

People and things

At work at the CLEO detector at Cornell. Twin Rochester graduate students Joan and Jan Guida check the electronics for the magnet pole tip shower counter. Visible between them is part of the system for moving the pole tip.

(Photo Cornell)

On people

The prestigious Wolf Physics Prize goes this time to Leon Lederman of Fermilab and Martin Perl of SLAC. With their important contributions to the discoveries of the μ on particle and the tau lepton respectively, these eminent physicists played an important role in shaping our present picture of the underlying quark/lepton picture of the structure of matter.

CERN Director General Herwig Schopper was the speaker at the latest Shulamit Goldhaber Memorial Lecture, an important annual event at Tel Aviv University. The lectures began back in 1965 after Berkeley colleagues of the late Shulamit Goldhaber set up a scholarship for a particle physics graduate student at Tel Aviv. Over the years, these lectures have attracted an impressive list of speakers to Tel Aviv.

Gerson Goldhaber of Berkeley has been elected a Foreign Member of the Royal Swedish Academy of Sciences, an honour reserved so far for only 115 non-Swedes.

'Fortran Optimization' is the title of a new book by Michael Metcalf of CERN, published by Academic Press as part of a series on studies in data processing.

CERN on TV

At the end of January, British TV audiences had a chance to see the film 'The Geneva Event', made by the BBC/Open University team in collaboration with CERN. This film covers the history of the big UA1 experiment at the proton-antiproton collider at the CERN SPS ring. Filming started in 1979 soon after the inception of the experiment,



and followed the progress of construction, installation, testing, data-taking, and presentation of the initial results.

B mesons at Cornell

As reported in the January/February issue (page 5), the CLEO group working at Cornell's CESR electron-positron ring have succeeded in reconstructing B mesons. This is the first direct observation of particles openly carrying the new beauty (bottom) quantum number.

This was achieved thanks to high electron-positron collision luminosities and running the machine at a collision energy band near the fourth ψ resonance.

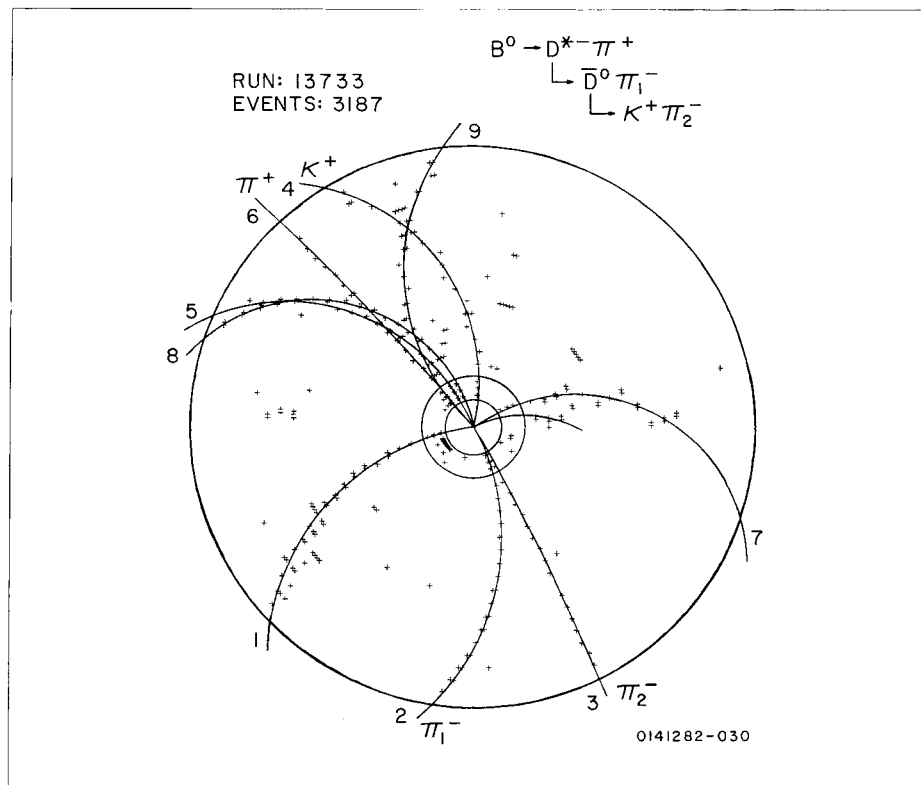
The ψ 's are considered to be bound states of quarks and antiquarks carrying beauty, but the fourth ψ level (about 10.5 GeV) is the first which has enough

energy to decay directly into B mesons.

The B mesons were tracked down through a detailed analysis of their subsequent decays, a high proportion of which involve charmed particles. A careful analysis of possible sources of background ensured that the B meson signals were authentic. As soon as the data shifted away from the appropriate peaks for charmed particle production, or the collision energy tuned away from the fourth ψ , the observed B meson peak disappeared. The peak corresponds to 5274 MeV, indicating that the fourth ψ is about 30 MeV above threshold for decay into two B mesons.

In principle there should be both charmed and neutral varieties of B mesons, but with the present data sample the split is not yet visible.

A typical event from the CLEO detector at Cornell's CESR electron-positron ring, showing a neutral B (beauty) meson decaying into a charmed (D^*) meson and a pion. Tracks and hits in the central drift chamber and beam pipe proportional chamber are shown without the outer detectors, which were not used in reconstructing this event.



mon Problems and Techniques'. The school will follow immediately after the STATPHYS conference to be held in Edinburgh from 25–29 July. Further information from the School Secretary, A. Walker, Department of Physics, University of Edinburgh, James Clerk Maxwell Building, King's Buildings, Mayfield Road, Edinburgh EH9 3JZ, UK.

The first Asia Pacific Physics Conference will be held in Singapore from 12–18 June, and the subjects to be covered include high energy physics and nuclear physics. The Conference is sponsored by the National University of Singapore, the Singapore Institute of Physics, the Physical Society of Japan, the Southeast Asian Theoretical Physics Association, and the International Centre for Theoretical Physics at Trieste. Further information from the Conference Chairman, Department of Physics, National University of Singapore, Kent Ridge, Singapore 0511.

A Workshop on Time Projection Chambers and experiments using them will be held at the TRIUMF Laboratory, Vancouver, Canada, from 23–25 June. Further information from the co-chairmen: E.P. Hincks, Physics Dpt., Carleton University, Ottawa, Canada, K1S 5B6 or J.A. Macdonald, TRIUMF, UBC Campus, Canada V6T 2A3.

The first European Southern Observatory (ESO) — CERN Symposium will be held at CERN from 21–25 November. Its subject will be Large Scale Structure of the Universe, Cosmology and Fundamental Physics. The Scientific Organizing Committee is composed of G. Setti (ESO) and L. Van Hove (CERN), co-chairmen, J. Audouze, J. Ehlers,

Meetings

The Europhysics Conference on Computing in Accelerator Design and Operation', originally scheduled to be held in Warsaw in September 1982, is now to take place in West Berlin from 20–23 September 1983. The papers will be grouped under the headings — Design Aspects of Accelerators, Digital Control of Accelerators, Operational Aspects, and will include aspects of data processing. Chairman of the conference is Prof. R. Zelazny, INR-Otwock, Poland. Chairman of the local organizing committee is Dr. W. Busse, HMI-Berlin.

Further information is available from Mrs. G. Liar de Martin, Hahn-Meitner-Institut Berlin, Postfach 39 01 28, D-1000 Berlin 39, West Germany.

The Third International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions will be held from 26–29 September at Brookhaven. Nuclear and high energy physicists will discuss recent progress in theory and experiment regarding the formation of new states of matter in very high energy nucleus-nucleus collisions. Particular emphasis will be paid to the prospects for future experiments with existing and proposed accelerators. For further information please contact the conference secretary, Ms Rae Greenberg, Physics Dept, Building 510A, Brookhaven National Laboratory, Upton, New York 11973 USA.

The Scottish Universities' Summer School in Physics will be held in Edinburgh from 31 July to 20 August. The topic this year is 'Statistical and Particle Physics — Com-

E. Fiorini, H. van der Laan, D. Nanopoulos, M.J. Rees, D.N. Schramm, D.W. Sciama and G. Tammann. The attendance to the Symposium will be limited to approximately 150 participants.

More spin-off from the equipment used in particle physics

During the closing session of the third World Congress on Nuclear Medicine in Paris, the French national association of public hospital engineers awarded the prizes for the competition it had organized on the development of new techniques in nuclear medicine. The criteria used to judge the twenty projects put forward were originality and the impact on technological development.

One of the prizes was awarded to a joint project by French scientists and engineers from three laboratories: Françoise Soussaline (the Frédéric-Joliot hospital, CEA), Hoan Nguyen Ngoc and Jack Jean-jean (from the applications group of the linear accelerator laboratory, Orsay) and Lazhar Hadjeris, Roland Marbot, Philippe Miné and Hoang Xuan Thong (from the high energy physics Laboratory at the Ecole polytechnique, Palaiseau). Using a fast bipolar microcomputer developed for particle physics requirements, this team created a system for on-line correction of defects in geometric linearity and in the uniformity of scintigraph pictures produced by gamma cameras.

This system can improve diagnosis by improving picture presentation. It also opens the way to quantitative analysis of the fixation of radioactive elements.

CERN Accelerator School

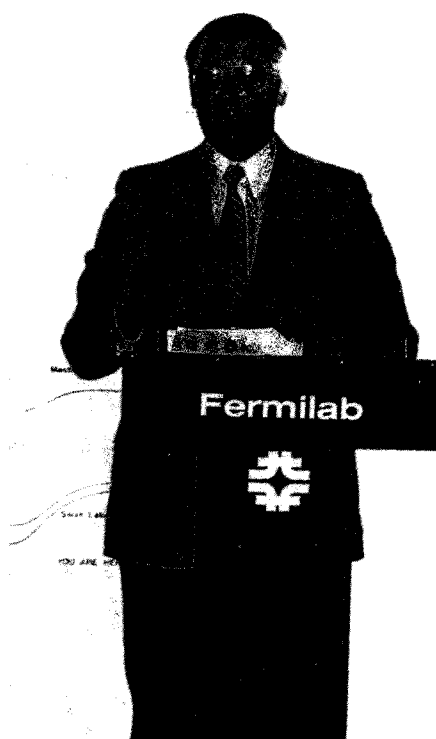
CERN is in the process of setting up an Accelerator School which

will have a continuing mission in close collaboration with institutions in the Member States to promote the transfer of knowledge in the field of particle accelerators. Some examples of proposed activities: to organize courses in accelerator science and technology at post-graduate level; to assist universities to find lecturers for basic courses in accelerator physics; to coordinate supervision of thesis work on accelerator subjects in collaboration with universities; to arrange lectures and promote studies on advanced and novel accelerator techniques. Formation of the School is at an early stage under the leadership of Kjell Johnsen at CERN (1211 Geneva 23, Switzerland), who would be happy to receive constructive comment on the proposed role of the school. Further information on the School's activities will be published in the CERN COURIER as plans advance.

Governor Jim Thompson of Illinois visited Fermilab recently, where he announced the establishment of a 31-member Governor's Commission on Science and High Technology. Members include Leon Lederman and Frank Cole of Fermilab, and Walter Massey of Argonne.

(Photo Fermilab)

A colloquium to mark the sixtieth birthday of theoretician Rudolf Haag was held recently at the II Institute for Theoretical Physics of the University of Hamburg.



Partout où l'œil
ne peut accéder...

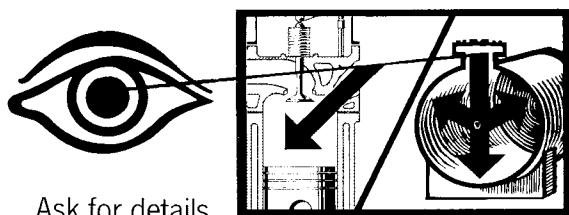
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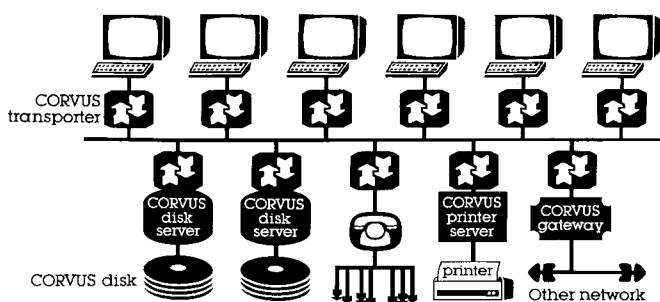
The foremost immediate task will be the conceptual design and technical implementation of the SLC alignment system in collaboration with a PhD physicist. Tolerances to be met are typically in the several part-million region.

The applicant's educational background should be in geodesy, metrology, surveying, or in another closely related field with emphasis on geodesy. Knowledge in computing and statistics is required.

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The Department of Nuclear Physics expects to make two appointments to positions on the Research Assistant (RAIA) scale. The appointees will be expected to take part in construction, running and physics analysis of experiments. The present accelerator-based research programme includes e^+e^- experiments at DESY and eventually LEP; the EMC, EHS and BEBC neutrino experiments at the CERN SPS; and a neutrino experiment at the Tevatron. Non-accelerator experiments include the Soudan 2 project on proton decay and one on the detection of solar neutrinos. In making appointments, preference would be given to EHS and to BEBC/Tevatron neutrino experiments.

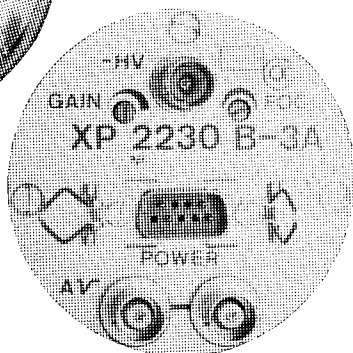
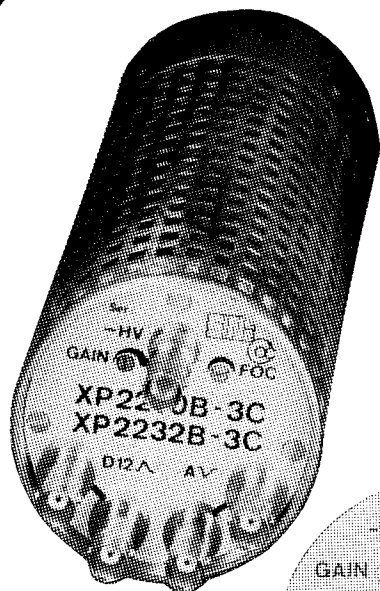
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Professor D.H. PERKINS,
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by March 31, 1983.

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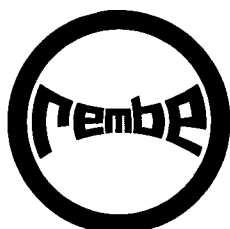
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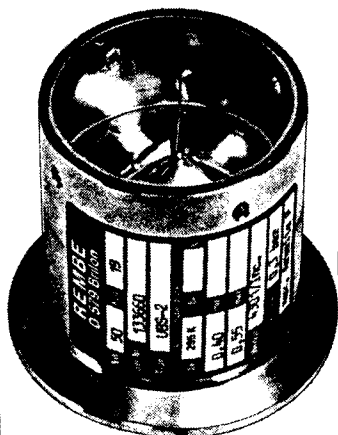
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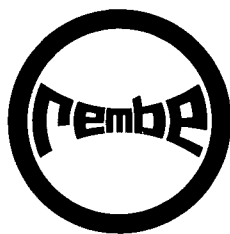


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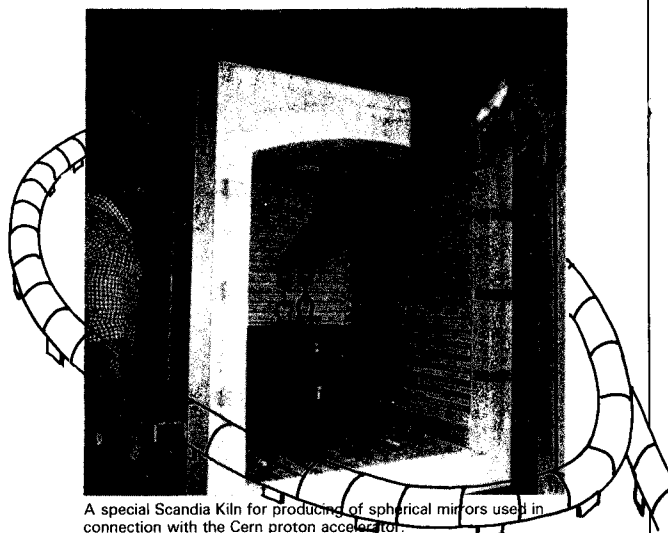
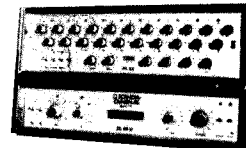
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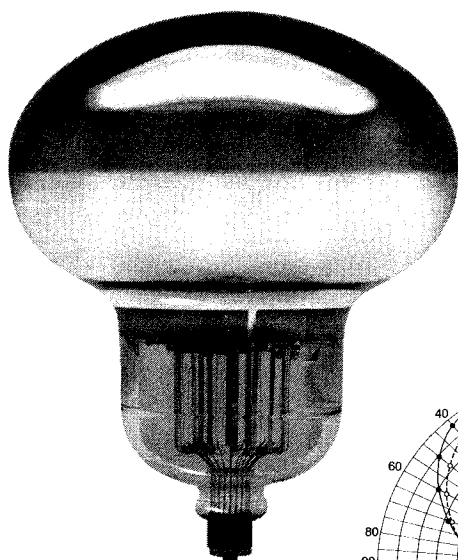
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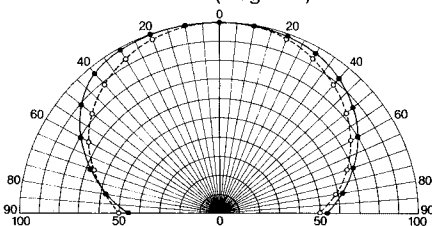
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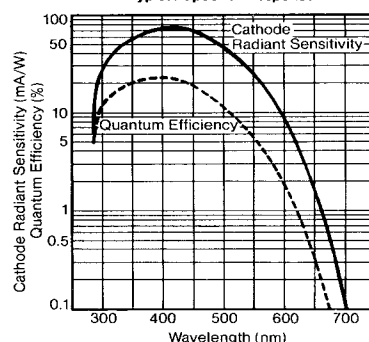
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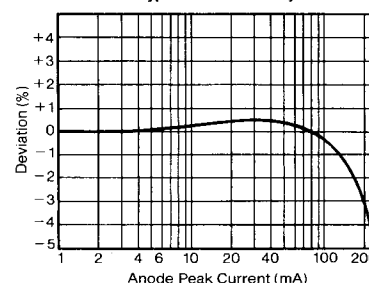
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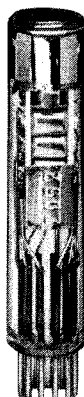
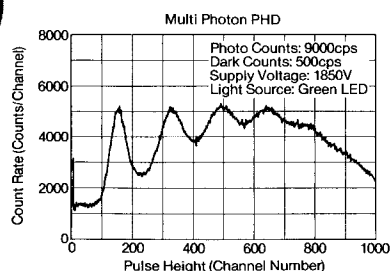
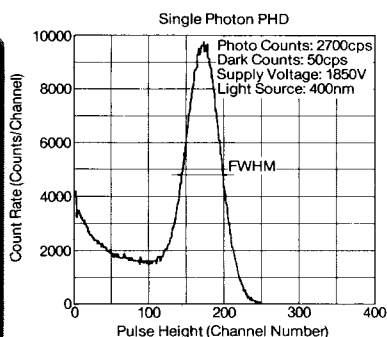
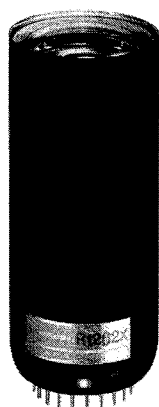
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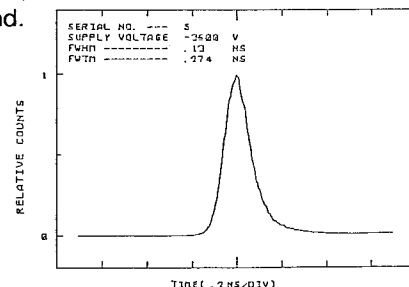
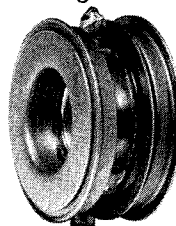


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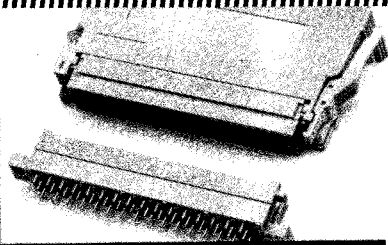
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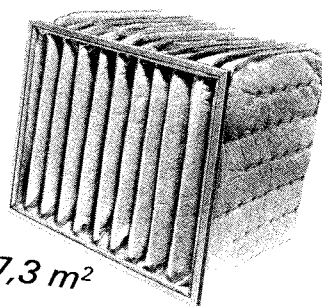
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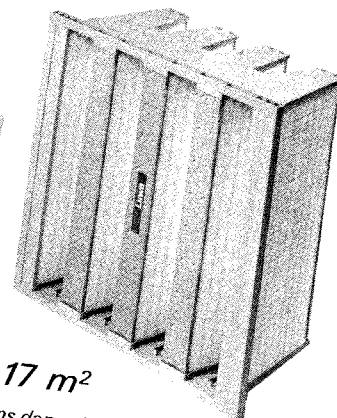
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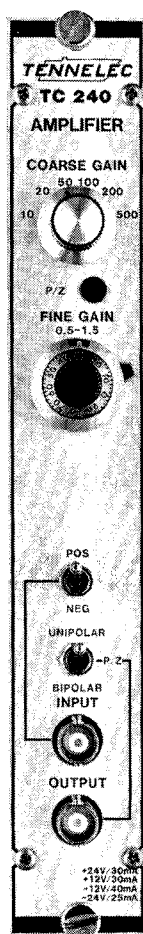
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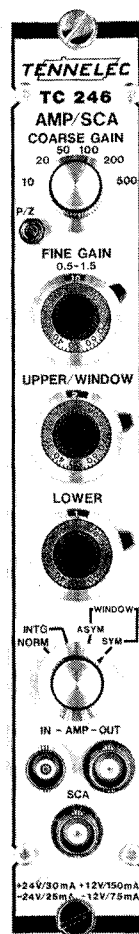
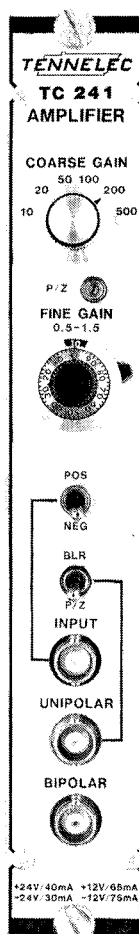
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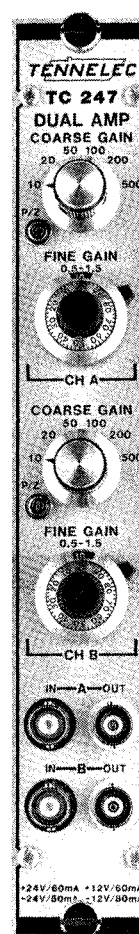
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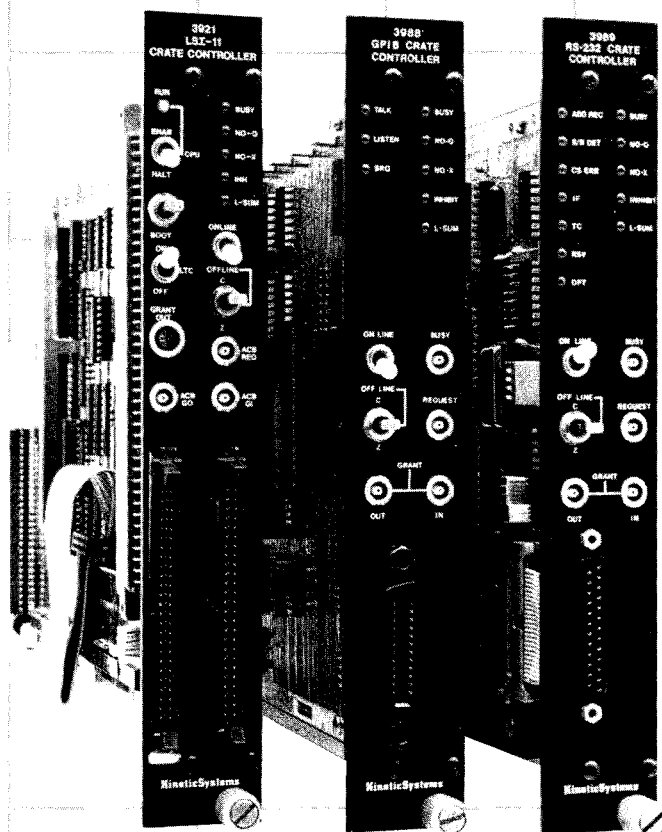
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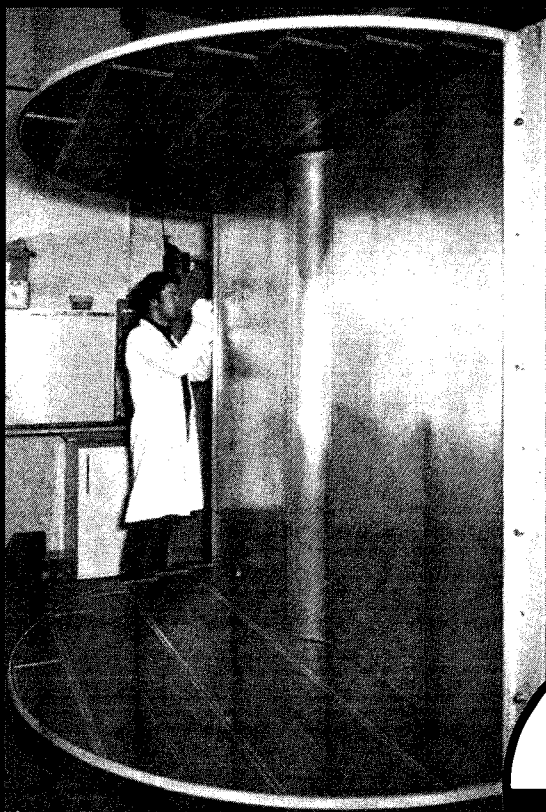
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Constant-output power supply units

E.g.: 0 - 3 kV d.c., 0 - 200 mA, 0 - 100 W; Stability 1×10^{-4} .

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18 types, 100 V to 30 kV.
Output power 30 and 60 W.
Stability and ripple 10^{-3} , Option 10^{-5} .

Plug-in modules

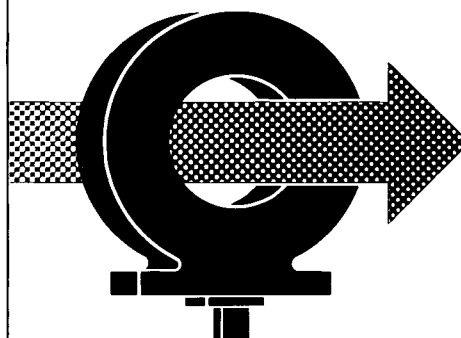
30 and 60 W up to 30 kV; Stability 1×10^{-3} .

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High energy physics:

I6	1210	16bit NIM input gate
LC	5170	NIM to ECL single-width low cost converter
LC	5171	ECL to NIM single-width low cost converter
MUSIC	5151	Multiplicity super logic (CERN specs)
ECDIS	5311	ECL/MBNIM fast trigger display
ADC	1610	8192ch. 200MHz spectroscopy ADC (IPN Orsay specs..)
HM	2161*	16K 32bit 1MHz histogramming memory
DPM	2162*	16K 16bit true dual port memory
ACC	2160	167ns TMS 99000 based fast processor
ACC	2180*	200ns DEC J-11*(PDP 11/70 power) fast processor

* DEC, PDP, J-11 are trademarks of Digital Equipment Corp.

Process control:

TMS	99000-based systems where the maximum speed is required
DEC	J-11* based systems offering software portability between host and targets.

Each system includes ACCs, crate controllers, high speed static RAM memory extensions, EPROM memory extensions, and peripheral interfaces

IOR	1420	general purpose input/output register
PLG	2113	Programmable LAM grader
WCTR	2131	Winchester disk controller
WIN	2130	5 MByte Winchester disk
BHT	2330	Branch highway terminator plug (no slot required)

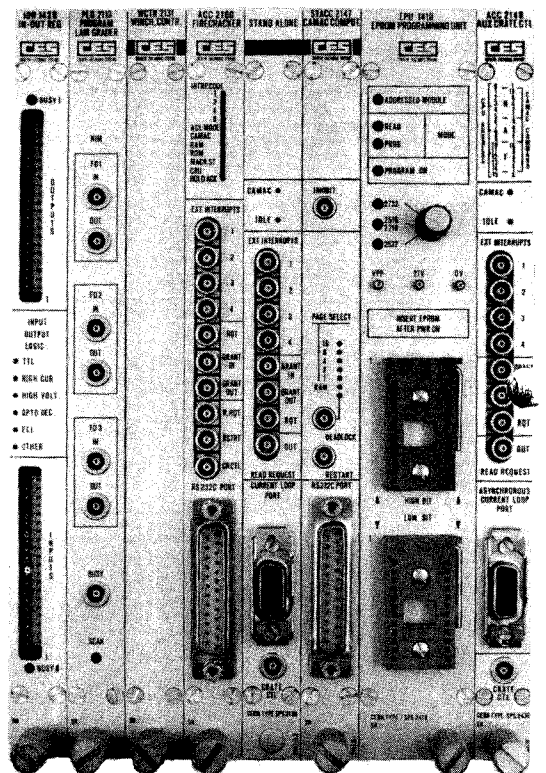
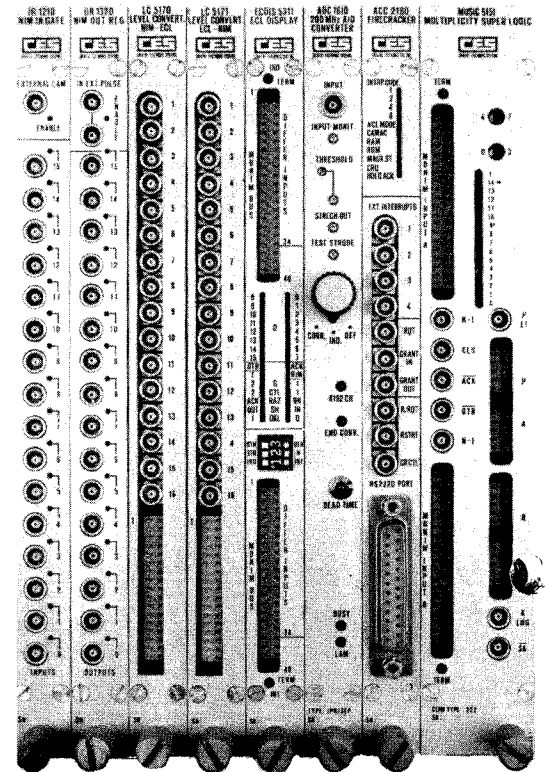
* units under development

Eurocard units:

The CES line of Eurocard based processors are designed to complement the CAMAC processors as low cost front-end extensions. They use the standard 6-64 bus and complement the GESPAC line of processors by adding the Texas Instruments family to the other 8 and 16 bit processors already available in this standard.

GESMPU-4A	68000 8MHz CPU, 64 Kbyte EPROM, 16 Kbyte RAM, 1 RS232C port, 3 interval timers.
CESMPU-9	9995 12 MHz CPU, 64 Kbyte EPROM, 16Kbyte RAM, 2 RS232C ports, 3 interval timers.
CESMPU-10	99105 24 MHz CPU, 64K byte EPROM, 16Kbyte RAM, 1 RS232C port, 1 interval timer.

Contact either CES or GESPAC for the Eurocard units.



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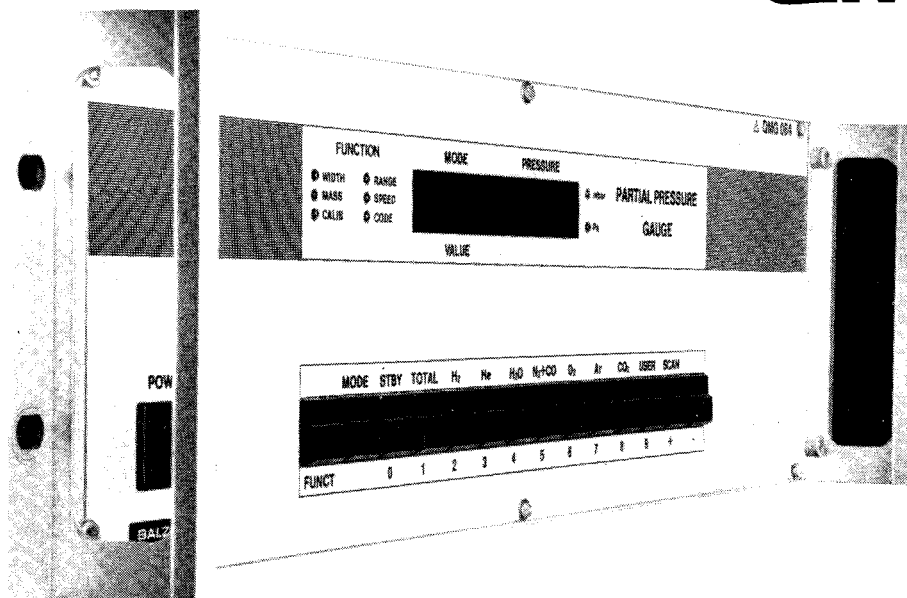
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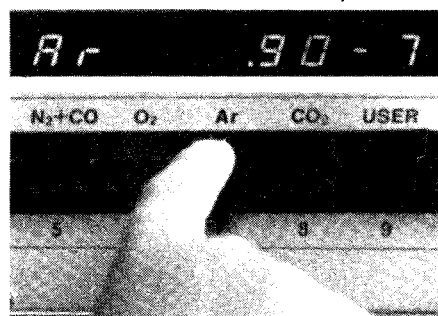
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The new vacuum gauge QMG 064 gives you a choice of

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- spectra in the 1 to 64 amu range

with the display in either milibar or Pas-



cal. The QMG 064 represents the new generation of vacuum gauges with integrated microprocessor which offers the user an ease of operation hardly imaginable a few years ago.

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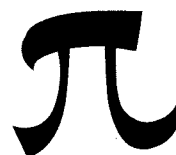
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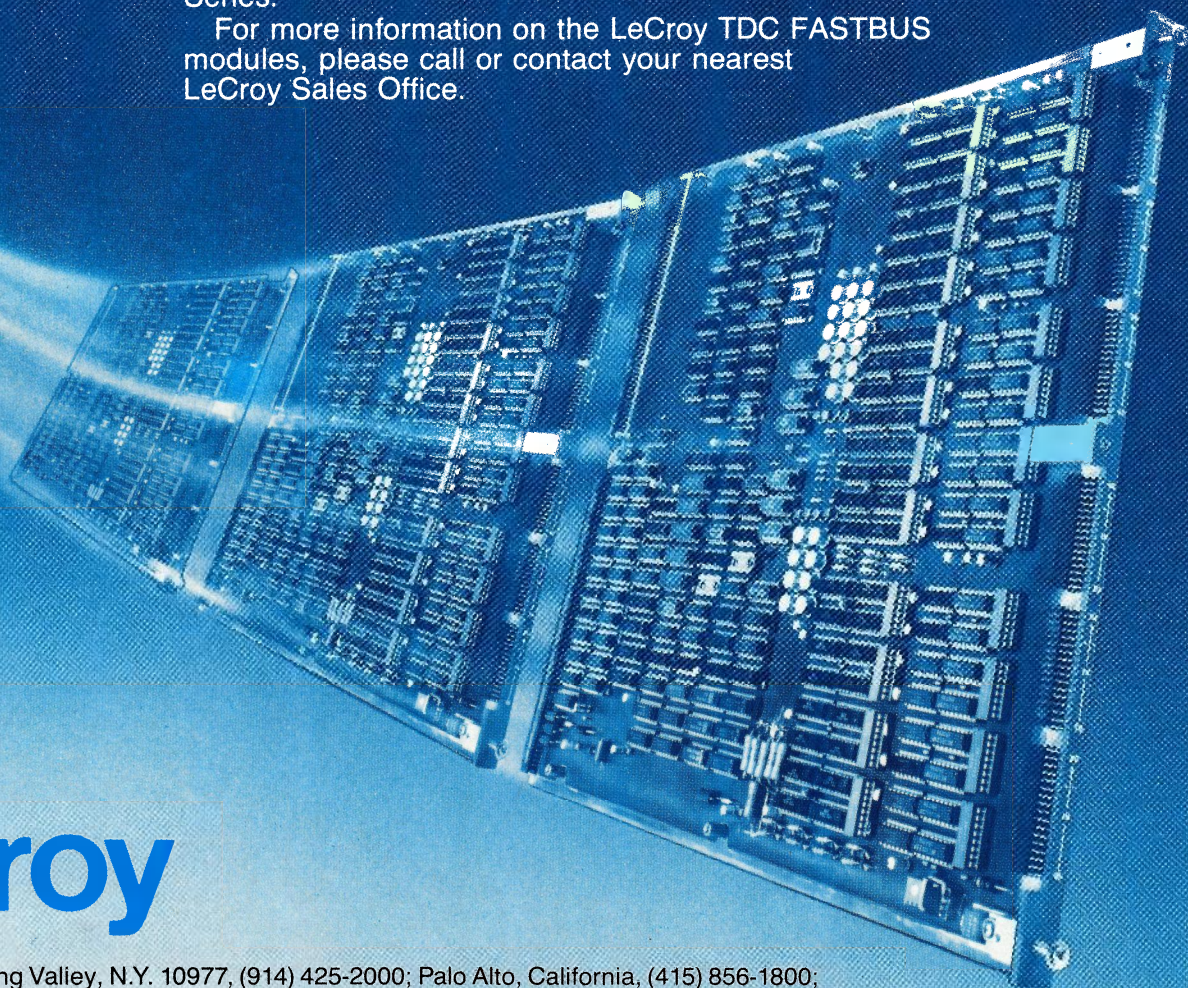
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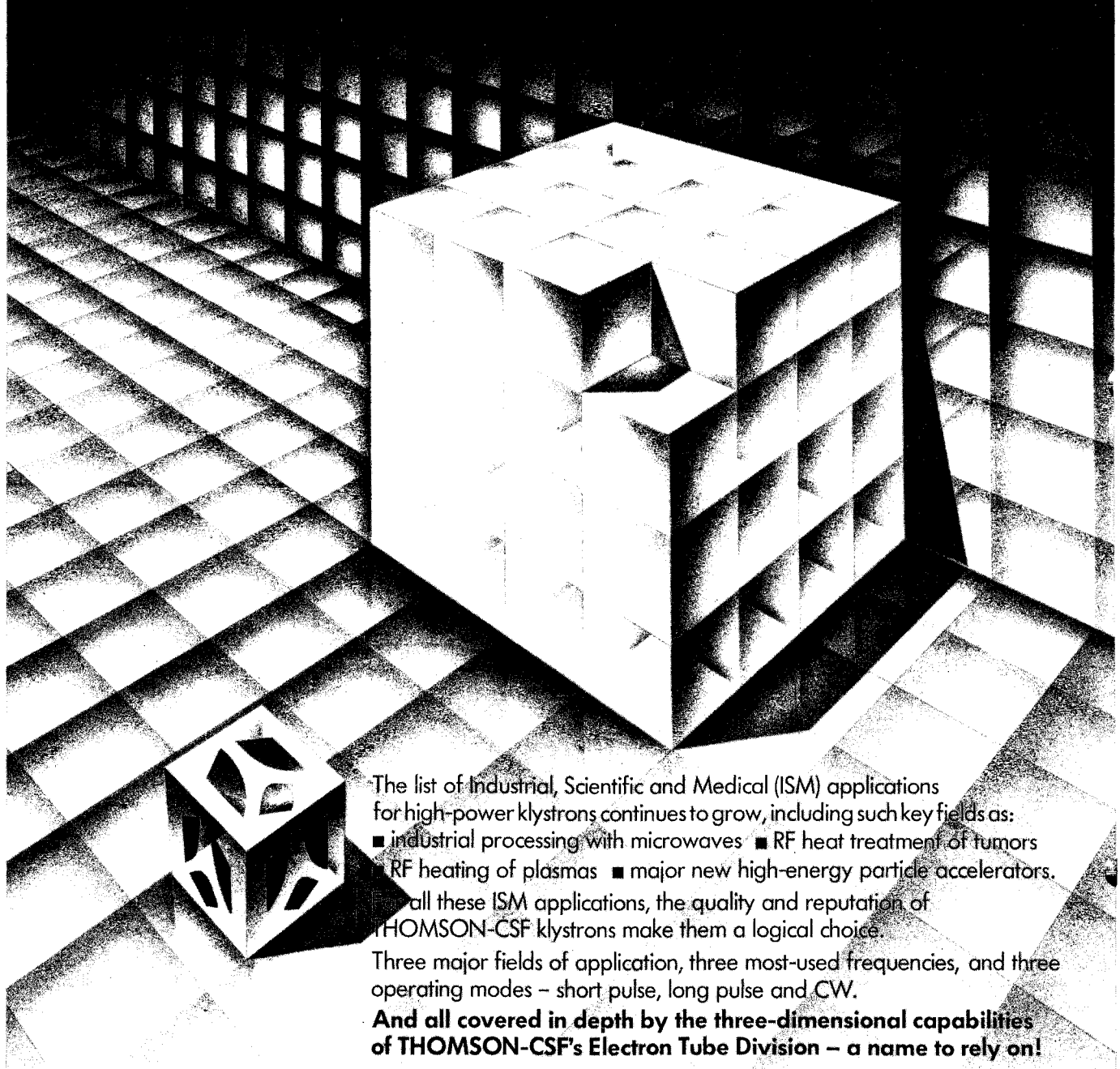
For more information on the LeCroy TDC FASTBUS modules, please call or contact your nearest LeCroy Sales Office.



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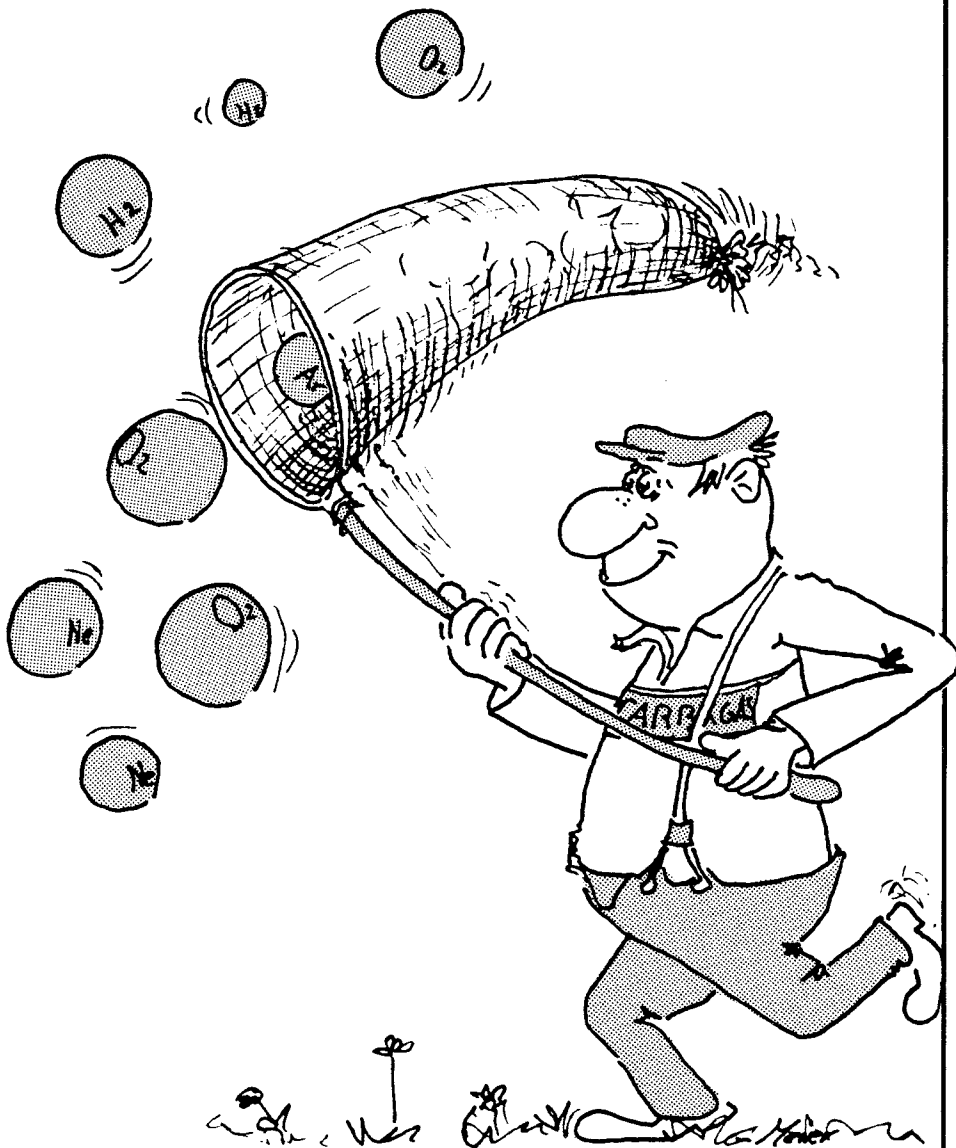
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BF ₃	C ₄ H ₁₀	N ₂
B ₂ H ₆	C ₄ H ₁₄	N ₂ O
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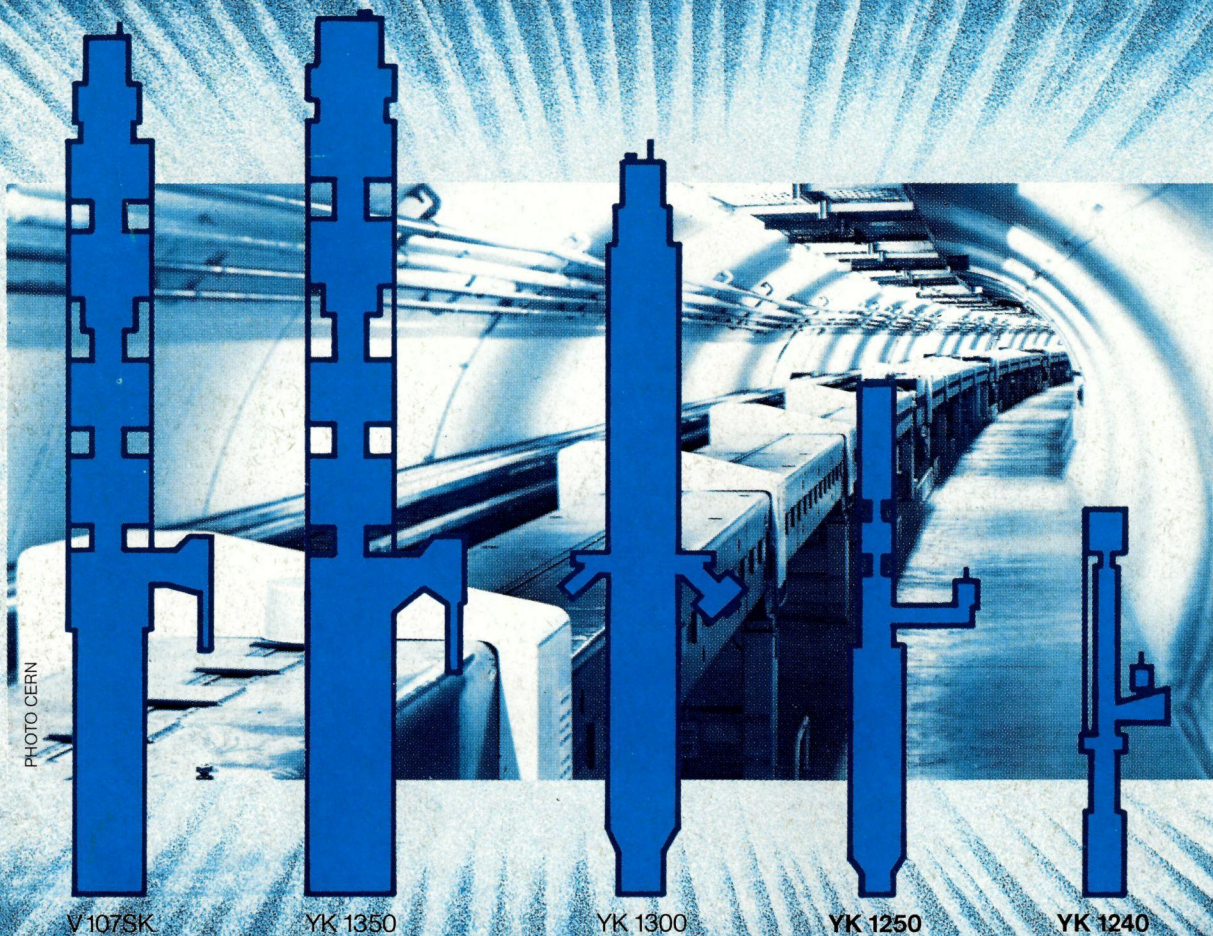


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