



Rutherford
Laboratory

16-23 October 1972
bulletin 34

MANY FIRSTS IN EXPANDED COLLABORATION PROGRAMME

We are being swamped, via the news media, about "going into Europe". The Rutherford Laboratory has not only been in Europe for a long time, but is now increasing its collaboration programme much further afield.

The most recent addition to this expanding field is the Tata Institute of Fundamental Research at Bombay, India. The Institute is named after its principal benefactor, J R D Tata and was founded twenty-six years ago by its first Director, Professor H J Bhabha. Professor Bhabha in his capacity of Chairman of the Indian Atomic Energy Commission, visited the Rutherford Laboratory in October 1964, just eight years ago. Unfortunately, in 1966 he was killed in an aircraft accident. The present Director is Professor M G K Menon.

The principal interests of the Tata Institute lie in the fields of Molecular Biology and Nuclear Physics. The Nuclear Physics side covers Cosmic Ray research, Radio Astronomy and High Energy Physics; the Institute's computing needs are met by its CDC 3600.

Their HEP Bubble Chamber Group very recently submitted a proposal to study annihilations of anti-protons of 2 GeV/c in hydrogen with particular emphasis on final states involving two or more neutral pions, using the Track Sensitive Target facility in the Rutherford Laboratory's 1.5 metre cryogenic bubble chamber. They put forward the proposal after hearing that the computer controlled K9 beam line could be successfully tuned for 2 GeV/c \bar{p} , (we reported on the computer controlled K9 beam line in Bulletin No 45, 20 December 1971) and of the successful operation of the Track Sensitive Target with a Neon-Hydrogen mixture of over 70 Mole % Neon.

The proposal was accepted and the Tata Institute Group run followed on the first physics run (the 4.0 GeV/c π^+p experiment reported in Bulletin No 29, 11 - 18 September 1972) thereby becoming not only the second group to use this unique facility but the first ever to carry out an anti-proton experiment at the Rutherford Laboratory. In addition this was the first experiment with anti-protons done anywhere in which final states involving two or more neutral pions have been studied. One possible mode is $pp \rightarrow \pi^0\pi^0$ with the π^0 giving gamma-rays, which, as in the 4.0 GeV/c π^+p experiment, are detected in the neon-hydrogen mixture.

So the first run using the Track Sensitive Target facility in the 1.5 metre chamber has ended during which time two experiments were undertaken. The first million pictures have been taken which includes 825,000 for the 4.0 GeV/c π^+p , and 204,000 for the Tata Group's 2.0 GeV/c pp experiment.

The figure of one million was reached at 10.20 hours on 6 October and by the end of Cycle 12 on 10 October, the target had been expanded one and a half million times.

How many cups of tea (Indian?) were consumed during this period has not been recorded!

CONSERVATION SOCIETY - OXFORD BRANCH

The Conservation Society's Oxford Branch which was formed early this year is holding its next meeting on Wednesday 18 October. The meeting, which commences at 7.40 pm will be held at the Blackfriars meeting room, St Giles, Oxford. The principal speaker will be Jon Tinker, Environmental Consultant for "New Scientist" who will talk on "Pollution Control in Britain". Non-members will be welcomed and anyone interested in details of the Society should contact Dr J D Lawson, Building R25, Ect 6128.

LETTER OF THANKS

"Herbert Whitby would like to acknowledge the good wishes of his colleagues on the occasion of his retirement from the SRC. In addition to the Rutherford Laboratory, messages of goodwill were received from old friends at Daresbury, CERN, AERE, RRE and in the USA. Thanks everyone for past associations, and for the events and presentation of the 29 September - a splendid send-off for the future."

FILM BADGE NOTICE

It is Period II. Colour Strip - BLUE for B_x films and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

INTERNAL EVENTS

NIMROD LECTURE SERIES

Monday 16 October
11.30
Lecture Theatre

Report on Batavia Conference

Dr G Ringland and Dr G Manning/RHEL

PROPOSAL LECTURE

Monday 16 October
14.30
Lecture Theatre

Proposal No 118. "A Proposal to measure cross sections for $pp \rightarrow pX$, nX as a function of S and M_X^2 using the internal target facilities at NAL". Imperial College London/Rutgers University, New Jersey.

Lecture by Dr I Siotis/Imperial College

HEP DISCUSSION GROUP

Wednesday 18 October
11.00
Conference Room, Building R1

The Missing Mass Spectrum in $\pi^- p \rightarrow pX^-$ at 8, 11, 13.5 and 16 GeV.

Professor M J Glaubman/North Eastern University and University of Oxford

FILM SHOW

Wednesday 18 October
13.15
Thursday 19 October
12.40
Lecture Theatre

Fjord Spectacular - a 21 minute colour film

After a serious start to the 1972/73 film season we return this week to our normal showing times and, as a contrast to a lighter subject. Fjord Spectacular introduces the audience to a most beautiful part of the world and how it can be explored by the motorist. It also shows the various relaxations available in Western Norway.

C & A DIVISION SEMINAR

Friday 20 October
11.00
Conference Room, Building R12

General Meeting

NIMROD LECTURE SERIES

Monday 23 October
11.30
Lecture Theatre

Inclusive Spectra in Single and Double Excitation Models

Dr M Le Bellac/Nice

NIMROD SCHEDULE

CYCLE 13 10 10 72 - 31 10 72

MACHINE PHYSICS

HIGH ENERGY PHYSICS

<u>Team</u>	<u>Beam</u>	<u>Experiment</u>	<u>State</u>
Cambridge University RHEL	K13C	Associated Production Cross Sections	Data
Imperial College Southampton University	π^7	Studies of η ω and A_2	Parasitic

STOP PRESS

MISSING EQUIPMENT

The following items of equipment have been reported missing from the K12A Local Control Room:-

Tektronix type 1A1 dual trace plug-in unit. Ser No 103281
Avometer Model 8. Ser No 53099-167

Information on present whereabouts to M J Hotchkiss, R1, Ext 6238.

EXTERNAL EVENTS

PHYSICS DEPARTMENT COLLOQUIM
Monday 16 October
17.00
University of Reading

Photon Drag
Professor A F Gibson/University of Essex

PHYSICS & GEOPHYSICS COLLOQUIM
Monday 16 October
17.00
University of Bristol

Fracture of Fibrous Composites
Dr A Kelly/Deputy Director, NPL Teddington

BRITISH COMPUTER SOCIETY -
READING BRANCH MEETING
Tuesday 17 October
20.00
University of Reading

Talk
Mr N Bradbury/Meteorological Office, Bracknell

APPLIED MATHEMATICS SEMINAR
Thursday 19 October
14.30
Royal Holloway College

Dispersion Relations in Electron-Atom Scattering
Professor M R C McDowell/Royal Holloway College

THEORETICAL PHYSICS SEMINAR
Thursday 19 October
16.15
Clarendon Laboratory, Oxford

Perturbation Theory with Projected States
Professor R E Peierls

IEE READING DISTRICT MEETING
Thursday 19 October
19.30
University of Reading

Environment Conserving Technology
Professor P B Fellgett/Reading University

COLLOQUIM
Friday 20 October
16.15
Clarendon Laboratory, Oxford

Liquid Helium in Restricted Geometries
Professor D F Brewer/University of Sussex

EVENTS AT AERE

THEORETICAL PHYSICS SEMINAR
Tuesday 17 October
14.00
Conference Room, Building 8.9

Diagrammatic Approach to the Solid-Fluid Phase Transition
Dr C A Croxton/University of Cambridge

NUCLEAR PHYSICS COLLOQUIM
Thursday 19 October
15.30
Conference Room, Hangar 8

Talking to the Layman about Science
Mr R M Longstaff/AERE

RUTHERFORD LABORATORY BULLETIN

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Editor: H F NORRIS

Deadline
for
Insertions

GENERAL & SOCIAL NEWS
Tuesday 1600

INTERNAL & EXTERNAL EVENTS
Wednesday 1200

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

BBC 50TH ANNIVERSARY EXHIBITION

The BBC are celebrating 50 years of broadcasting with a two-part exhibition. Part 1 - The Technical Story, is at the Electronics Centre, Mullard House, Torrington Place, London WC1 and Part 2 - Sights and Sounds of 50 years, is at the Langham near Broadcasting House. The Exhibition is on from 3 November to 21 December, 12.00 - 21.00 hours on Mondays, Thursdays and Fridays, and 12.00 - 18.00 hours on Tuesdays, Wednesdays and Saturdays. Admission is free. Further particulars, including details of films being shown and talks to be given will be available shortly from the Editor.

CONFERENCE - ADVANCE NOTICE

Advance information is to hand concerning a "Topical Meeting on Intermediate Energy Physics", to be organised by CERN and SIN during the spring of 1973 in Zuoz. Provisional dates - 2 - 12 April. Tentative subjects for discussion (both experimental and theoretical) are: Exotic Atoms, Muonium Physics with Applications to Solid State Physics, Pion Nuclear and Nucleon Nuclear Interactions, Weak Interactions of Pions and Muons. The Scientific Secretary is Dr W Fischer, CH-5234 Villigen, Switzerland. More detailed information should be available during November.

FOUND

The following items of personal property have been found:

One pen, one raincoat and one ladies ring

Enquiries about the above items should be made to Mrs C E Smith, Building R1, Ext 6693.

UNDELIVERABLE MAIL

Mail addressed to Dr H de Groot and Dr L Dick can be obtained from the Editor.

OVERSEAS VISITS

Mr G S Grossart, Mr R J Elsey and Mr D R Moore, to the Hague, Netherlands, 15 - 20 October to attend as members of the British Delegation, a meeting of the International Standards Organisations Technical Committee and various sub committees.

Mr P Mackay and Mr W G L Russett, to CERN, 15 - 27 October, for servicing of gas purification rigs on p-p experiment.

Dr T P Shah, to CERN, 16 October - 1 November, to take part in an experiment with the CERN 2 metre Hydrogen Bubble Chamber.

SOCIAL NEWS

RUTHERFORD AND ATLAS ANGLING CHAMPIONSHIP

The championship was fished on Saturday 30 September at Newbridge-on-the-Thames in ideal conditions (weather wise that is). The fish had other ideas; rumour has it that they had all gone on holiday, in fact someone was actually seen entering the water (perhaps looking for the fish). The Editor heard a different and much more likely version of this story! Tony Jefferies was this year's winner, just $\frac{1}{2}$ ounce in front of Charlie Halliday and Peter Craske with Mick Jeffries in fourth place. Fourteen took part in the championship.

CHESS CHAMPIONSHIP

The championship is now under way, with thirty-one competitors at their battle stations. Will Bill Turner, the defending champion make it six in a row or as the grapevine reports, will someone lower his colours. Watch this space for further news.

RUTHERFORD AND ATLAS RECREATIONAL SOCIETY DANCE

The Recreational Society's next dance will be on Friday 3 November, in the Restaurant, Building R22. Dancing to the "Worlds Apart", 8 pm to 1 am, licensed bar, chicken supper etc. Tickets at 65p from Mrs T Batchellier R34, Mrs M Stoker R1, Mrs V Goodwin R1, Mr F Cooke R9 and Mr J Rice R2.

RUTHERFORD FOLK CLUB

The next meeting at 8 pm on Friday 13 October in the Coffee Lounge, R22 features Mike Harding on banjo and guitar. Traditional and (it says) very funny.

CHRISTIAN FELLOWSHIP

Have you read any interesting or inspiring books lately? If so, join us in an informal discussion on any such literature. Dennis Williams will lead the discussion which is at 12.30 pm on Friday 20 October in the Conference Room, Building R12.