Nishina, a pioneer of atomic and nuclear physics in Japan.

At Brookhaven Theo Sluyters has been appointed Acting Deputy Chairman of the AGS Department, and Bill Weng has been appointed Head of the Accelerator Division of the AGS Department.

Robert Hofstadter 1915-1990

Electron scattering pioneer Robert Hofstadter died on 17 November, aged 75.

His promising career was interrupted by World War II, when he worked for the US National Bureau of Standards and helped develop proximity fuses for anti-aircraft shells. After the war, he recommenced research work at Princeton, where he discovered the potential of sodium iodide as a scintillator and went on to exploit its use in detectors.

In 1950 he moved to Stanford, where W.W. Hansen and his talented team were developing their famous series of linear machines to accelerate electron beams. Mark III was delivering 180 MeV electrons by 1951, while Hofstadter had initiated a comprehensive programme of research to exploit the new beams, scattering electrons off nuclei.

From 1953, these experiments displayed clearly the now well known spectra indicative of nuclear structure. With the linac energy boosted to 600 MeV, he moved his attention to smaller nuclei and the proton itself. For the first time, it became clear that the proton and the neutron are not point particles, but their electric and magnetic properties are smeared out, and could

be described by 'form factors'.

In addition to paving the way for subsequent higher energy studies which went deeper inside the proton and revealed its constituents, these experiments hinted at other new behaviour, heavy mesons such as the omega and rho particles. For this epic work on nuclear and nucleon structure Hofstadter shared the 1961 Nobel Prize with Rudolf Mössbauer.

These new insights made Stanford a mecca for young experimenters, among them the talented trio of Jerome Friedman, Henry Kendall and Richard Taylor who went on to demonstrate that the proton had a substructure, a feat which earned them the 1990 Nobel Physics Prize.

With electrons proving such efficient probes, Hofstadter pushed for the construction of the largest possible such machine. Under the guidance of first Edward Gintzon and then W.K.H. Panofsky, this project evolved into the mighty Stanford Linear Accelerator Center, a national US Laboratory which outgrew its university origins.

In later years Hofstadter made valuable contributions to angiography, using radioactive tracers to monitor heart functions.

Science for Peace

The first Ettore Majorana (Erice, Sicily) Science for Peace Prize has been awarded in three equal parts to Edward Teller, to Viktor Weisskopf, and in memory of the late P.A.M. Dirac, P.L. Kapitza and A.D. Sakharov (received by Mrs. M. Dirac, Mrs. A. Kapitza and Mrs. E. Bonner Sakharova).

The Ettore Majorana Centre for Scientific Culture in Erice is directed by Antonino Zichichi.

Zbigniew Bochnacki 1935-1990

Zbigniew Bochnacki, Director of the H. Niewodniczanski Institute of Nuclear Physics, Krakow, died on 30 September. As a theoretical nuclear physicist he made important contributions to the theory of nuclear structure, and his contribution to understanding spin-spin interaction and its influence on magnetic moments of nuclei or to the theory of the so-called 'scissor' modes of nuclear transitions and collective motion is well known and highly appreciated.

As the Director of the Institute of Nuclear Physics in Krakow from 1977 until his death he was active in establishing and promoting strong links between the Institute and CERN.

David Gray retires

After having been at the centre of accelerator developments and operations at the UK Rutherford Appleton Laboratory for 35 years, David Gray retired last year. He is succeeded as the Laboratory's Associate Director, Science, by Bob Voss, one-time Deputy Director of the Daresbury Laboratory and formerly Head of the UK Science and Engineering Council's Engineering Division.

Too hot to handle

Now available in the UK (published by W.H. Allen) is 'Too Hot to Handle', a new book by theorist and author Frank Close on the history of the cold fusion claims which burst on an unsuspecting world in March 1989.

Faculty Positions In High Energy Physics

UNIVERSITY OF TEXAS AT ARLINGTON

The Department of Physics invites applications for two faculty positions beginning in Fall 1991. UT Arlington is the second-largest University in the University of Texas System. It is located at the heart of the Dallas-Fort Worth Metroplex amidst a concentration of high technology industries and within a short commuting distance of the SSC Laboratory. The University is committed to building a strong relationship with the SSC and has plans for a substantial build-up in SSC-related research Over the next few years. Planning for a refurbished and enlarged physics building to accommodate this development are already at an advanced stage. The positions presently available are for a tenured Full Professorship and a tenure-track position at the Assistant or Associate level. We are looking for candidates with an existing involvement in future work at the SSC. The successful candidate for the senior position will be expected to play a leading role in determining the pattern of further faculty, support staff and student recruitment and in development of research and teaching programs. The levels of start-up funding and salaries will be competitive.

Persons interested in these positions should forward promptly a letter of application together with a resume and the names of three references to: **The Chair of the Search Committee, Department of Physics, Box 19059, The University of Texas at Arlington, Arlington, TX 76019.**

The University is an Equal Opportunity, Affirmative Action Employer and women and minority candidates are encouraged to apply.

Postdoctoral Positions Nuclear and High Energy Physics

The Physics Department at Lawrence Livermore National Laboratory has challenging openings at the postdoctoral level in several of its new programs in experimental and theoretical nuclear physics and experimental particle physics. Included are opportunities to participate in new research areas ranging from particle physics at the Superconducting Super Collider, to relativistic heavy ion collisions at Brookhaven National Laboratory, to electronuclear studies at Stanford Linear Accelerator Center. There are also many opportunities to contribute to theoretical studies of nuclear many-body physics and to participate in experiments to search for shape isomers and superdeformed nuclei. In all of these areas, exceptional candidates will have wide latitude to pursue independent research directions supported by LLNL research groups within major international collaborations.

Successful applicants will be encouraged to initiate their own creative research programs in addition to participating in ongoing projects. Applications for outstanding recent PhD graduates in theoretical and experimental nuclear and high energy physics will be welcome. U.S. citizenship is preferred.

Salary and fringe benefits are very competitive. To apply, please send a resume, a brief statement of research interests and three letters of reference to: **Barbara Tuck, Lawrence Livermore National Laboratory, P.O. Box 5510, L-725, Dept. A90446, Livermore, CA 94550.** An equal opportunity employer.

University of California



Université de Montréal

Professeur ou professeure en physique des hautes énergies

Le **Département de physique** de la Faculté des arts et des sciences sollicite des candidatures de haut niveau pour combler un poste de professeur ou professeur adjoint en physique expérimentale des hautes énergies.

Fonctions

Enseignement et direction d'étudiants; collaboration et prise de responsabilités dans le cadre du projet OPAL (auprès de LEP).

Exigences

Deux années de stage postdoctoral; très bonne connaissance de la physique de QCD et de l'instrumentation des chambres à fils (systèmes d'acquisition de données, analyse de données, reconstruction de traces, etc.);

publications démontrant une contribution significative aux projets de recherche; maîtrise de la langue française.

Entrée en fonction

Prévue pour le 1^{er} juin 1991.

Les personnes intéressées doivent faire parvenir leur curriculum vitae, trois lettres de recommandation ainsi que des copies des tirés-à-part de leurs dernières publications, **au plus tard le 1^{er} avril 1991 à:**

M. Jean-Robert Derome
Directeur
Département de physique
Université de Montréal
C.P. 6128, succursale A
Montréal (Québec)
H3C 3J7

Conformément aux exigences prescrites en matière d'immigration au Canada, cette annonce s'adresse aux citoyens canadiens et aux résidents permanents.

(0293-3)

Last last year saw the 60th birthday of two eminent Geneva theorists – Henri Ruegg (left) and Raoul Gatto.

60th birthdays

Late last year several distinguished theoreticians based in and around CERN celebrated their 60th birthdays.

In November, a symposium 'Theoretical Particle Physics at the Beginning of the 90s' at the University of Geneva honoured Henri Ruegg and Raoul Gatto, who have spent most of their careers at Geneva and have helped build up the close collaboration between the University and CERN.

Another symposium, held at CERN, honoured Torlief Ericson, who personifies the bridge between nuclear and particle physics. With his strong intuitive approach based on a deep understanding of many branches of physics, he has made many fundamental contributions, and his involvement in what has become known as the 'PANIC' (Particles and Nuclei International Conference) series helped establish intermediate energy physics on the international research scene.

1991 JINR-CERN School of Physics

After a very successful CERN School of Physics in September in Palma de Mallorca, attended by students not only from the Member States but also Eastern Europe and Canada, the programme for the next JINR-CERN School has just been published. This will take place from 5-18 May in Alushta, Crimea, USSR. The topics covered will include Field Theory, Electroweak Interactions, QCD, Beyond the Stan-

Torlief Ericson receives his 60th birthday Festschrift from Achim Richter of Darmstadt.

(Photos Maurice Jacob)



Faculty Position in Experimental Particle Physics

York University

Applications are invited for a tenure track appointment as assistant or associate professor in the Department of Physics and Astronomy at York University. Applicants should have a Ph.D in physics, and postdoctoral experience with experimentation at high energy colliding beams. The successful candidate will be expected to pursue an active international career in experimental high energy particle physics, and to teach and supervise undergraduate and graduate students. York experimenters are currently helping construct the ZEUS ep collider experiment to search for quark and electron substructure at DESY in Hamburg, and are helping design SDC, to search for the Higgs boson at the new energy frontier provided by the TeV Superconducting Super Collider in Texas.

Applications should be sent to Professor Roman Koniuk, Appointments Committee Chair, York University, 4700 Keele Street, North York (Toronto), Ontario M3J 1P3. Deadline: 91/3/31. (Tel: 416-736-2100 Ext. 66480)

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian Citizens and permanent residents of Canada. York University has a policy of employment equity, including affirmative action for women faculty. This position is subject to final budgetary approval.

GROUP LEADER FAST ANALOG ELECTRONICS

The Continuous Electron Beam Accelerator Facility in Newport News, Virginia is searching for an electrical engineer or physicist to establish and lead a group charged with developing fast analog front end electronics to be utilized with various particle detectors. These detectors will be employed in the nuclear physics research program to be carried out at the 4 GeV superconducting electron accelerator now under construction.

Required is an applicable degree plus several years experience in development of such circuits for use in physics research. Additional experience in obtaining small scale industrial production of them would be useful. The group will be part of the CEBAF Physics Division and will be expected to work closely with the physicists developing the detectors.

We offer a very competitive total compensation package and a stimulating work environment.

For prompt consideration, please send resume, specifying position number PR3102, with salary history to: **Employment Manager, CEBAF, 1200 Jefferson Avenue, Newport News, VA 23606.**

CEBAF

The Continuous Electron Beam Accelerator Facility

An Equal Opportunity, Affirmative Action Employer.

DEPUTY GROUP LEADER PHYSICIST

Join Argonne National Laboratory in the construction of its 7-GeV Advanced Photon Source (APS) Project. —A Project that will contribute to the development of new materials and impact industries worldwide.

Argonne is seeking a Physicist to provide physics design, analysis and testing of ultra-high vacuum systems for the APS particle storage ring, synchrotron and other associated sub-systems. Candidate will also impart ideas and perform analytical/experimental procedures for the surface preparations of the APS vacuum chamber systems, and be responsible for the program of vacuum R&D as well as Deputy Group leader of the Vacuum/Mechanical Engineering Group.

A Ph.D. in Physics and at least ten years experience in accelerator vacuum chamber systems are required. Extensive knowledge of ultra-high vacuum physics and technology, surface physics and experimental techniques of surface science, and safety practices is necessary.

Outstanding challenges and an excellent compensation package are available. For confidential consideration, please forward resume to **Walter D. McFall, Box J-APS-0005-88, Employment and Placement, ARGONNE NATIONAL LABORATORY, 9700 South Cass Avenue, Argonne, IL 60439, USA.** Argonne is an equal opportunity/affirmative action employer. (Use your PC to learn more about ANL and other available opportunities. Dial (508)263-3857 and key in the password ARGON.)



Installation of the uranium-scintillator calorimeter started recently for the Zeus detector at the HERA electron-proton collider soon to be commissioned at the DESY Laboratory in Hamburg. The picture shows the first modules of the forward calorimeter in place in front of the solenoid.

dard Model, Heavy Flavours and CP Violation, and Detectors; with additional lectures on collider physics, LEP results and astrophysics.

Further information from Miss S.M. Tracy, CERN School of Physics, CERN/DG, CH 1211 Geneva 23, Switzerland, e-mail tracy at cernvm.cern.ch, telex 419000 cerch, phone + 41 22 767 27 24, fax + 41 22 782 30 11; or Mrs. T.S. Donskova, International Department, Joint Institute for Nuclear Research, 141980 Dubna, USSR, telex 412621 dubna su, phone +7 095 9262251/9262278, fax +7 095 2002283. Applications should be made immediately.

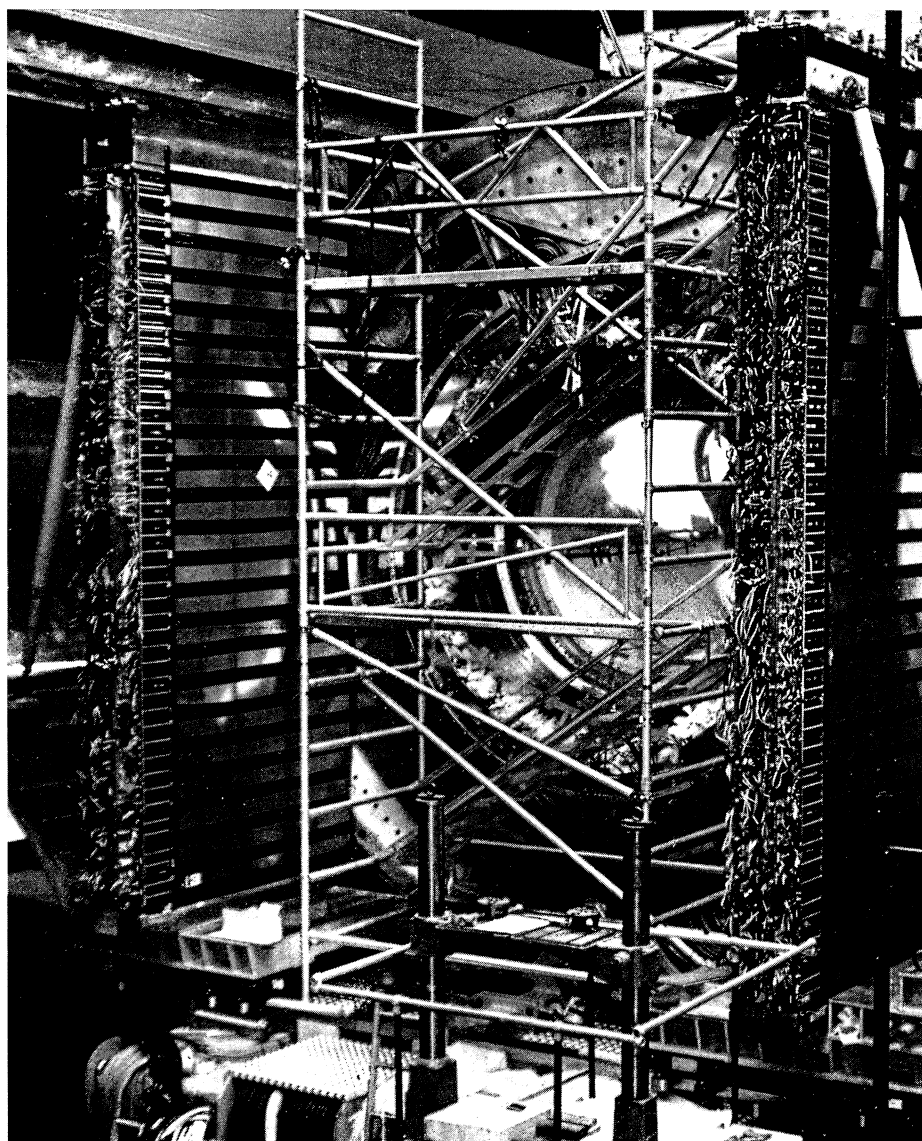
Fortran 90 book

The success of Fortran as the major programming language for scientific and numerical computing goes hand in hand with the steady evolution of the language. The X3J3 technical committee has worked in conjunction with an ISO committee to develop a new standard, Fortran 90, incorporating new features for supercomputer applications but retaining all the cherished ones.

A complete description is in a new book, *Fortran 90 Explained*, by Michael Metcalf of CERN and John Reid (Oxford University Press, 0-19-853772-7).

Pisa Semester

Called *Infinite Dimensional Algebras and Algebraic Geometry*, an International Semester, organized by Corrado De Concini and Victor Kac, will be held from January to June at the Scuola Normale Superiore in Pisa, with most activity in March, April and May. Topics covered will



include *Infinite Dimensional Algebra and Algebraic Geometry*, *Geometry of the Moduli Space of Riemann Surfaces*, *Conformal Field Theory and String Theory*, *Quantum Groups*. Further information from Caterina D'Elia, Secretariat, Scuola Normale Superiore, Pisa, tel (+39) 50 597111, fax (+39) 50 563513.

Desktop synchrotrons

Compact synchrotron light sources are in demand for X-ray microlithography of a new generation of compact computer chips. IBM contracted Oxford Instruments to supply such a 'desktop' machine, while work at the US Brookhaven Laboratory is geared to developing a superconducting machine to supply 700 MeV beams.

A recent Brookhaven success was accelerating an electron beam, supplied by the booster also used for the US National Synchrotron

Light Source, in a 200 MeV prototype compact synchrotron using room temperature magnets and measuring just four metres long and two across.

Correction

Particles and Fields '91, sponsored by the Division of Particles and Fields of the American Physical Society and the Division of Particle Physics, Canadian Association of Physicists, will be held from 18-22 August at the University of British Columbia, Vancouver. Contact PF91 Secretariat, TRIUMF, 4004 Wesbrook Mall, Vancouver, BC, Canada V6T 2A3, tel (604) 222-1047, fax (604) 222-1074, bitnet pf91 at triumfcl.



Ruprecht - Karls - Universität Heidelberg
Fakultät für Physik und Astronomie

The Department of Physics and Astronomy at the University of Heidelberg is currently seeking candidates for two faculty positions :

The **Institut für Hochenergiephysik** has a position open for a
Full Professor in Experimental Physics (C4)

The position is available immediately and is part of the 'Fiebigler Programme'. Under this programme, candidates should be under 45 years of age at the time of nomination.

The **Physikalisches Institut** has a position open for a
Full Professor in Experimental Physics (C4)

Present areas of research at the Institute are Elementary Particle Physics, Nuclear Physics and Atomic Physics. The position will be available on 1 September 1991.

Candidates for both positions are expected to contribute both to research and to the general teaching programme of the Faculty. Applications comprising the standard documents should be sent to :

Dekan
Fakultät für Physik und Astronomie
Albert - Überle - Str. 11
D W-6900 Heidelberg 1

The deadline for receipt of applications is 1 March 1991.

The Faculty is trying to increase the number of women in research and teaching. Women candidates are therefore encouraged to apply.

Third Annual 1991 International Industrial Symposium on the Super Collider (IISSC)



Atlanta Hilton and Towers
Atlanta, Georgia, USA
March 13-15, 1991

IISSC promotes discussion among scientific, administrative, legislative, and industrial partners in the Superconducting Super Collider (SSC) program, emphasizing the SSC's goals, technical challenges, and industrial opportunities.

Topical areas to be discussed at the symposium:

Accelerators	Accelerator Systems and Control
Computation and Data Bases	Conventional Construction
Cryogenics	Detectors
Education	Environment, Safety, and Health
Magnets	Markets for SSC Technology
Materials	Project Management and Systems Engineering
Role of Industry in the SSC	Superconductors

EXHIBITS information can be obtained from Dr. Eric Gregory, c/o IGC Advanced Superconductors Inc., 1875 Thomaston Avenue, Waterbury, CT, USA 06704, FAX (203) 753-2096

SYMPOSIUM information can be obtained from Ms. Pamela E. Patterson, Conference Manager, IISSC, P.O. Box 171551, San Diego, CA, USA 92197, FAX (619) 490-0138

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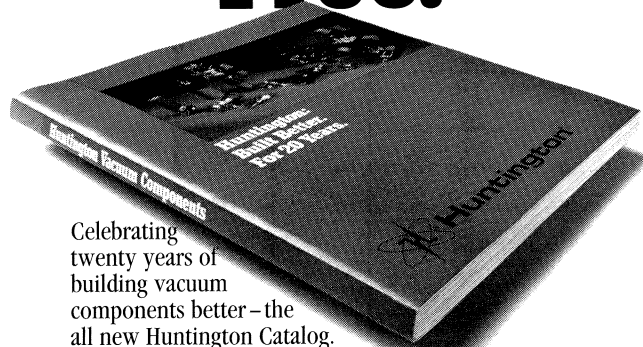
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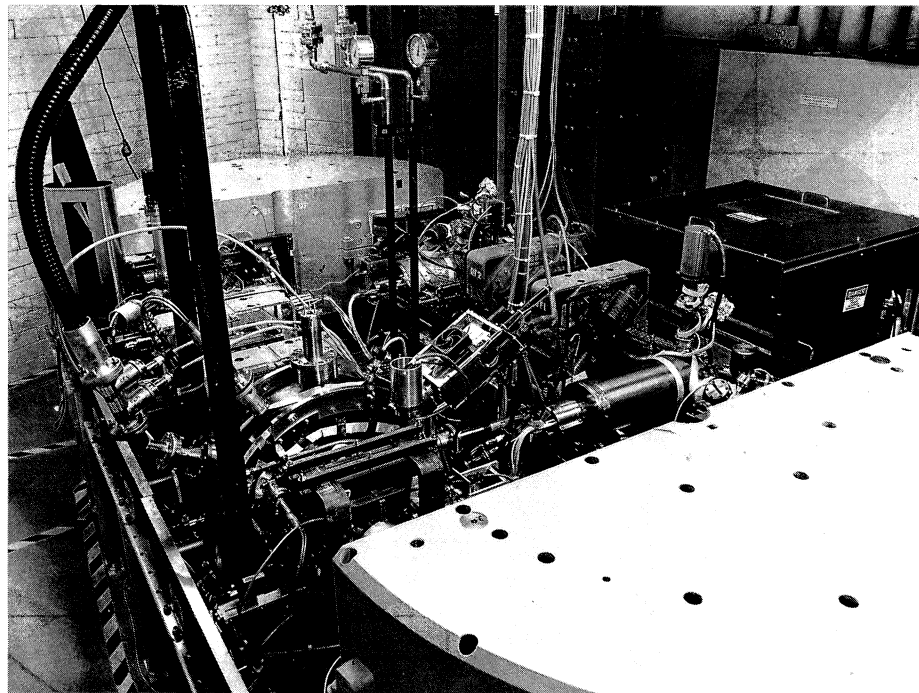
Francis Muller 1925-1991

With deep regret we learnt of the death of our dear friend and colleague Francis Muller on 1 January.

Francis came to CERN in 1962 from Leprince-Ringuet's Laboratory at the Ecole Polytechnique, Paris, where he had been working as part of the internationally-known group led by Bernard Gregory and Charles Peyrou. This group operated a cloud chamber at the Pic du Midi in the Pyrenees and made significant contributions to particle physics in the productive 1950s. During this time he spent a sabbatical year with Oreste Piccioni's group at the Berkeley Bevatron, where he made an important contribution to the problem of neutral kaon regeneration.

At CERN he joined the bubble chamber group and after helping to set up the first medium energy electrostatically separated beam at the CERN PS, concentrated on hyperon-antihyperon production by 3-4 GeV antiprotons in the Saclay 80cm hydrogen chamber. In particular he directed analysis leading to the discovery of an anti- Λ . Subsequently he worked with Max Ferro-Luzzi on resonances in positive kaon-proton reactions.

In 1971 he turned his attention to electronic techniques, participating in several ISR experiments with Carlo Rubbia, and helped in pioneer studies of the mass spectrum of the charmed lambda baryon. With the advent of the SPS proton-antiproton collider, he was part of Carlo Rubbia's UA1 collaboration which discovered the W and Z bosons. From 1984 he worked in a group studying charm and beauty production at the Omega spectrometer, also spending a year at SLAC, where he worked on beauty



lifetime and B-meson mixing measurements with the MAC group.

In all these experiments, he brought his deep knowledge of physics and a mathematical prowess to help ensure their success. His love of nature and his extensive culture, particularly in history with his phenomenal memory, were much appreciated by all who had the fortune to know him. He was awarded the 'Legion d'honneur'.

His passing leaves a hole in our lives which cannot be filled.

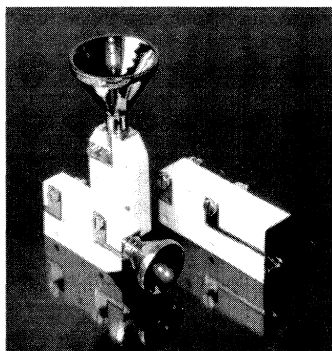
His friends

Just four metres long and two across, this prototype synchrotron at Brookhaven is designed to provide 200 MeV electron beams, en route to a final 700 MeV superconducting machine for X-ray microlithography of compact computer chips.

17 keV neutrino?

Several laboratories report sighting evidence for a heavy 17 keV neutrino.
More news next month.

CHANNEL ELECTRON MULTIPLIERS SERIES KBL



a glass ceramic design for the detection of ions, electrons, vacuum ultra-violet and soft x-rays.

The CEM KBL series detectors combine the advantage of a ceramic body - close tolerance and extreme resistance to breakage - with the superior properties of lead glass.

- gain (at 2.5 kV), typ. $\sim 1 \times 10^6$
- dark count rate, typ. < 0.02 cps
- max. counting rate $\sim 2 \times 10^6$ cps

We manufacture 10 standard CEM models with funnel-shaped openings ranging in size from 1.2 x 10mm (rectangular) to 15mm OD (round) or according to customer specifications.

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CERN COURIER is the internationally recognized news magazine of high energy physics. Distributed to all the major Laboratories of the world active in this dynamic field of fundamental research, it is compulsive reading for scientists, engineers, administrators, information media and buyers. Written in simple language and published simultaneously in English and French it has become the natural communication medium for particle physicists in Europe, the USA, the Soviet Union, Japan—everywhere where the fundamental nature of matter is studied.

Published from CERN, Switzerland, it also has correspondents in the Laboratories of Argonne, Berkeley, Brookhaven, Cornell, Fermi, Los Alamos and Stanford in the USA, Darmstadt, DESY and Karlsruhe in Germany, Orsay and Saclay in France, Frascati in Italy, Rutherford in the U. K., PSI in Switzerland, Serpukhov, Dubna and Novosibirsk in the USSR, KEK in Japan, TRIUMF in Canada and Beijing in China.

The annual expenditure on high energy physics in Europe is about 1600 million Swiss francs. The expenditure in the USA is about \$ 800 million. There is also considerable expenditure in the Soviet Union.

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CES NEWS :

- VME Multi-crate Link with Reflective Memories (VIC 8251)
- Real-time UNIX for VME processors (FIC + RAID)
- Bi-processor VME 68040 CPU (FIC 8234)

**These elements
are integrated in a
modular data
acquisition system
for physics**

VME Multi-crate link with Reflective Memories:

CES is the original creator of this link and has already several products based on it, including interfaces to IBM-PC, Mac-Nubus, Sun S-Bus, and EISA-bus.

The reflective memory concept has been implemented for applications where big data buffers must be shared by several processors distributed over several VME crates. When a CPU writes (reads) to (from) the reflective memory, data are transparently up-dated all over the link and written at the same time in every memory.

Real-time UNIX for VME processors (FIC+RAID):

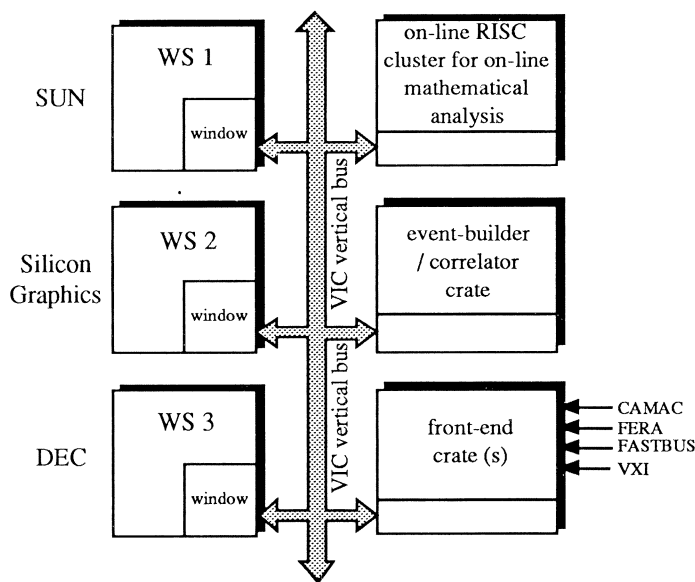
These processors are equipped with similar facilities (VME / VSB interfaces, communication FIFOs, dual-port memories) as the acquisition processors, using RISC or CISC based architecture and large global memories. They conform to the IEEE POSIX Full Use interface definition (1003.1) and will conform to the POSIX real-time extensions (P1003.4). They are compatible with the two leading flavours of UNIX: AT&T System V and Berkeley 4.3 BSD.

Bi-processor VME 68040 CPU:

The FIC 8234, developed by CES, is based on 2 MC68040 for real-time applications.

When they execute program internally on their on-chip 4K data and 4K instruction caches, they operate at full speed in parallel. The System Memory provides 8 Mbytes up to 128 Mbytes of DRAM. The burst mode operates at 80 Mbytes/sec in write mode, and at 57 Mbytes/sec in read mode (@25 Mhz). As a standard CPU on the market the FIC 8234 incorporate Ethernet, RS232, SCSI VME / VSB Master / Slave, Timers, RTC, Memory back-up,...

Thanks to the cache-coherency of the 68040 and special logic, the FIC 8234 can share different areas of data also with other VME / VSB CPUs.



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①

②

Degrader for High Voltage

Concerned in the case of this component is a voltage divider for the pilot experiment of «LEP-DELPHI» resp. BARREL RICH.

- ① Entire component from outside with visible electrode no. 30.
- ② Enlarged section through the electrode parts.

In a series of preliminary development stages it has been successful, to break down a defined voltage of 210 KV over 30 graded built-in electrodes.

Isolating distance between the electrodes is 0.7 mm.

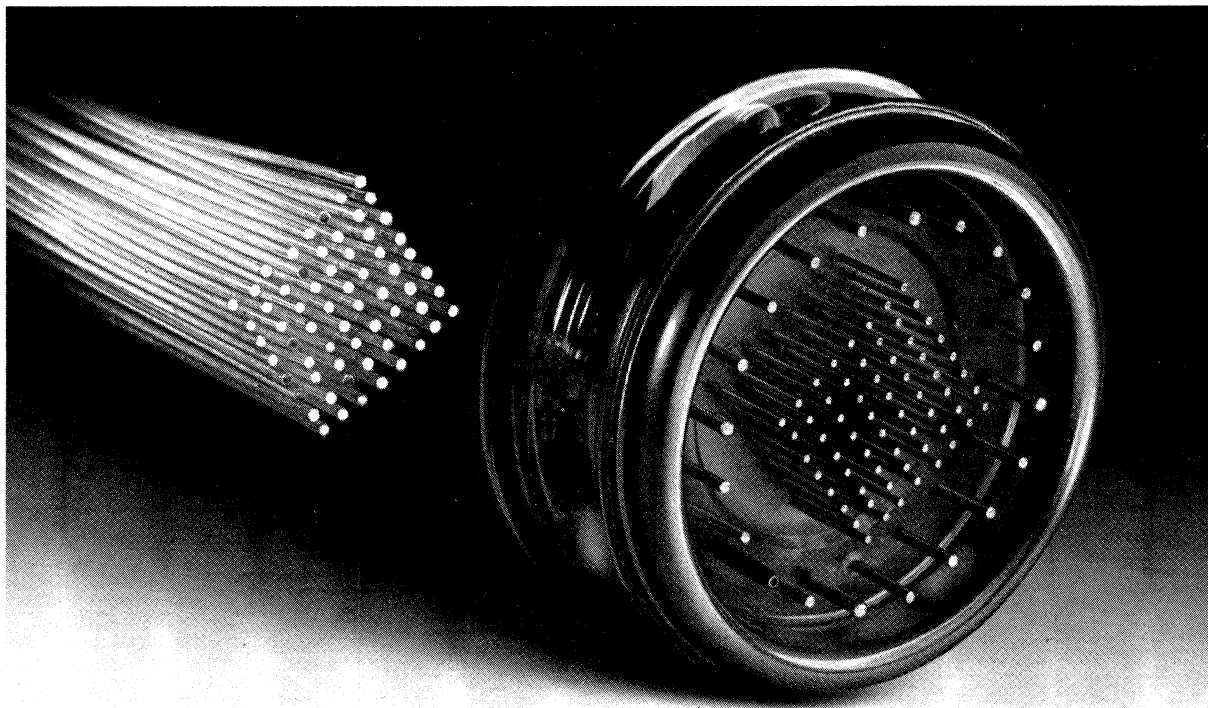
The entire component was produced by the high-vacuum process.



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G	10^6 at 1400 V
t_r	4.8 ns at 1400 V
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crosstalk	<5% (scanned by 50 μ m light spot)

XP4702 opens new opportunities in fibre readout, hodoscopy, calorimetry and coarse imaging. Reference: NIM A269 (1988) 246-260.



Fibres courtesy of Optelectron, France.

For more information contact: Philips Components, Building BAF2, 5600 MD Eindhoven, The Netherlands. Telex 35000 phtcnl/nl jeveo.

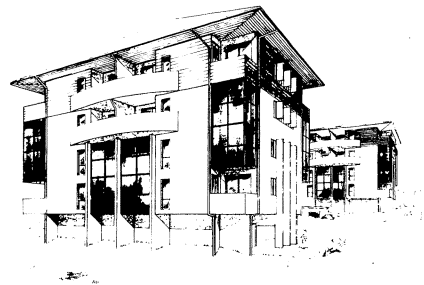
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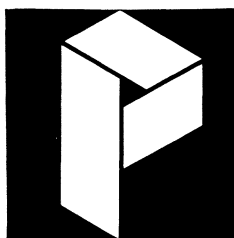
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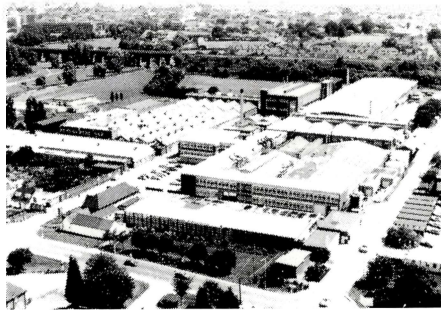
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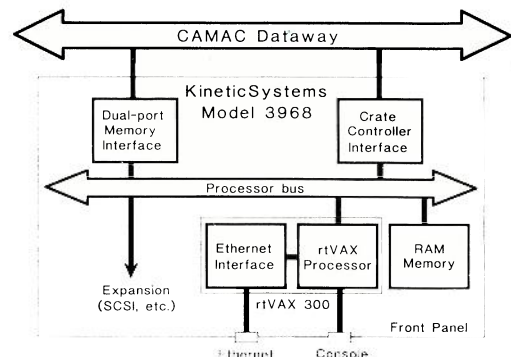
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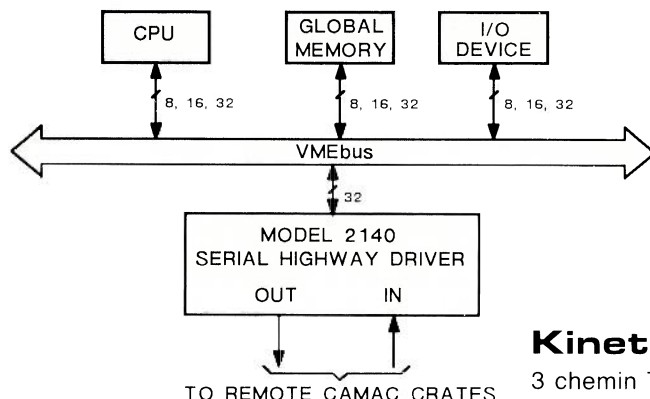
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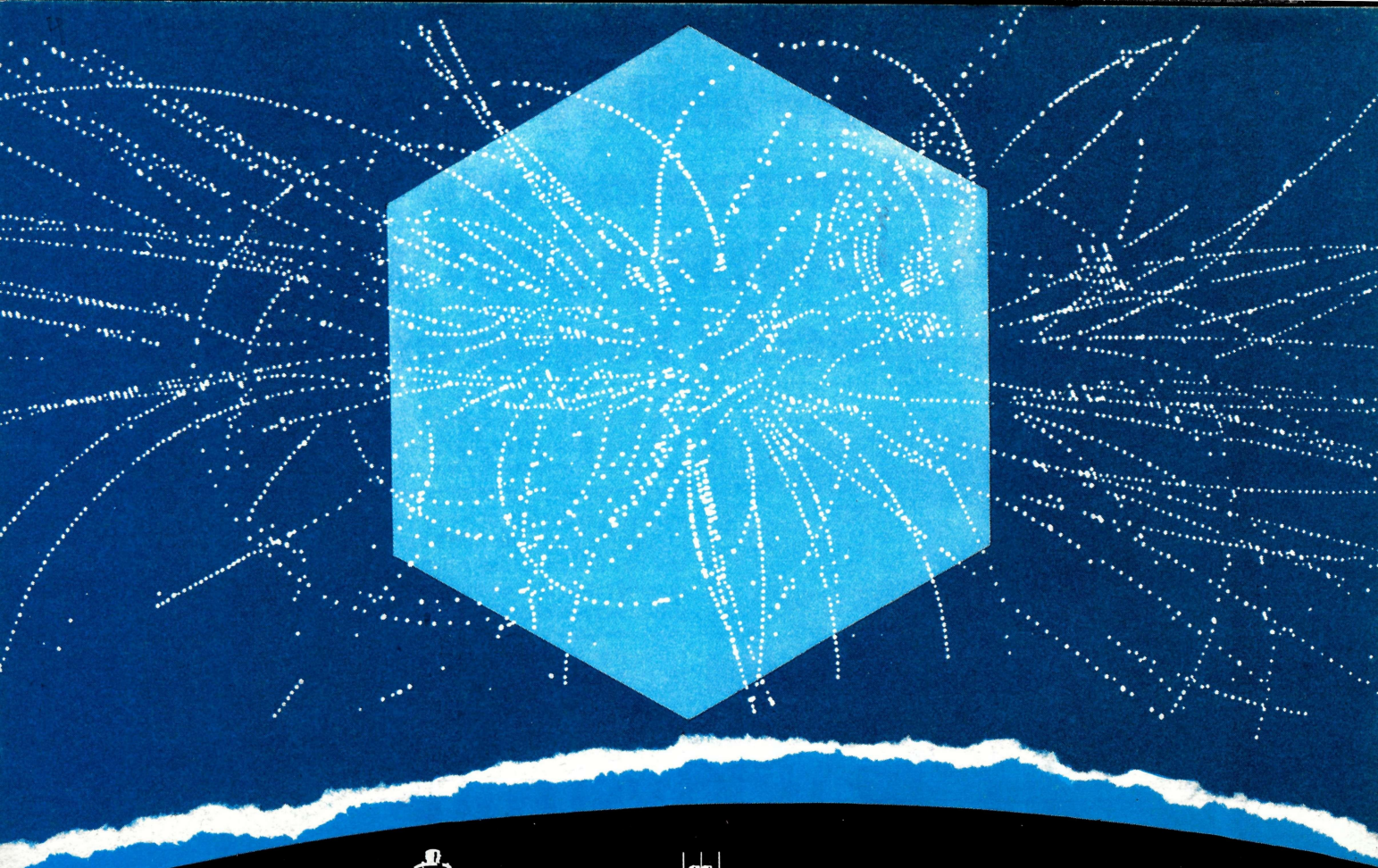
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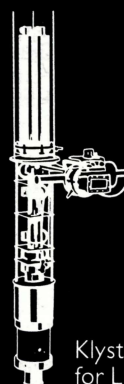
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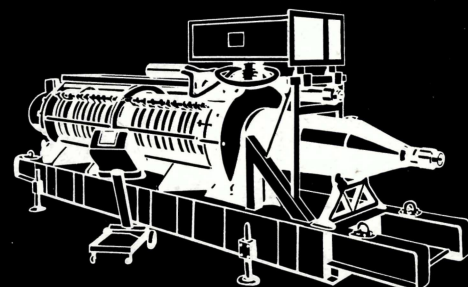
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