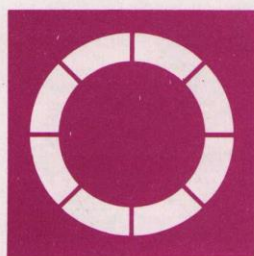


No 39 / 70
2 Nov 70



Rutherford Laboratory Bulletin

General News

CORRECTION. Seminars in Computing. Please note that the time given in last weeks Bulletin was incorrect. The seminar on Friday, 30 October will start at 11.0 a.m. as will the following seminars in this series. Any alteration will be shown in the appropriate Bulletin.

EXCHANGED RAINCOATS. If the owner of a fawn "Queirayn" raincoat, who has accidentally taken the wrong one from the restaurant will contact J.C. Hart, Bldg Rt, Room 2.8 Ext 6196, he will be able to swap back again.

FILM NOTICE. Period 12 commences Monday, 2 November. Colour Strip - PURPLE for $\beta\gamma$ films and fast neutron packs. Please change your films promptly and return all old ones. Six month TLD change for people with surnames commencing with S.T.U.V.

UNDELIVERABLE MAIL - for Dr D Walwyn-James and Ron Bell. These can be claimed from H F Norris R20, Ext 484.

NATIONAL SAVINGS CERTIFICATES - SALARY CYCLE ENDING 31-10-70

Certificates can be collected from the Cash Office, R20, from 2-11-70 onwards. New members wishing to join the scheme can obtain enrolment forms from the Cash Office. Enrolment forms must be returned not later than 2-11-70.

OVERSEAS VISITS. Mr N M King and Mr G H Rees, to the U.S.A., 1-13 Nov., for discussions on superconducting synchrotron design at BNL and LRL, and high energy machine utilization at NAL.
Dr I F Corbett and Dr N H Lipman, to CERN, 2-7 Nov and 3-7 Nov, respectively, to attend Omega meeting.
Dr J Phelan and Dr R J Miller, to Ecole Polytechnique, Paris, 3-4 Nov., to attend collaboration meeting on the 14 GeV experiment.
Mr H Hurst, to Pisa, Italy, 5-8 Nov., to attend the Share European Association Executive Board Meeting.

Machine Schedules

NIMROD Cycle 14 (3-11-70 - 24-11-70)
Machine Physics
High Energy Physics

Team	Beam	Experiment	
Surrey/B'ham/RHEL	π 10	Total Reaction Cross-Sections for Pions on Nuclei.	Setting up.
Camb. Univ	X1/K9	Pion Production in n-p Collisions	Data
B'ham/RHEL	X2/K12A	K^+ -n Elastic Scattering between 450 and 950 MeV/e	Setting up/Data
Camb U/RHEL	X2/K13	Testing of Apparatus - Future Experiments	Setting up.
Oxford U/RHEL	X2/K14A	Polarization Effects in π^+ p Elastic Scattering	Data
Westfield Coll/RHEL	X3/ π 8	Measurement of Eta Decay Assymetry	Data
Bristol U/RHEL	X3/K15	K^+ p Differential Cross-Sections from 1.07 - 2.0 GeV/c	Data

Internal Events

Mon, 2 Nov., 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. G. Kaimus (LRL and CERN)	Strange Particle Production in π^+ p Interactions between 1 and 2 GeV/c
Wed, 4 Nov., 11 a.m., Conf. Rm., Rt	HEP Disc Grp	D T Williams (Q.M.C)	pp Scattering at Large Angles in the Momentum Interval 1.5 - 5.0 GeV/c
Mon., 9 Nov., 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. A. Lundby (CERN)	π^+ p, K^+ p, and \bar{p} p Elastic and Inelastic Scattering at 5 GeV/c

External Events

Mon., 2 Nov., 4.15 p.m., Queen Mary Coll., London	Theor.Phys.Seminar	Dr R B Jones (Q.M.C.)	A Model of Chiral Symmetry Breaking
Mon., 2 Nov., 5 p.m. Univ. of Reading	Colloq	Prof N. Kurti (Oxford)	Nuclear Cooling and Nuclear Refrigeration
Mon., 2 Nov., 5 p.m. Univ. of Bristol	Phys. and Geo-Phys Colloq	Dr S Mardix (Hebrew U., Jerusalem and Bristol U.)	Polytypism and Lattice Imperfections in Zinc Sulphide
Tues., 3 Nov., 2.30 p.m., Daresbury Laboratory	Lecture Series	G Kaimus (LRL and CERN)	Strange Particle Production in π^+ p Interactions between 1 and 2 GeV/c
Tues., 3 Nov., 6.15 p.m., The College Swindon	IEE Branch Meeting	B.R. Webster (C Eng FIEE)	Colour Television
Fri., 6 Nov., 2.30 p.m., Clarendon Lab., Oxford	Elementary Particle Theory Seminar	Dr Kwiecinski (RHEL)	Threshold Sum Rules for Unitarity

EVENTS AT AERE

Mon., 2 Nov., 2 p.m.,
Lecture Rm., bldg 8.9
Thurs., 5 Nov., 3.30 p.m.,
Conf., Rm., H.8

Theor. Phys
Seminar
Nucl.Phys., Div.
Colloq

Dr D W Sciama (Oxford)

Mr M N Wilson (RHEL)

Gravitational Waves

Applications of Superconductivity

Social News

HORTICULTURAL SOCIETY EVENING. Tickets are now available for the first of the winter season of lectures which will be given by Konrad Engbers of Hyde Farm Nurseries on Tuesday next., 3 November., 7.15 for 7.30 p.m. in the Rutherford Laboratory Lecture Theatre. Tickets can be obtained from H.F. Norris, Room 42, R.20., Ext 484, at 3/- each which includes a lucky ticket draw and refreshments.

Konrad will talk on "Success with House Plants" and anyone who attended his lecture/demonstration on Fuchsias, last June will know that one can expect first class advice and a lot of laughter.

The next lecture will be given by J.K. Burras, Superintendent of the Oxford Botanic Gardens on Tuesday 15 December. More details later.

C.S.M.A. OXFORD BRANCH. Thursday, 5 November. "Bangers and Bangers", a firework display with a free competition for the best made 'Guy' entered by children. The evening rounded off with hot coffee and sausage rolls. VENUE - Caldecott House, Abingdon. Tickets (in advance) - Children 2/-, Adults 3/- from local rep - L N Dutton, R25, Ext 224.

DARTS MINI-WORLD CUP. Result of the remaining quarter final - B Crane beat K Feukins 2 - 0

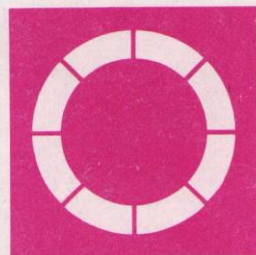
CHRISTIAN FELLOWSHIP. Friday, 6 Nov., 12.30 p.m., R12 Conf. Rm.
Prayer Meeting led by Dennis Williams. All welcome.

Rutherford Laboratory
30-10-70

H-F NORRIS. Ext 484
Scientific Admin Group
Building R20

saw

40
No 40/70
9 Nov 70



Rutherford Laboratory Bulletin

General News

VISITORS During the evening of Tuesday, 10 November, about 150 members of the British Computer Society will visit the Laboratory. They will be taken, in small groups, to visit the K14A and $\pi 8$ on-line computers, film analysis and HPD Laboratories and the Central Computing System.

ZONTA International Amelia Earhart Fellowship for Women. Zonta International is an organisation of business and professional women executives, and these awards are offered to women graduates for advanced study in aerospace sciences as a memorial to Miss Amelia Earhart, the distinguished airwoman. Further information from Training Section, Building R20, Ext. 266.

FILM NOTICE It is Period 12. Colour Strip - PURPLE for $\beta\gamma$ and fast neutron packs. Please check that you are wearing the correct films. Also, make sure that the $\beta\gamma$ film is worn, in the holder correctly, i.e. - with both the number and the colour strip visible.

OVERSEAS VISITS Dr G R Stevenson, to CERN, 9-10 Nov, to attend 300 GeV Radiation Problems Meeting.
Dr L C W Hobbs and Dr J M Valentine, to Grenoble, 9-11 Nov, for discussions at the Institut Max Von Laue - Paul Langevin.
Mr M R Harold and Mr V C Cloke, to the USSR, 10-19 Nov, to attend 2nd National Accelerator Conference in Moscow.
Mr M Snowden and Dr N D West, to the USSR, 10-25 Nov, to attend 2nd National Accelerator Conference in Moscow (at which Dr West will present a paper) and to visit Serpukhov and Leningrad.
Mr H O Normington, Mr E W G Wallis and Mr L Phillips, to CERN, 10-12 Nov for discussions on the installation of the \bar{p} -p experiment.

Machine Schedules

NIMROD Cycle 14 (3.11.70 - 24.11.70)

Machine Physics: High Energy Physics ($\pi 10$, X1/K9, X2/K12A, X2/K13, X2/K14A, X3/ $\pi 8$ and X3/K15).
Full details of Cycle 14 were given in Bulletin No 39/70.

Internal Events

Fri, 6 Nov, 11 a.m., Conf. Rm, R12	Seminar in Computing	Dr R Taylor	On-line Work from a Systems Viewpoint.
Mon, 9 Nov, 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. A Lundby (CERN)	π^+p , K^+p , and $\bar{p}p$ Elastic and Inelastic Scattering at 5 GeV/c
Mon, 9 Nov, 2.30 p.m., Lecture Theatre	Nimrod Proposal Lectures	1. Proposal No 84 - "A Proposal to Study $K^+p \rightarrow \Sigma^0 \pi^0$ Between 400 and 800 MeV/c" UCL, B/C Grp. Lecture by Dr D J Miller (UCL) 2. Proposal No 87 - "A Proposal to Measure the Associated Production Reaction $\pi^+ p \rightarrow K^0 + \Lambda^0$ Between Threshold and 1.5 GeV/c". Camb.U/RL.Lecture by Dr T G Walker.	
Wed, 11 Nov, 11 a.m., Conf. Rm, R1	HEP Disc Grp.	P Litchfield (RHEL)	Partial Wave Analysis of K^+p Elastic Scattering in the Momentum Interval 1.25 - 1.85 GeV/c.
Wed, 11 Nov, 12.40 p.m. Thurs, 12 Nov, 1.15 p.m. Lecture Theatre	Film Show	"Return to Bikini," a 28½ min, Colour film from the USAEC	

An award winning film, made in 1966, which describes a scientific survey by a team from the Laboratory of Radiation Biology of the University of Washington to determine the conditions of the Bikini and Euiwetok atolls six years after the last nuclear test detonations. The scientists found that a tremendous recovery had taken place and the atolls were once again lush with vegetation and teeming with life.

This is the first film in the 1970-71 lunch time season; however as bookings are proving difficult there may be some gaps in the programme until the end of this year.

Fri, 13 Nov, 12.45 - See Social News for details of a lunch time 'extra'.

Mon, 16 Nov, 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. D H White (Cornell U/UCL)	Pion Charge Exchange in the Backward Direction at High Energies at BNL.
---	--------------------------	------------------------------------	--

External Events

Mon, 9 Nov, 4.15 p.m. Queen Mary Coll, London	Theor. Phys. Seminar	Prof. D J Thouless (Birmingham)	Ising Model with Long Range Interactions.
--	-------------------------	------------------------------------	---

Tues, 10 Nov, 2.30 p.m., Daresbury Laboratory	Lecture Series	H H Bingham (Berkeley & CERN)	Photoproduction Reactions using the SLAC Polarised Laser.
Tues, 10 Nov, 7.30 p.m., Univ. of Reading	IEE Reading Branch Meeting	J I Bird (CEGB, S.W. Region)	Present and Future Problems of Operation of the British Grid System.
Wed, 11 Nov, 2.30 p.m., Univ. of Manchester	Theor. Phys Seminar	Dr J C Stoddart (Sheffield)	One-Body Potentials including Electron Interactions in the Density Functional Approach to Atomic and Solid State Calculations.
Wed, 11 Nov, 7 p.m. Culham Laboratory	IEE Oxford Branch Meeting	C D Freeman (Crypton Triangle Ltd)	The Electronic Performance Testing of Motor Vehicles.
Thurs, 12 Nov, 4.15 p.m., Clarendon Lab, Oxford	Theor Phys Seminar	Dr P K Mitter	Unrenormalized Fields and Weak Interactions.
Thurs, 12 Nov, 8.30 p.m. Nuclear Phys Lab Oxford	Seminar in Elemt. Part. Phys.	Dr G V Dass (RHEL)	CPT Invariance in Neutral Kaon Decays.
Fri, 13 Nov, 2.30 p.m., Clarendon Lab, Oxford	Elemt. Part Theory Seminar	D Morgan (RHEL)	Background to one Pion Exchange in Dipion Production, and the Vector Dominance Model.
EVENTS AT AERE			
Thurs, 12 Nov, 3.30 p.m., Conf. Rm., H.8	Nucl. Phys. Colloq.	Mr N J Pattenden (NP Div)	Anisotropy of Resonance Fission Fragments in Aligned ^{235}U Nuclei and Nuclear Physics in Australia.

Social News

AERE HORTICULTURAL SOCIETY On Friday, 13 November, colour slides will be shown in the RL Lecture Theatre commencing 12.45 p.m. of the September Show. In addition slides will be shown of (a) The Best and Best Kept Garden (including fruit and vegetables) Competition which was won by Mr Frere and (b) The Best Flower Garden Competition (a new class this year), won by Mr England. It is hoped that both Mr Frere and Mr England will be able to attend and give commentaries on their respective gardens.

CHRISTIAN FELLOWSHIP 12.30 p.m., Friday 13 Nov, Conf Rm., R12. Bible Study on St Paul's letter to the Galatians, Chapter 4, led by Denis Peplar. Everyone welcome.

CSMA OXFORD GROUP Holiday '70. Bring your own slides or photographs along to the 'Old White House, Abingdon Road, Oxford, at 8 p.m. and tell our members about the highlights. Local rep: L N Dutton R25, Ext 224 for further information.

DARTS MINI-WORLD CUP: Results of both Semi-finals are now to hand, - Mike James beat John Mackerness, 2-1
Barry Crane beat Ron Pike, 2-0.

LUNCH TIME DARTS LEAGUE The league will shortly be starting a new season. Teams of 2 players will play 4 singles and one doubles games in a match. Entry fee 1/- per player. Team names to Alan Slater, Ext. 232 or John Rice Ext. 275. Closing date 13 November.

SIX-A-SIDE FOOTBALL LEAGUE Results - R9 - 3, Nimrod - 2, Hall 3 - 2, R25 - 1, R18 - 1, Nimrod - 0, Atlas - 2, R9 - 1.
Fixtures - R9 v Hall 3 (Fri 6 Nov), Atlas v R18 (Tues, 10 Nov), R25 v Atlas (Fri, 13 Nov).

REC. ASSOCIATION DANCE This has been a sell out and all the tickets have gone. We hope it will be a very successful evening.

CONTAINERS The Rec. Assoc. still has some 5 gallon plastic containers for sale at 2/- each, and some of the smaller 1 gallon size at 1/- each. Ring John Rice Ext. 275 or Peter Craske, Ext 275.

Rutherford Laboratory
6 11 70

H F NORRIS Ext 484
Scientific Admin Group
Building R20

STOP PRESS

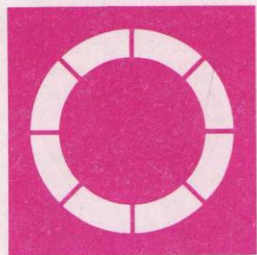
Thurs, 12 Nov, 11 a.m.,
Conf. Rm., R12

HEP Disc Grp

B Dutta-Roy
(Stevens Inst. of Tech)

Asymptotic Helicity Conservation
and Implications for Low Energy
 πN Scattering.

No 41/70
16 Nov 70



Rutherford Laboratory Bulletin

RUTHERFORD AUTUMN TREBLE

- 1. POWERFUL NEW COMPUTER FOR THE LAB.** The Science Research Council has placed a £3.6M order for one of the world's most powerful computers, an IBM 360/195. It will be installed in the Rutherford Laboratory in the autumn of 1971 as a replacement for the 360/75. The computer, which will be between 5 and 7 times as powerful as the 360/75 will provide an important addition to the SRC's central computing facilities. It will be used by the Laboratory staff and by University nuclear physicists to process data arising from experiments on British particle accelerators and from CERN. The Atlas Computer Laboratory will also make use of the new computer to support its own extensive computational services to universities and other research institutions.
- 2. SUPERCONDUCTING BEAM TRANSPORT - ANOTHER SIGNIFICANT STEP FORWARD.** The Superconducting Applications Group report that a successful series of performance tests were made last week on a full-scale, epoxy resin impregnated, superconducting quadrupole coil assembly. Currents between 95% and 97% of the 1360A maximum (critical) current were repeatedly achieved, corresponding to a peak magnetic field of 40KG in the 12 cm bore, with an overall current density of 27,000 A/cm² in the winding cross section. This is believed to be the first clear demonstration that the stable filamentary composites evolved by this group will make possible the construction of simple, high current density, (and potentially economic) superconducting coil systems suitable for high field beam transport elements.
- 3. NIMROD'S RECORD INTENSITY.** Nimrod ran for a period during the weekend of 24/25 October at a record breaking intensity of over 3×10^{12} protons per pulse. At this time the extracted beam measured at the X3 external target station was 1.18×10^{12} protons per pulse.

General News

VISITORS. Thirty-two Assistant Principals of the Administrative Class on a course at the Civil Service College will visit the Laboratory on Friday, 20 November.

MISSING PACKAGE. A package labelled Vas Desmuk containing a navy blue jacket has been reported missing. Any information (or the package!) to Colin Walters, Building R25, Ext 6152/288.

FILM NOTICE. It is Period 12. Colour Strip - PURPLE for $\beta\gamma$ and fast neutron packs. Please check that you are wearing the correct films and that all old ones are returned.

CENTRUM HEADPHONES. A set of Centrum headphones is no longer required by the original purchaser. Will anyone interested in obtaining this item please contact Mrs E W Smith, Building R1, Room 2,89, Ext 324.

OVERSEAS VISITS. Mr N J Beadle, to CERN, 15-17 Nov., to discuss and assist with \bar{p} -p experiment equipment. Miss M J Eggleton and Mr D G Rose to CERN, 16-18 and 16-27 Nov respectively to undertake a check of equipment at CERN. Dr R J N Phillips, to Copenhagen, 15-17 Nov, to give lecture at Nordita.

UNDELIVERABLE MAIL. Mail has been received for Mr F H Combley, Dr G P Haskell and Mr Holt. Enquiries to H F Norris, Ext 484.

Machine Schedules

Peter Smith contact.

NIMROD Cycle 14 (3.11.70 - 24.11.70)

Machine Physics: High Energy Physics (π 10, X1/K9, X2/K12A, X2/K13, X2/K14A, X3/ π 8 and X3/K15)

Full details of Cycle 14 were given in Bulletin No 39/70.

Internal Events

Mon., 16 Nov., 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. D H White (Cornell U./UCL)	Pion Charge Exchange in the Backward Direction at High Energies at BNL.
Mon., 16 Nov., 2.15 p.m., Lecture Theatre	Nimrod Users Meeting	1. Safety in Experimental Areas 2. Long Term Schedule 1971 3. Progress Reports on Experiments	- D A Gray - P J Duke - Team Leaders

Tues., 17 Nov., 10.30 a.m. - 4 p.m. approx, Conf. Rm., R12. Seminar/Demonstration by Database of computer peripheral equipment. The following items will be demonstrated - (1) An alphanumeric visual display unit employing modular internal store, unique paging feature, editing facilities and teletype compatibility. (2) A 30 c p s serial printer also teletype compatible but offering multiple copy and 132 column print width, it is available in Ro, KSR and ASR versions and (3) A buffered 300 lines-per-minute low cost line printer. Further technical information from H F Norris, R20 Ext 484.

Tues., 17 Nov., 11.30 a.m., Lecture Theatre	Special Lecture	Dr W B Street (U S Military Academy, West Point, N.Y.)	The Structure and Motions of Jupiters Great Red Spot.
--	-----------------	--	---

Dr Street's lecture is a follow up, to the recent talk by Dr Hide on 'Motions in Planetary Atmospheres and he will produce an alternative approach to the theory given on Jupiters Red Spot.

Wed., 18 Nov., 11 a.m., Conf.Rm., Bldg.R1.	HEP Disc Grp	Dr J C Sleeman (RHUL)	Polarisation Measurement in π^+p Elastic Scattering
---	--------------	-----------------------	---

Wed., 18 Nov., 12.40 p.m.	Film	European Organisation for Nuclear Research, a 20 min colour film.	
Thurs, 19 Nov., 1.15 p.m.	Show		

Lecture Theatre

Many requests have been received for a repeat showing of the CERN film which was made in 1967 by the Swiss Film director, Guido Franco in collaboration with the Public Information Office. Although not universally acclaimed, this very colourful and often amusing production does portray vividly the atmosphere of a large international research establishment.

Fri., 20 Nov., 11 a.m.,
Conf.Rm., R12
Mon., 23 Nov., 11.30 a.m.,
Lecture Theatre

Seminar
In Computing
Nimrod Lecture
Series

M Jane
(please note change of venue)
Dr E Gabathuler (DNPL)

H E P Experiments On-Line to a Small Computer
Present and Future Physics with Electron Storage
Rings.

External Events

Mon., 16 Nov., 4.15 p.m.,
Queen Mary College

Theor Phys
Seminar

Dr A J Macfarlane (Cambridge) Field Algebra and Weak Interactions.

Mon., 16 Nov., 5 p.m.,
Univ. of Reading

Colloq

Prof H M Frey (Reading)

Problems in Unimolecular Reaction Theory.

Wed., 18 Nov., 2.30 p.m.,
Univ of Manchester

Theor Phys
Seminar

Dr P Hutchinson (Harwell)

Some Work in Chemical Engineering

Thurs., 19 Nov., 4.15 p.m.,
Clarendon Lab., Oxford

Theor Phys
Seminar

Dr G A Brooker
(Clarendon)

Non-equilibrium Properties of a Fermi
Liquid

Thurs., 19 Nov., 8.30 p.m.,
Nuclear Phys. Lab, Oxford

Seminar in Elemt
Part Phys

Prof P E Schlein (CERN, on
leave from UCLA)

Some Recent Experiments in the Study of the $\pi\pi$
Interactions.

Fri., 20 Nov., 2.30 p.m.,
Clarendon Lab., Oxford

Elemt. Part.
Theory Seminar

Dr H Jones (I.C.)

Covariant Reggeization and the Implications of
s-channel Helicity Conservation.

EVENTS AT AERE

Tues., 17 Nov., 2 p.m.,
Lecture Theatre Bldg 8.9

Theor Phys
Seminar

Dr A Bodmer (Oxford and
ANL)

Binding Energy of a Λ particle in Nuclear Matter:
A Nuclear Many-Body Problem

Thurs., 19 Nov., 3.30.,
Conf.Rm., H8.

Nucl Phys
Colloq

Dr S Blow (Materials
Physics Div)

Aid from Nuclear Physics for the Fusion Reactor
Programme

Social News

AERE SOCCER SIX-A-SIDE TOURNAMENT. RHEL went through to the semi-final by beating Bldg 501 by 4 goals to 2, John Macherness scoring a fine hat trick.

DARTS MINI-WORLD CUP. In the final Barry Crane beat Mike James, 2 - 0.

RHEL SIX-A-SIDE FOOTBALL LEAGUE. Results, Hall 3 - 1, R9 - 0; Atlas - 0, R18 - 6.
Fixtures. Tues., 17 Nov., Nimrod V Hall 3. Fri. 20 Nov, R18 V R9.

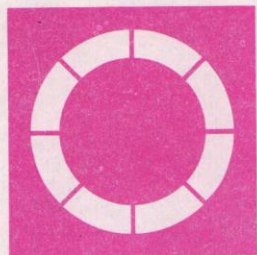
This competition is coming to an end and it has been very successful and enjoyable. Anybody wishing to participate in future games and competitions should contact H Jarvis, R2, Ext 205.

CHRISTIAN FELLOWSHIP. Fri. 20 Nov., 12.30 p.m., Conf. Rm., R12.
Everyone welcome to come along to the Fellowship meeting on Friday.

Rutherford Laboratory
12-11-70

H F NORRIS, Ext 484
Scientific Admin Group
Building R20

No 42/70
23 Nov 70



Rutherford Laboratory Bulletin

General News

NUCLEAR PHYSICS BOARD MEETING. On the afternoon of Tuesday, 24 November the Nuclear Physics Board will be holding a meeting at the Laboratory. Some members of the Board will visit selected areas of the Laboratory during the morning.

RUTHERFORD LABORATORY LECTURES. The next lecture in this series will be at 3.15 p.m. on Thursday, 3 December in the Lecture Theatre. The lecture will be given by Professor J Z Young FRS, Professor of Anatomy at University College and his subject will be "Memory". More details next week.

FILM SHOWS. Showing times for the lunch time films are being revised. The first showing on Wednesdays will be at 1.15 p.m. and the repeat on Thursdays at 12.40 p.m. It is hoped this will reduce the number of changes in showing times due to lectures or conferences being held in the Lecture Theatre.

SITE EMERGENCY KLAXONS. There will be a test of site emergency klaxons at 10.0 a.m. on Wed 25 Nov. The sounding sequence for testing will be:-

ALL CLEAR - a steady note for 10 seconds
SILENCE - for 10 seconds
WARNING - an interrupted note for 30 seconds
SILENCE - for 10 seconds
ALL CLEAR - a steady note for 10 seconds

The duration of this test is 1 minute, 10 seconds and Building Wardens are asked to report on the audibility of Klaxons to Mr D C Rance Building RI.

POPPY APPEAL. A letter has been received from the organisers of the 1970 Poppy Day Appeal thanking all those who collected and those who contributed to the British Legion's Fund for those in need. This year the Laboratory's contribution rose by nearly £10 to £34 9 2.

FILM NOTICE. It is Period 12. Colour Strip - PURPLE for $\beta\gamma$ and fast neutron packs. Please check that you are wearing the correct films.

At the next $\beta\gamma$ film change, 30 Nov, there will be no issue of fast neutron packs due to the Nimrod shutdown.

MISSING EQUIPMENT. The following item of equipment has been reported missing:-

Tektronix Pretrigger Generator, Type III - Ser/No 000905

Anyone with information on the present whereabouts of this item is asked to contact Mr R S Milborrow, R36, Ext. 298.

UNDELIVERABLE MAIL. Mail has been received for Mr T L Thomas Mr I Gillham and Mr P J Howziger. Enquiries to the Editor please.

OVERSEAS VISITS. Mr D A Gray, to CERN, 25-26 Nov, to attend meeting of the 300 GeV Machine Committee.

Machine Schedules

NIMROD Cycle 14 (3.11.70 - 29 11 70) Please note Cycle 14 extended to 29 11 70.
Machine Physics: High Energy Physics ($\pi 10$, $X1/K9$, $X2/K12A$, $X2/K13$, $X2/K14A$, $X3/\pi 8$ and $X3/K15$)
Full details of Cycle 14 were given in Bulletin No 39/70.

Internal Events

Mon, 23 Nov, 11 a.m. Lecture Theatre	Nimrod Lecture Series	Dr E Gabathuler (DNPL)	Present and Future Physics with Electron Storage Rings
Wed, 25 Nov, 11 a.m. Conf. Rm, RI	HEP Disc. Grp.	Dr R G Roberts (RHEL)	Unitarity Effects for Inelastic and Elastic Scattering.
Wed, 25 Nov, 1.15 p.m. Thurs, 26 Nov, 12.40 p.m. Lecture Theatre	Film Show (please note change of times - see note in Gen. News).	History of Motor Racing - Part I "The Heroic Days", a 32 min, black & white film	

This film was first shown in November 1965 and many requests have been received for a repeat showing. The film covers the period 1902-1914, beginning with the 1902 Paris - Vienna race and ends with the sensational French Grand Prix of 1914. As well as being a very funny film it is also extremely interesting, both from the subject matter and the early filming techniques. It was compiled from contemporary film and reports of that period and the piecing together of this material has produced a remarkable film with an exciting and unusual sound track.

Mon, 30 Nov, 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Dr T Fields (Birmingham Univ.)	Two-Body Final States in $\bar{p}p$ Annihilation.
---	-----------------------	--------------------------------	---

External Events

Mon, 23 Nov, 4.15 p.m. Queen Mary Coll, London	Theor. Phys. Seminar	Prof. W. Harrison (Stanford & Cambridge)	Generalisation of Pseudo-Potential Methods.
Mon, 23 Nov, 5 p.m. U. of Bristol	Phys & Geo-Phys. Colloq.	Dr E R Pike (RRE, Malvern)	Optical Spectroscopy in the Frequency Range 1 to 10^8 Hz
Tues, 24 Nov, 2.30 p.m. Daresbury Laboratory	Lecture Series	M R Jane (RHEL)	New Measurements of η_{00} and ϕ_{00} in K Decay
Wed, 25 Nov, 2.30 p.m. Univ. of Manchester	Theor. Phys. Seminar	Prof. R Pecora (Manchester & Stanford)	Light Scattering off Thermal Fluctuations in Liquids.
Thurs, 26 Nov, 4.15 p.m. Clarendon Lab, Oxford	Theor. Phys. Seminar	Dr D M Edwards (Imp. Coll.)	Electron Correlations in the Transition Metals.

EVENTS AT AERE

Tues, 24 Nov, 2 p.m. Lecture Room, Bldg 8.9	Theor. Phys. Seminar	Dr D Wilmore (AERE)	Diffusion of Water & Corrosion in Graphite
Thurs, 26 Nov, 3.30 p.m. Conf. Rm, H.8	Nucl. Phys. Colloq.	Dr A S Clough (Surrey)	Photoproduction of Hadrons on Hydrogen and Deuterium

Social News

RUTHERFORD RECREATIONAL ASSOCIATION DANCE. The dance last Friday was a great success, over 400 people danced to the Vic Good Band who played a high standard of music throughout the evening. John Rice says "we haven't had any complaints (we hope!) although the next dance will be limited owing to the lack of seating available in the restaurant".

The Rec. Assoc. would like to thank all the people who helped to make the dance such a success and hope the next dance will be as well supported.

AERE SIX-A-SIDE SOCCER TOURNAMENT RHEL are through to the final. They beat Bldg 351 by 1-0 and John Mackerness after his hat trick in the quarter final scored the only goal of the match. The final is against Bldg 459 so how about some support for the Lab team on the big day. The Kick-off is at 12.30 p.m. on 2 Dec at AERE.

RUTHERFORD LAB SIX-A-SIDE SOCCER LEAGUE

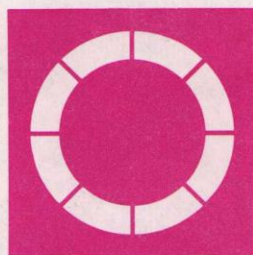
Result	Atlas - 1, R25, 0
Fixtures	Fri 20 Nov - R18 v R9 Tues 24 Nov - Hall 3 v Atlas Fri 27 Nov - R25 v Nimrod

DARTS LEAGUE Twenty four teams have entered the league this season and matches began this week. Progress reports will be issued during the season.

CHESS TOURNAMENT 1970 The tournament is well under way and the position after 3 rounds is that the leading group, Fred Lunnon, Bill Turner, Alan Gilby and Noel Stewart have 3 points apiece. Colin Uden and Peter Craske have both dropped $\frac{1}{2}$ point and they are being chased by a big group of players with 2 points. Once again Bill Turner is in the leading group and the big question is, will he make it 3 in a row.

CHRISTIAN FELLOWSHIP Fri, 27 Nov, 12.30 p.m. R12 Conf Rm.
The speaker will be the Rev R Chewtor of the Pattern Church Newbury. All are welcome.

No 43/70
30 Nov 70



Rutherford Laboratory Bulletin

General News

RUTHERFORD LABORATORY LECTURE. The next talk in this series will be given by Prof. J Z Young who is Professor of Anatomy at University College. He is best known to the layman for his experiments on learning by octopi, using crabs with different markings, some of which gave electric shocks. In 1950 he gave the Reith Lectures (BBC) on "Doubt and Certainty in Science," which were subsequently published in 1951 under the same title. He is interested in parallels between the brain and the computer and in his talk entitled "Memory", he will present evidence as to the nature of the system for recording in the memory of the nervous system. Closed circuit television will be in use in the Coffee Lounge as many people will no doubt wish to see and hear Prof. Young. The lecture is at 3.15 pm on Thursday, 3 December.

THE BULLETIN AND ITS READERS. Many people are unaware of the wide distribution of the Lab Bulletin. Apart from its internal distribution it is sent out, by request, to many outside establishments, universities and individuals. As an example of this wide distribution a letter was received this week by the Director from Mr L B Mullett who is at the Ministry of Transport, in which he has some nice things to say about the recent 'Autumn Treble' item in the Bulletin. Mr Mullett, as a lot of people will know, was the Assistant Director at the Rutherford Laboratory in the early years. It is nice to know that he still has an interest in the activities of the Laboratory.

MECHANICAL HANDLING SAFETY TRAINING - SLINGING. A third session of about an hour has been arranged which will include a film, slides and demonstrations with an opportunity for discussion. It is designed for the benefit of people who carry out or supervise any slinging operation, e.g. - who attach a load to a crane hook, and who were unable to attend one of the first two sessions. This third session will be held in the Lecture Theatre at 2.15 pm on Monday 7 December.

VISITORS. Thirty-one members of the Cambridge University Mathematical Society will visit the Laboratory on Thursday, 3 December.

FILM NOTICE. Period 13 commences Monday, 30 November. Colour Strip - GREEN for 8y films. Fast neutron packs will not be issued during the Nimrod shutdown, i.e. for the next two periods.
All old fast neutron packs must be returned.

TLD issue to people with surnames commencing W,X,Y,Z.

WELCH FOUNDATION SCHOLARSHIP 1971-72. A one-year scholarship is offered to one or more students or young scientists who want to contribute to research in the field of vacuum science and technique. The scholarships, which are administered by the International Union for Vacuum Science, Technique and Applications, are tenable at certain laboratories in Germany, Canada, USA, Netherlands and the U.K. Further information from Training Section, Bldg. R20, Ext 266.

NATIONAL SAVINGS CERTIFICATES - WEEKLY CYCLE ENDING 11-12-70. Certificates can be collected from the Cash Office, R20, from 14-12-70 onwards. New members wishing to join the scheme can obtain enrolment forms from the Cash Office. Completed forms must be returned not later than 11-12-70. Monthly cycle ended 2-11-70 - Members who have not yet collected their certificates are requested to do so as soon as possible.

BRITISH CRYOGENICS COUNCIL PRIZE. A prize of £50 will be awarded every two years to the scientist or engineer who, in the opinion and to the best knowledge of the Board of the British Cryogenics Council, has made the most outstanding contribution to cryogenics in the U.K. through the discovery of some new phenomenon or the development of a new device or process. The first award will cover the period January 1969 to December 1970.

Full details of this award can be obtained from H.F. Norris, R20, Ext. 484.

OVERSEAS VISITS. Mr D Booker and Mr V Thorpe to Liege, 29 Nov, for a short visit to take part in discussions on the TDI satellite project.

Dr L C W Hobbs, to Grenoble, 1-3 Dec., for discussions.

CRYOGENIC BUBBLE CHAMBER NEWS. Early on Wednesday, 25 November, the millionth picture in this year was taken on the Cryogenic Bubble Chamber.

Internal Events

Mon, 30 Nov., 11.30 am., Lecture Theatre	Nimrod Lecture Series	Dr T Fields (Birmingham Univ.)	Two-Body States in $\bar{p}p$ Annihilation.
Wed., 2 Nov., 11 am., Conf.Room., R1	HEP Disc Grp	Dr J Kwiencinski	Threshold Sum Rules from Unitarity
Wed., 2 Nov., 1.15 pm Thurs., 3 Nov., 12.40 pm Lecture Theatre	Film Show	Lubrication of Rolling Bearings, a 30 minute colour film	
Historical development, types of bearings, methods of manufacture are touched on. The theory of rolling and the consideration of the need for and the mechanism of lubrication follow. The film ends with uses of bearings and the different lubricants needed.			
Thurs., 3 Nov., 3.15 pm Lecture Theatre	Rutherford Laboratory Lecture	Prof. J Z Young FRS (Prof. of Anatomy at UCL)	'Memory' (see Gen. News)
Fri., 4 Dec., 11 am., Conf Rm., R12	Seminar in Computing	D B Scott & R Rosner	Graphics: Progress to Date and Future Policy.
Mon 7 Dec., 11.30 am., Lecture Theatre	Nimrod Lecture Series	Dr K Moriarty (Imp Coll)	The Inclusion of Spin in a Phenomenological Yenitcano Model with Applications to Three Particle Production.

External Events

Mon, 30 Nov., 4.45 pm., Queen Mary Coll, London	Theor. Phys. Seminar	Dr C J Isham (Imp Coll.)	Spontaneous Breaking of Conformal Symmetry.
Mon, 30 Nov., 5 pm., Univ of Reading	Colloq.	Prof N E Cusack (U. of East Anglia)	Electron Transport - Metallic Fluids.
Mon, 30 Nov., 5 pm., U. of Bristol	Phys and Geo-Phys Colloq.	Dr D J Dlugosz (Bristol)	The Structure of Polyethylene Spherulites
Tues., 1 Dec., 2.30 p.m., Daresbury Laboratory	Lecture Series	Dr R J N Phillips (RHEL)	The Serpukhor Regeneration Mystery
Wed., 2 Dec., 2.30 pm., U. of Manchester	Theor Phys Seminar	Prof P G Burke (Belfast)	The Calculation of Atomic Properties
Thurs, 3 Dec., 4.15 pm., Clarendon Lab., Oxford	Theor Phys Seminar	Dr C Wilkin (UCL)	Recent Applications of Glauber Theory
Fri., 4 Dec., 2.30 pm., Clarendon Lab., Oxford	Elemt. Part. Theory Seminar	Dr S Humble (Daresbury)	Crossing Symmetric K-Matrix

Social News

A E R E SIX-A-SIDE SOCCER TOURNAMENT. Correction to last weeks announcement - The Final between RHEL and Bldg 459 will be played on Tuesday, 1 December at AERE ('A' pitch) kick-off 12.45 pm. Why not come along and support the Lab team!

R H E L ORCHESTRA. A music group has been formed at the Lab and the Rec. Assoc. would like to hear from anybody who has a good quality piano for sale (cheap!). Please ring Ron Hecken, Ext 6615 or John Rice, Ext 275.

SUNDAY FOOTBALL. The Lab has arranged some friendly games of football to be played on Sunday mornings on the AERE 'B' pitch. The first match is on 29 November against Oxford Civil Service, kick-off 10.30 am. Any players wishing to be considered for these matches (full team - 11 a side + 1 sub) should contact H Jarvis Ext 205 or B McClure, ext 445.

CONTAINERS. The Rec Assoc still has some 1 and 5 gall containers for sale at 1/- and 2/- each. Ring John Rice or Peter Craske, R2, Ext 275.

CHESS. Results. Played on 19 Nov., - Rutherford/Atlas 5, Didcot 7.

Played on 23 Nov., - Rutherford/Atlas 6½, Wantage 2½
(Full details next week, space and time permitting - Ed)

CHRISTIAN FELLOWSHIP. Film Show, at 12.30 pm., on Friday, 4 Dec., in the Lecture Theatre. Everyone welcome to a fascinating colour film entitled "Seven Candlesticks". This is a 20 minute documentary showing the remains of the seven churches of Revelation still standing in the militantly Muslim land of Turkey. What happened to cause these once prosperous churches to decline! The film attempts to answer this and other questions.

RECORD SOCIETY. It is hoped to start presenting records again shortly, possibly next Tuesday, 1 Dec., at 12.30 pm, Lecture Theatre. Please watch blackboard in Coffee Lounge for details.

Rutherford Laboratory
27-11-70

H F NORRIS Ext 484
Scientific Admin. Group
Building R20.

58w