



Rutherford
Laboratory

COMMON/CSCAL/IBM, NERR, NCH, NGAP, ISCAN, NBR, NGR, NSCAN1, NQ
LIYSEL, IYSEU, IYMAX, NTRACK, NSC
3-17 March 1975
COMMON/CFID/MFX(20,3), MFY(20,3), NFDX(10,3), NFX(3), NFD(3)
QTAB(2,20,3), NX(100,4), NY(100,4), XN(2), YN(8), IB(100,4)
R IDY(100,2), JDX(4), JDY(4), IHS(4), IDV(2), IUN(2), IDEL
S NCF(16), IFS, NFS, FX, FY, JK, PIC, KPIC, NCUANT, NBIN, MAX
T MAXN, CTA, CTB, MX, MY, JA, JB, JC, JD, JE, JF, JG, JH, JI, J
DIMENSION NCTR(144), NGTR(20), CTR(112), NGTR(112), MODE

bulletin

5

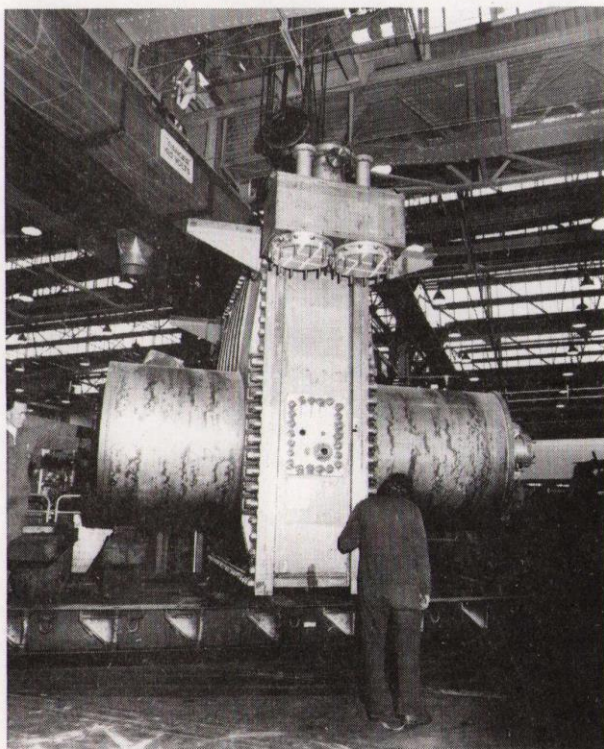
AN HONOURABLE RETIREMENT

On Monday, 17 February 1975, a 26 ton load left the Laboratory on route to Edinburgh. Under the tarpaulin (even the heavens wept) was a unique piece of physics apparatus, the 1.5 metre British National Hydrogen Bubble Chamber which has been gifted to the Royal Scottish Museum by the Science Research Council. The gift consists of the bubble chamber, in which a perspex target has been installed, large vacuum tank, valve box and associated pipe work. The magnet, some 300 tons, will be used for the Rutherford Mass Spectrometer (π 13 experiment) and the generators (four - 1 MW sets used to supply the magnet) are now to be used to power another large magnet, the rapid cycling vertex detector.

The bubble chamber project originated back in May 1957 when a meeting of physicists from several Institutions was convened in London by Professor C C Butler to consider the desirability of constructing a large hydrogen/deuterium bubble chamber for use at CERN with the 25 GeV proton synchrotron and later, at the Rutherford Laboratory with Nimrod. As a result



a watery departure



a working party consisting of members of the physics departments at Birmingham University, Imperial College, Liverpool University, Oxford University and Rutherford Laboratory staff was formed to prepare basic designs. By 1961 a construction team, led by Wyn Evans, was assembled at the Rutherford Laboratory.

The project was completed and tested by early 1963, then dismantled and moved to CERN where it was reassembled. During its stay at CERN some 1.5 million physics pictures were taken. It returned to the Lab, once again in bits, was reassembled, and following modifications was scheduled for data taking at the beginning of 1968. During the following 2½ years about 2.5 million pictures were taken.

During this period a collaboration programme with CERN was concerned with the development of what was to become a unique feature of the 1.5 metre chamber. This was the Track Sensitive Target (T.S.T) which came into operation in the Autumn of 1971 being the first in the world to carry out a full physics programme using the new technique of a hydrogen target operating in a neon/hydrogen mixture. From then until its closure in November 1973 it produced 2.7 million pictures and remained unique in its Track Sensitive Target operating capability. It seems very appropriate indeed that its final resting place should be the Royal Scottish Museum, Edinburgh in a road called - 'Chamber Street'.

moving day

INTERNAL EVENTS

NIMROD LECTURE SERIES

There is no lecture on Monday 3 March in this series.

TRADE EXHIBITION

Tuesday 4 March
10.00 - 16.00
R12 Conference Room

Keithley Instruments Ltd are presenting an electronic instrument demonstration featuring their own range of digital multimeters and nanovoltmeters, electrometers and current sources; the Krohn Hite range of filters, function generators, phasemeters and oscillators; Newport Labs digital panel meters and printers; Cunningham Corporation data acquisition switches and a.t.e. switches and it is hoped to have available the latest NEFF Corporation's System 620 low level high speed data acquisition.

HEP SEMINAR

Wednesday 5 March
11.00
R61 Conference Room

Some Recent Developments in $\pi\pi$ Scattering.

C Froggatt/Glasgow

SPECIAL NIMROD LECTURE

Thursday 6 March
11.30
Lecture Theatre

Latest Results from SPEAR

Dr M Breidenbach/SLAC

NIMROD LECTURE SERIES

Monday 10 March
11.30
Lecture Theatre

A Study of the Reaction $\pi^+p \rightarrow K^+\Sigma^+$ and $K^-p \rightarrow \pi^-\Sigma^+$ at 10 GeV/c.

Dr C J S Damerell/RL

APPLIED PHYSICS LECTURE

Monday 10 March
14.15
Lecture Theatre

Laser Accelerators?

Dr J D Lawson/RL

Can the very high electric fields in the light waves of modern high powered lasers be harnessed to make useful particle accelerators? This question will be examined in a general way, and some specific ideas and their problems explored. An attempt will be made to treat the subject in familiar terms without too much mathematics.

NIMROD PROPOSAL TALK

Tuesday 11 March
11.00
Lecture Theatre

New Proposal Talk and Progress Reports

11.00 Progress Report on Proposal 128 (π 8A) by *Dr D M Binnie/Imperial College*

11.30 approx. Proposal No. 165. "A proposal to measure spin effect and differential cross-sections in hadron-hadron elastic scattering at SPS energies", CERN/IPN-ORSAY/OXFORD collaboration. The talk will be given by *Dr N E Booth/Oxford*.

12.15 approx. Progress Report on Proposal 113 and 156 (K17) by *Dr C J Batty/RL*

HEP SEMINAR

Wednesday 12 March
11.00
R61 Conference Room

Analysis of the $(3\pi)^0$ System from $\pi^+d \rightarrow \pi^+\pi^-\pi^0pp_s$ at 4 GeV/c.

D Crennell/RL

SEMINAR IN COMPUTING

Friday 14 March
11.00
R61 Conference Room

A Review of the UMRCC 1906A/7600 Joint System

D Haworth/Manchester RCC

NIMROD LECTURE SERIES

Monday 17 March
11.30
Lecture Theatre

Hadron Production in Muon-Nucleon Collisions

Dr C A Heusch/SLAC - CERN

EXTERNAL EVENTS

THEORETICAL ELEMENTARY PARTICLE PHYSICS SEMINARS, NP DEPT, OXFORD - 14.25 hrs

- 7 March: J C Taylor - Magnetic Strings & Quark Confinement.
14 March: Dr P Vinciguerra/CERN - Field Theory Models of Quark Confinement.

THEORETICAL PHYSICS SEMINARS/CLARENDON LAB - 16.15 hrs

- 6 March: Dr M F Sykes/King's - Ising Models and Configuration Problems.

COLLOQUIA/CLARENDON LAB, OXFORD - 16.15 hrs

- 7 March: Prof R H Dalitz/Oxford - The New ψ Particles.

LOW TEMPERATURE & SOLID STATE PHYSICS/CLARENDON LAB - 14.30 hrs

- 6 March: Prof N Kurti - Sober Thoughts on Cold Facts.

ELEMENTARY PARTICLE PHYSICS SEMINARS/NP DEPT, OXFORD - 14.30 hrs

- 6 March: Prof C Rubbia/Harvard, CERN - Search for New Particle Production by Neutrinos.
13 March: Dr R L Jaffe/MIT - The Hadron as a Bag of Quarks.

HEP SEMINARS/CAVENDISH LAB, CAMBRIDGE - 15.00 hrs

- 5 March: J Fry/Liverpool - Why Antiproton Physics?
12 March: J G Rushbrooke/Cavendish - Is There a Parity-change Rule in Baryon Diffractive Dissociation?

THEORETICAL PHYSICS SEMINARS AT Q.M.C. - 16.15 hrs

- 3 March: Prof E Leader/Westfield - Theories of Proton-proton Scattering at Very High Energies.
10 March: Dr R B Stinchcombe/Oxford - Disordered Spin Systems.

PHYSICS & GEOPHYSICS COLLOQUIA AT BRISTOL U. - 17.00 hrs

- 3 March: Prof R H Dalitz/Oxford - The New ψ Particles.
10 March: Peter Wright/East Anglia - Climatic Variations.
17 March: Dr M S Longair/Cavendish - Physics of Extragalactic Radio Sources.

NUCLEAR PHYSICS SEMINAR AT KING'S COLLEGE - 14.00 hrs

- 5 March: Dr R Whitehead/Glasgow - Large Scale Shell-model Calculations.

THEORETICAL & HEP SEMINARS AT SOUTHAMPTON - 14.30 hrs

- 7 March: Dr D M Binnie/Imp Coll - Experiments on Mesons near Threshold.
14 March: Dr N Collingham/Bristol - Electromagnetic Form Factors in the Time-like Region.

APPLIED MATHS SEMINAR/ROYAL HOLLOWAY COLLEGE - 15.00 hrs

- 13 March: Dr D McNally/U of London Observatory - Recent Studies of the Collapse of Non-spherical Interstellar Gas Clouds and their Relationship to the mm Radio Astronomy Observations.

NUCLEAR PHYSICS SEMINAR AT SURREY - 14.15 hrs

- 12 March: R C Johnson/Surrey - Polarization Effects in Deuteron-nucleus Scattering.

THEORETICAL PHYSICS SEMINARS/CONF. RM. BLDG 8.9 AERE - 14.00 hrs

- 4 March: Dr J Rae/Harwell - The Solution of the Classical Heisenberg Model in One Dimension.
11 March: Dr J Sykes/Harwell - The Susceptibility of Liquid He^3 near 1K.

NP DIVISION COLLOQUIA/CONF. RM. HANGAR 8, AERE - 15.30 hrs

- 6 March: Prof J H Fremlin/Birmingham - Activation Analysis in Medicine.
13 March: Dr C J Sofield/Australian Nat. U & NPD - Title to be announced.

ATLAS COMPUTER LABORATORY SEMINARS

GEC 4080 FRONT END PROCESSOR PROJECT

There will be a series of three seminars on the 4080 front end processor project. This Front End Processor is to be used for communications purposes and will connect Remote Job Entry stations to the I906A via a home built interface and to the 360/195 via a communications interface. The aim is to allow economisation of lines and stations, to allow stations to access both machines and to allow interactive use of the I906A via such a station. A subsidiary aim is to examine and experiment with the Post Office Experimental Packet Switching Service.

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| SEMINAR 1 - 3 March, 14.00 hours
P E Bryant | Overall view of the project. This will outline the structure of the code and how various parts interact. EPSS plans. |
| SEMINAR 2 - 10 March, 14.00 hours
M D Fowler | The communications interfaces. The initial system will use HASP Multileaving Protocols. How these are dealt with and analysed will be discussed. |
| J D Thewlis | The KERNEL. This part of the 4080 code deals with the overall control of the system and is in effect the 'telephone exchange'. |
| SEMINAR 3 - 17 March, 14.00 hours
N M Parker | The interface between the I906A and GEC 4080. This device has been built at ACL and provides a high speed link between the machines. |
| D C Toll | 7903 emulation code. The 4080 will look to the I906A like the 7903 communication processor and a large amount of complex code is required to match the interface to the KERNEL. |

These seminars will be held in the Colloquium, Atlas Computer Laboratory.

RUTHERFORD LABORATORY BULLETIN

Published by the Scientific Administration Group

Editor: H F NORRIS

Deadline
for
Insertions

GENERAL & SOCIAL NEWS

INTERNAL & EXTERNAL EVENTS

Tuesday 1600

Wednesday 1200

Room 42 Building R20
Rutherford Laboratory
Chilton Didcot Oxon
Abingdon 1900 Ext 484

GROUP LIFE ASSURANCE SCHEME

All employees should have seen the SRC circular regarding the Group Life Assurance Scheme which is arranged through the Economic Insurance Company and Normal Frizzell Life and Pensions Ltd. A representative of the brokers visits Harwell most Mondays and staff wishing to discuss the Scheme may make an appointment through General Admin. at Harwell on Ext. 2514.

The Brokers are also pleased to give advice on life insurance and house purchase.

BUPA Anyone wishing to obtain information on the BUPA group scheme, which has been formed at the Laboratory, should contact Miss J Eggleton, Bldg R20, Ext. 6616.

FOUND A sum of money has been found, also a house key found near the Restaurant. Please contact Mrs S Fones, Ext. 495 regarding both items.

FILM BADGE NOTICE It is Period 3. Colour Strip - YELLOW for 8y films. Please check that you are wearing the correct films and that all old ones are returned.
Six monthly TLD change for people with surnames commencing I, J, K and L.

NATIONAL SAVINGS CERTIFICATES

Weekly Cycle 12 - Certificates will be available for collection from the Cash Office, R20, during normal Cash Office hours, from Monday 3 March 1975.

STORES SERVICES

The following revised opening hours will apply from 3 March 1975.
R1 Stores - 08.30 to 12.30 and 13.15 to 16.20
R40 Stores - 07.45 to 12.30 and 13.15 to 16.20

OVERSEAS VISITS

Messrs H C Brooks, A Carne and M. H. R Donald, to the USA, 1-15 March, to attend the 1975 Particle Accelerator Conference at Washington D.C and to visit SLAC and Los Alamos for discussions.
Dr K Paler, to Meribel, France, 2-8 March, to attend the Xth Rencontre de Moriond.
Dr R Taylor, to the USA, 3-7 March, to give invited presentation on SEAS Future Requirements at SHARE XLIV General Meeting in Los Angeles.
Dr G C Stirling, to the USA, 6-31 March, for discussions on future neutron facilities at Los Alamos, Oak Ridge, N.B.S Brookhaven and Argonne.
Dr E W Colglazier Jr, to Meribel, France, 7-15 March, to attend the Xth Rencontre de Moriond.
Mr D D Cohen, to CERN, 9 March - 30 June, for calibration of Omega neutron counters.
Dr L C W Hobbis, to ILL Grenoble, 11-14 March, to attend the Scientific Council and other meetings.

SOCIAL NEWS

CHRISTIAN FELLOWSHIP

March 7. All are welcome to join the fellowship for a time of prayer led by Ben Kingdon of Bldg R20 at 12.30 in the R12 Conference Room.

March 14. Derek Smaje of Bldg. R18 will be leading the first of a series of meetings about world religions. This week the subject will be "An Introduction to Islam - Part 1". All are welcome to attend and there will be time for discussion. R12 Conference Room at 12.30.