Rutherford Laboratory

19-26 June 1972

bulletin 22

NIMROD'S PERFORMANCE

Nimrod has been running very well this year. In the last two Cycles, the efficiency of running for high energy physics measured as achieved time divided by scheduled time, has been at the record level of 94.5% and 95.4%. So far this year the average efficiency has been about 92%. Beam intensities have been good, a record 1.3 x 10^{12} protons per pulse has been extracted into Experimental Hall 3.

The last Cycle has seen the completion of the experiment by Oxford University using the KIOS beam line derived from an internal target in the Nimrod vacuum vessel. It is expected that this internal target will only have occasional use in the future. Taken in conjunction with the plan to remove the π7 internal targets in the coming winter shutdown this will reduce the number of heavy targets in the machine to one (π10). This in turn will reduce the level of induced activity in Nimrod and ease the problems of maintenance. We shall be relying more and more on extracted beams. Plans are now under way to replace the present beam for the 1.5 m bubble chamber (K9) by a low momentum beam (KI9) during the winter shutdown. At the same time the present X2 complex will be replaced by an 8 GeV/c proton beam for an Oxford/CERN/Orsay experiment and a further target station (making 3 in all) will be added in Hall 3 for a low momentum K beam.

Work aimed at increasing the Nimrod intensity by around 40% by the installation of a second radio-frequency accelerating system during the winter shutdown is going well.

During the study of the process of extracting protons from Nimrod it has become apparent that we are extracting 60-65% of the accelerated protons but that we only have about two-thirds the number accelerated as we previously thought. The extracted proton beam intensities on which we now depend have been well-known and accurate. For internal intensities we shall soon be quoting 'new protons'!

NATIONAL SAVINGS CERTIFICATES

Weekly Cycle 5 - Certificates can be collected from the Cash Office R20 from 26 June onwards.
Monthly Cycle 5 - Certificates can be collected from the Cash Office R20 from 3 July onwards.
New members wishing to join the scheme can obtain enrolment forms from the Cash Office.

FILM BADGE NOTICE

It is Period 7, Colour Strip PURPLE for βγ films and fast neutron packs. Please check that you are wearing the correct dosimeters and that all old ones are returned.

MISSING EQUIPMENT

A 'Wolf' drill 3/8 inch chuck RL No 14/4380, AERE No 22180 is missing. Would anyone knowing the whereabouts of this item please contact Mr M W Dean. Ext 6259.

VISITORS TO THE LABORATORY

Twenty staff and pupils of the Grammar School, Haywards Heath, Sussex will visit the Laboratory a m Sunday 25 June.

OVERSEAS VISITS

Dr C M Fisher to CERN 18-20 June to attend ECFA Working Party. Mr G H Rees to USA 18-30 June to attend Summer Study on Isabelle at Brookhaven. Mr M J Cawthraw to Denmark 18-21 June for Camac Dataway Working Group Meeting. Dr J M Valentine to CERN 19-20 June to attend CERN Users Meeting. Mr M W Tyrrell to CERN 22-26 June. Drs R A J Riddle, L H Watson, D H Baugh and B W Allardyce to Aix-en Provence, France 25 June - 1 July to attend European Conference on Nuclear Physics. Dr D M Morgan to Finland 25 June - 3 July to give lectures at Summer School.

INTERNAL EVENTS

NIMROD LECTURE SERIES
Monday 19 June
11.30 a m
Lecture Theatre

Total Proton-Proton Cross Sections at ISR Energies

Dr G Bellettini/CERN and Pisa

HEP DISCUSSION GROUP
Wednesday 21 June
11.00 a m
Conference Room Building R1

Anti Proton Physics

Professor H Muirhead/University of Liverpool

NUCLEAR PHYSICS GROUP SEMINAR
Wednesday 21 June
11.00 a m
Conference Room R12

Investigation of Very Light Nuclei using Medium Energy Proton

Dr P Kitching/University of Alberta

NIMROD LECTURE SERIES
Monday 26 June
11.30 a m
Lecture Theatre

Ke_4 Decay

Dr R Turley

NIMROD SCHEDULE

CYCLE 7 6 6 72 - 27 6 72 — MACHINE PHYSICS — HIGH ENERGY PHYSICS

Team	Beam	Experiment	State
Birmingham University RHEL	K12A	$K^{\pm}n$ Elastic Scattering and $K^{+}n$ Charge Exchange from 0.45-0.95 GeV/c	Data
Cambridge University RHEL	K13C	Associated Production Cross Sections	Setting up
Imperial College Southampton University	π7	Studies of η ω and A2	Data
Surrey University Birmingham University RHEL	π10	Total Cross-Sections for Pions on Light Nuclei	Data
RHEL/UCL/Berkeley/ Torino	K9	4 GeV/c $\pi^{+}p$ interactions in track sensitive target	Data
Glasgow University RHEL	π9,N4	Polarisation Measurements in $\pi^{-}p$ Charge Exchange	Parasitic
Bristol University Southampton University RHEL	K15	$K^{+}p$ and $\pi^{\pm}p$ Differential Cross-Sections	Parasitic

EXTERNAL EVENTS

ELEMENTARY PARTICLE PHYSICS SEMINAR
Tuesday 20 June
2.30 p m
Nuclear Physics Lecture Theatre Oxford

Unconventional Approach to the Analysis of Polarized Reactions

Professor G C Wick/CERN and University of Columbia

DARESBURY LECTURE SERIES
Tuesday 20 June
2.00 p m
DNPL

Total Proton-Proton Cross Sections at I S R Energies

Dr G Bellettini/Pisa

COMPUTING SCIENCE SEMINAR
Tuesday 20 June
2.00 p m
Culham Laboratory Lecture Theatre

Design and Implementation of LSD (Language for System Development)

M Calderbank and D G Bate

THEORY DIVISION COLLOQUIUM
Wednesday 21 June
2.00 p m
Room G8 E6
Culham Laboratory

Convection in the Presence of a Magnetic Field

R S Peckover

COLLOQUIUM
Wednesday 21 June
4.30 p m
Room 318 APSI New Building
University of Reading

The Atmosphere as Part of a Biological Cybernetic System

Professor J E Lovelock

MATERIALS PHYSICS DIVISION SEMINAR
Thursday 22 June
11.00 a m
Large Conference Room
Building 521 AERE

Types of Magnetic Order in Alloys

Professor B R Coles/Imperial College, London

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Deadline for Insertions	GENERAL & SOCIAL NEWS	INTERNAL & EXTERNAL EVENTS
	Tuesday 1600	Wednesday 1200

pmr

SOCIAL NEWS

RUTHERFORD AND ATLAS RECREATIONAL SOCIETY FOLK CLUB

Friday 23 June - MAGIC LANTERN. Sheila and Taffy Thomas sing folk songs and illustrate with shadow puppets. They also give short entertaining documentaries based around traditional songs, puppetry, poems and short sketches.

Some of the artists booked for future dates include:- Joe Stead; Rosemary Hardman; Rod Garfield and Tony Brummel-Smith; Mike Absolom; Triad; The Shambles; Songwainers; Johnny Handle and Barry Dransfield.

The Folk Club is held every Friday in R22 Coffee Lounge at 8 p m. Licensed Bar. Details can be obtained from Stephanie Hannan Ext 6229.

CHRISTIAN FELLOWSHIP

Friday 23 June. The Thames Valley Crusade is about to begin in a large marquee in Reading "What sort of a person is an evangelist". If you are not sure why not come along and meet one of the evangelists who will be leading the meetings in Reading.

The venue is the R12 Conference Room and the time 12.30 p m.

SINGERS WANTED

Singers of all ranges are invited to join the Letcombe Singers. They rehearse on Tuesday evenings, summer and winter, in the new centrally heated hall at Letcombe Regis. The programme is varied and includes both sacred and secular music. No auditions. All that is required is an enthusiasm for choral singing. The singers are popular in this district and productivity is high. Last year they gave sixteen concerts and they are now rehearsing 'Showboat'. For further details please contact either B Silcock or Mrs S Harris Ext 254.