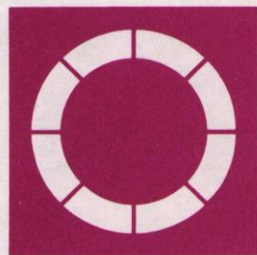


No. 39/69
3 Nov 69



Rutherford Laboratory Bulletin

General News

NIMROD POWER SUPPLIES SPARES. Because of the problems of metal fatigue on rotating plants on proton synchrotron pulsing duty, it had been hoped that the rotating plant could be replaced by static reactive compensation plant. However, the Electricity Supply Authority has said that such a system is an unacceptable load at our position in their network.

In order to ensure operation of Nimrod at the full repetition rate as much as possible in the future and based on some six months successful operating experience with the Solid Pole Rotor, the following items have been ordered:-

- A spare Drive Motor, which will be suitable for use with either set.
- A second Solid Pole Rotor, so that keyed laminated Pole Rotors need not normally be in service.
- A spare Alternator Stator, which will be suitable for use with either set.
- Two Flywheels of improved design

VISITS. It has been decided to introduce a programme of visits within the Laboratory to enable staff at junior and intermediate levels to see some of the work being carried out in the various sections. The programme will commence with the Nimrod area and arrangements are being made for selected groups to tour the Magnet, Injector and Power Supply Buildings during the shut-down periods. Staff selected for these visits will be notified in due course.

CORPORATE MEMBERSHIP OF ENGINEERING INSTITUTIONS. The Oxford College of Technology is considering running a day-release course for the "Academic Test" which must be passed by those students who have satisfied the old academic requirements of the Institutions but who will not satisfy responsibility requirements by 1973. Further enquiries to T.F. Gubbins, Building R.20, Ext. 266.

FILM NOTICE. Period 12 commences Monday, 3 November. Colour Strip - RED for $\beta\gamma$ and fast neutron films.
TLD Issue for people with surnames commencing S.T.U.V.
Please change all films promptly.

VISITORS. Nine pupils and two members of staff from Chipping Norton School will visit Radiation Protection Group on Monday, 3 November for discussion on collaborative projects.
Students attending the S.A. School at A.E.R.E. will visit the Laboratory on Wednesday, 5 November & Thursday, 6 November.

OVERSEAS VISITS. Dr. G.R. Stevenson, to the U.S.A. 3 - 24 November to attend Conference on Accelerator Dosimetry and Experience at SLAC, and to visit various Laboratories.
Mr. J.T. Delury and Mr. G.E. Simmonds, to the U.S.A. on 7 November, returning respectively 22 & 26 November to attend NIMBUS 'E' Conference at the National Environmental Satellite Centre ESSA and the Goddard Space Flight Centre, for discussion of Satellite work generally. Mr. Simmonds will also visit NAL, Batavia and the Brookhaven National Laboratory for various discussions. Dr. J.R.J. Bennett to the U.S.A. on 7 November for approximately one years attachment to study cryogenic techniques at Stanford University.

THE ROYAL SOCIETY. Programme of Meeting for November and December is to hand. Information from H.F. Norris R.20, Ext. 484.

Machine Schedules

NIMROD Cycle 12 and 13 (20.10.69 - 18.11.69)

Machine Physics; High Energy Physics (X1/K9, X2/K12, X2/K13A, X2/K14A, P71, KB, π 7, X3/ π 8 and X3/K15)
Full details of Cycles 12 and 13 were given in Bulletin No. 37/69.

Internal Events

Mon., 3 Nov., 11.30 a.m.,
Lecture Theatre

Nimrod
Lecture Series

Dr. S. Tovey
(CERN)

A study of the K_{L3}^+ Form Factors

Wed., 5 Nov., 11 a.m.,
Conf. Room, R.1.

H.E.P. Disco
Group

"Theorists Suggest Experiments" At this meeting members of the theory group will briefly discuss various areas of high energy physics where future experiments may be of most use. It is also hoped to include a "pre-proposal talk by John Smith on " $\pi N \rightarrow K\Lambda$, $K\Sigma$ below 2 GeV/c".

Wed., 5 Nov., 12.40 p.m.,
Thurs., 6 Nov., 1.15 p.m.,
Lecture Theatre

Film Show

"Beauty in Trust", a 23 min. colour film.

The story of the National Trust and its work in preserving some of the beautiful buildings of England contrasted with areas of natural scenery.

Thurs., 6 Nov., 3.15 p.m.,
Lecture Theatre

Rutherford
Lab. Lecture

Dr. E. Eastwood
(Research Director,
English Electric Co.
and Member of the SRC)

Radar, Birds and Aircraft
(No tickets required)

Fri., 7 Nov., 9.0 a.m. - 4.0 p.m., East Wing Conference Room, R.1. Tektronix, U.K. Ltd., are presenting a demonstration of their new Graphic Computer Terminal, Type T4002. This self contained, desk top information display system will be linked via an interface to a PDP 8 Computer. Further information from H.F. Norris, R.20, Ext. 484.

Mon., 10 Nov., 11.30 a.m.,
Lecture Theatre

Nimrod Lecture
Series

Dr. P. Litchfield
(RHEL)

Partial Wave Analysis of $K^- N \rightarrow \Lambda \pi$
between 1.0 and 1.85 GeV/c.

External Events

Mon., 3 Nov., 4.15 p.m.,
Clarendon Lab., Oxford

High Energy
Theory Seminar

Dr. D. Faiman

The Quark Model on Exotic Resonances:
its scope and Limitations.

Mon., 3 Nov., 5 p.m.,
Univ. of Bristol

Phys. & Geo-Phys
Colloq.

Mr. J. Banbury
(Manager, Computer
Services, CEEB,
S.W. Region)

Modern Methods of Operational
Research.

Tues., 4 Nov., 2.30 p.m.,
21 Banbury Rd., Oxford

Nucl. Phys.
Seminar

Prof. D.H. Wilkinson

A Complete Account of Light Nuclei?

Thurs., 6 Nov., 4.15 p.m.,
Univ. of Sussex.

Theor. Phys.
Seminar.

B.R. Martin
(UCL)

K - N Coupling Constants

Thurs., 6 Nov., 8.30 p.m.,
Clarendon Lab., Oxford

Seminar in
Elementary
Particle Phys.

Dr. E. Gabathuler
(Daresbury)

- Interference Phenomena

Fri., 7 Nov., 4.15 p.m.,
Clarendon Lab., Oxford

Colloq.

Prof. W.A. Nierenberg
(Script Inst. of
Oceanography, La Jolla)

Oceanography for a Physics Colloquium

EVENTS AT A.E.R.E.

Tues., 4 Nov., 2 p.m.,
Conf. Room, Bldg. 8.9

Theor. Phys.
Seminar

Mr. A. Gilchrist
(Met. Office, Bracknell)

Numerical Simulation of the General
Circulation of the Atmosphere.

Thurs., 6 Nov., 3.30 p.m.,
Conf. Room, H.8

Nucl. Phys.
Colloq.

Dr. J. Byrne
(Sussex)

The Lifetime of the Neutron

Social News

RECORD SOCIETY. Tues., 4 Nov., 12.30 p.m., Lecture Theatre

"Brahms Violin Concerto" with Yehudi Menuhin as the soloist (Stereo)

The Record Society, an informal group, would like to find out whether their weekly record concerts are enjoyed by the rest of the audience. To this end, copies of a simple questionnaire will be available at the concerts for the next few weeks, and anyone attending is asked to complete one of these. Maybe you have some interesting records you would be willing to lend or, join the small group who meet each month to select programmes.

CHRISTIAN FELLOWSHIP. The meeting on 31 October will be held in the new East Wing Conference Room on the top floor of R.1.

Fri., 7 Nov - Most religions pray and fast but what do these mean to the Christian. Ernie Newbold will be leading a discussion at the P.L.A. Conference Room at 12.30 p.m.

"BANGERS and BANGERS". The Oxford Group of the Civil Service Motoring Association are holding their annual Bonfire and Firework Display on the Fifth of November, at Caldecott House, Abingdon. There will be a competition for the best made Guy Fawkes (the one that appeared at my front last night deserved to be burnt - Ed) and hot sausage rolls and coffee will be available. Tickets, Adults 3/-, Children 2/- in advance please from the local C.S.M.A. representative, L.N. Dutton, R.25., Ext. 224.

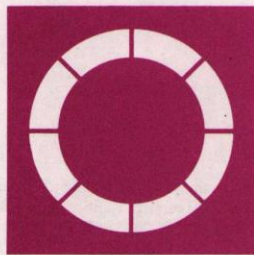
H.F. Norris Ext. 484

Scientific Admin. Group. Bldg. R20.

Rutherford Laboratory
31.10.69

STOP PRESS. Prof. M. Gell-Mann has been awarded the Nobel Prize for Physics.

No. 40/69
10 Nov 69



Rutherford Laboratory Bulletin

General News

A HELIUM-3 REFRIGERATOR

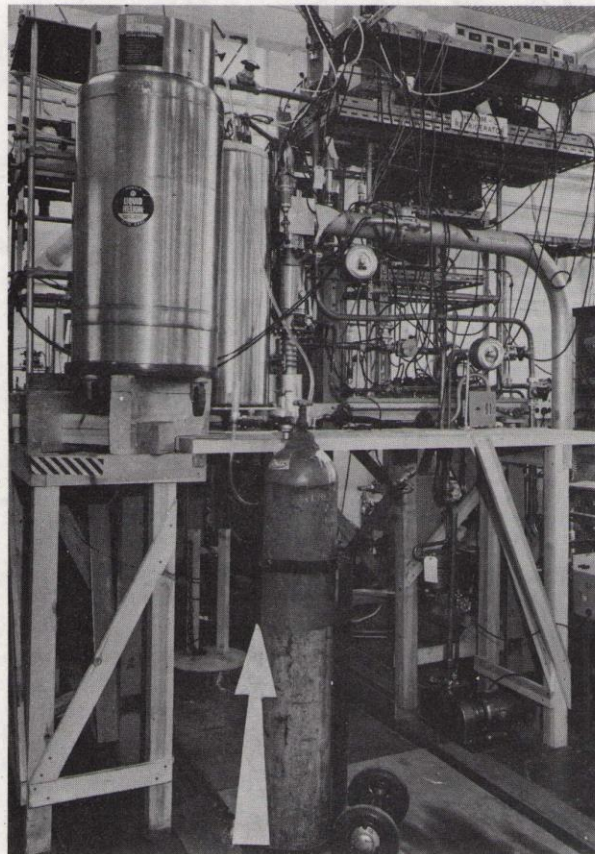
Recently a new refrigerator using a light Helium-3 isotope was successfully brought into operation in this Laboratory. During initial tests temperatures slightly below 0.3°K were measured in the working region; this is believed to be the lowest temperature ever attained at the Laboratory. The temperatures were determined from measurements of the vapour pressures of the Helium in the working region. The main parts of this refrigerator are shown in the photograph with the vertical tube containing the cold region, partially hidden by the Helium cylinder, indicated by an arrow touching its end.

This refrigerator is the result of a collaboration between the Applied Physics Apparatus Group of Engineering Division and General Physics Group of Applied Physics Division.

Temperatures in the region of 0.3°K are not in themselves new and can be obtained simply by pumping on liquid Helium-3 in a Dewar, or by means of a Helium-3 dilution refrigerator. The important features of this refrigerator, however, are that it can operate continuously for days if necessary and can be worked at temperatures up to 1°K. Above 1°K refrigerators using Helium-4 can be used.

Built primarily to enable research at temperatures below 1°K to be performed for new types of polarized proton targets, it serves also to test out new ideas on the design of refrigerators themselves. Already measurements have been made upon permissible heat fluxes between Copper and liquid Helium surfaces and on the Kapitza temperature jump that occurs at these interfaces.

The principal research task for the immediate future is to investigate how the polarization and relaxation times of various organic materials depend upon the temperature in the 0.5°K region. These results will be applied to the new frozen target now under construction here (see RHEL/M 155).



FIRE AWARD PRESENTATION. At 12 noon on Friday, 7 November, in the Director's Conference Room, Dr G H Stafford will present the winning team in this year's UKAEA Annual Fire Competition, section (b), with the Fire Prevention Officers Trophy.

This section of the competition is for amateur teams of three, two administration staff and a driver. The Rutherford Laboratory entered a team for the first time and won with a total of 23 points, the runners-up being AWRE with 15 points.

Congratulations go to Mrs P (Penny) Jeanes, recently of the Local Administration Office, R1 now living in Germany, Mrs T (Terry) Batchellier from the Typing Centre and Mr K (Ken) Johnstone of the Bubble Chamber Group who was the driver.

THE SAMARITANS. Oxford 44044 gives a 24 hour telephone service for those contemplating suicide and those in despair. On Tuesday 11 November in place of the usual Record Society concert a Deputy Director of the Oxford Branch of the Samaritans will be giving a talk on the work of this organisation. The movement was started in 1953 at St. Stephen Walbrook in the City of London by the Rev. Chad Varah. The Samaritans, apart from giving help every hour of the day and night when help is sought, need volunteers to help maintain this service. The speaker will not only talk on the work but will also say how and where volunteers can help in this worthwhile work. (See Internal Events).

FILM NOTICE. It is Period 12. Colour Strip - RED for γ and fast neutron films. Please check that you are wearing the correct films and that all old films are returned.

MISSING EQUIPMENT. The following items are missing from their stowages in self-drive SRC vehicles operated by Nimrod Division:-

- 2 off - Vehicle wheel jacks - complete.
- 1 off - Wheel Brace.

Any person who may have knowledge of the whereabouts of these items is requested to contact Mr R Hecken, R2 Ext 6615/6205.

OVERSEAS VACANCIES. ESRO (Details on Notice Boards) Senior Systems Programmer at Darmstadt, Germany; Mathematician at Darmstadt; Public Relations Officer at Neuilly-sur-Seine France; Head of Scientific Section (ESTRANGE) at Kiruna, Sweden; Head of Finance Section (ESRIN) at Frascati, Italy; Engineer i/c Vacuum Effects Studies at Noordwijk, Netherlands. CERN (Details in Room 68, Building R20) Translator-Grade 8/9/10; Mechanic (Work Preparation), Technical Services and Buildings Division - Grade (5)6; Mechanic, Synchrotron Injector Division - Grade 6; Laboratory Technician (Electronics), Nuclear Physics Division - Grade 7.

OVERSEAS VISITS. Dr L C W Hobbs, to CERN 9-13 Nov., to attend meetings of the 300 GeV Machine Committee and meetings of its Study Groups.

Mr J A Fox, to CERN, 11-14 Nov., to attend 300GeV Machine Committee meeting.

Machine Schedules

NIMROD Cycles 12 and 13 (20.10.69 - 18.11.69.)

Machine Physics; High Energy Physics (X1/K9, X2/K12, X2/13A, X2/14A, P71, X8, π^7 X3/ π 8 and X3/K15). Full details of Cycles 12 and 13 were given in Bulletin No. 37/69.

Internal Events

Mon., 10 Nov, 11.30 am., Lecture Theatre	Nimrod Lecture Series	Dr P Litchfield (RHEL)	Partial Wave Analysis of $K^-N \rightarrow \Lambda \pi$ between 1.0 and 1.85 GeV/c
Tues., 11 Nov., 12.40 pm., Lecture Theatre	Talk	'The Work of the Samaritans' by a member of this organisation. (See Gen. News for details).	
Wed., 12 Nov., 11 am., Conf. Rm., Bldg. R1	HEP Disc Group	Dr M Vaughn (RHEL)	Equal Mass Limits of Kinematic Constraints.
Wed., 12 Nov., 12.40 pm., Thurs., 13 Nov., 1.15 pm., Lecture Theatre.		Film Show	'Motoring Practice', a 20 min. colour film.

George Eyles of the Institute of Advanced Motorists appear in this film and demonstrates in built-up areas and on the open road and on motorways, techniques which can help people to be safe considerate drivers. The film is not for beginners or professionals but for the great mass in between and should be of interest to all motorists interested in improving or perfecting their driving skills.

Mon., 17 Nov., 11.30 am., Lecture Theatre	Nimrod Lecture Series	Prof C Rubbia Recent Results on K_L Experiments. (CERN)
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External Events

Mon., 10 Nov., 2.15 pm., Univ of Sussex	Nucl. & Elemt. Particle Phys. Colloq.	Dr A C Phillips (Sussex)	Interaction of the three-nucleon System with Radiation.
Mon., 10 Nov., 4.15 pm., Clarendon Lab., Oxford	High Energy Theory Seminar	Dr P J S Watson	A Relativistic Quark Model
Tues., 11 Nov., 2.30 pm., 21 Banbury Rd. Oxford	Nucl. Phys. Seminar	P E Hodgson (Oxford)	Macroscopic to Microscopic - Recent Work on the Optical Model
Tues., 11 Nov., 7.45 pm., Univ. of Reading	British Computer Soc. Branch Meeting	Dr G M Bull (Hatfield Polytechnic)	Computer Films
Thurs., 13 Nov., 8.30 pm. 21 Banbury Rd. Oxford	Seminar in Elemt. Particle Phys.	Dr J Paton	Fitting Production Processes with Veneziano Formulae.

EVENTS AT AERE

Tues., 11 Nov., 2 pm., Conf. Rm., Bldg. 8.9	Theor. Phys. Seminar	Dr R S Nelson (AERE)	Ion Channelling
Thurs., 13 Nov., 3.30 pm., Conf. Rm. H.8	Nucl. Phys. Div Colloq.	Dr C J Batty (RHEL)	The PLA - A Summing Up

Social News

30 MINUTE BREAK. Why not come along to the Christian Fellowship next Friday, 14 November, to hear Nurse Bird from Didcot give an informal talk on her work and faith in God? Conference Room R12 at 12.30 pm.

CSMA Oxford Group Fri., 14 Nov., "Roads-Past, Present and Future". A talk by Mr K Summerfield, Oxfordshire County Surveyor, at The Old White House Abingdon Road, Oxford at 8 pm. Open to non-members.

Rutherford Laboratory

7.11.69:

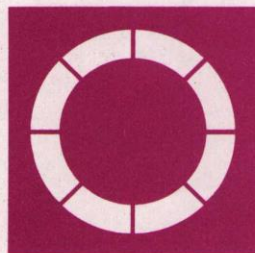
H F Norris Ext 484

Scientific Admin. Group Building R20

STOP PRESS

FOUND. A sum of money on an internal car park. Will the loser apply to R1 Admin Office.

41/69
17 Nov 69



Rutherford Laboratory Bulletin

General News

FRANCE SAYS YES TO 300 GeV. The French Government announced on Monday that it will participate in the construction of the construction of the 300 GeV machine to the extent of one-third of the total cost. There had recently been fears that her economic difficulties would force France to announce her withdrawal from the project, as did Britain in June, 1968. Had this occurred, it would have killed the proposed as the cost could not have been borne by the remaining countries. The location of the accelerator has not yet been settled, but a decision might be taken by the CERN Council next month.

TELEPHONE SERVICE Accommodation Section (Ext. 263/476) Room 2.26, Bldg. R.1 would be pleased to receive reports of any undue background noise on telephone calls. Complaints should give the extension number affected, the extension or public exchange number called at the time and the date of the call. All complaints will be relayed to the G.P.O. for rectification.

THE COSENER'S HOUSE From the 1 December, bookings for the Rutherford Laboratory's hostel at "The Cosener's House" can be made directly to the Manageress, Miss S. Green on Abingdon 3198 or direct dialling from RHEL on 71-9-3198.

FILM NOTICE It is Period 12 Colour Strip - RED for 8y and fast neutron films. Please check that you are wearing the current films and that all old films are returned.

OVERSEAS VACANCIES ESRO (for details see Notice Boards) Mathematicians at Darmstadt, Germany; Systems Engineer at Darmstadt; Head of the ESOC Accounts Section at Darmstadt; Senior Cost Accounting Officer at Noordwijk, Netherlands.

CERN (Details in Room 68, R20) Clerk Typist, Grade 4.

OVERSEAS VISITS The Director, to CERN, 17-19 Nov., to attend meeting of ECFA.

Machine Schedules

NIMROD Cycle 14 (18.11.69 - 30.11.69)

Machine Physics
High Energy Physics

Team	Beam	Experiment	
Imp. Coll./Westfield Coll.	X1/K9	2-2.8 GeV/c K^+d Interactions	Data
Birmingham U./RHEL	X2/K12	K^+_p Differential Cross-section Measurements from 0.45-0.85 GeV/c	Data
Camb.U./RHEL	X2/K13A	Studies of $K^0 \rightarrow \pi^+\pi^-\pi^0$	Setting up
Oxford U./RHEL	X2/K14A	Polarization Effects in π^+_p Elastic Scattering	Setting up
UCL/RHEL	K8	K^- Differential Cross-sections from 0.85-2.2 GeV/c	Data
Westfield Coll./RHEL	X3/ π 8	Measurement of Eta Decay Asymmetry	Setting up
Bristol U.	X3/K15	K^+_p Differential Cross-sections from 1.07-2.0 GeV/c	Setting up

Internal Events

Mon. 17 Nov., 11.30 a.m.,
Lecture Theatre

Wed. 19 Nov., 11.0 a.m.,
Conf Rm., Bldg R.1.

Wed., 19 Nov., 12.40 p.m.
Thurs. 20 Nov., 1.15 p.m.
Lecture Theatre

Nimrod Lecture
Series

H.E.P.
Disc. Grp.

Film Show

Prof. C. Rubbia
(CERN)

Dr. J. D. Lawson

The Transuranium Elements Part 1. a black and white, 58 min. A E C film (Part 2 will be shown next week).

Recent Results on
 K_L Experiments

Future Prospects of
High Energy Accelerators

Dr. Glenn T. Seaborg, Chairman of the U.S.A.E.C. lectures on the work leading to the discovery of all the known transuranium elements - from element 93 through element 104. This film was produced from a TV tape recorded at the Tenth Anniversary Summer Science School at the University of Sydney, Australia, January 1967. It provides the opportunity of seeing and hearing a famous scientist personally describe some important nuclear age discoveries in which he played a leading role.

Mon. 24 Nov., 11.30
Lecture Theatre

Nimrod Lecture
Series

Prof. W. Jentschke
(DESY)

Planned Experiments with
the CERN I. S. R.

External Events

Mon. 17 Nov. 4.15pm, Queen Mary Coll. London	Theor. Phys. Seminar	Prof. J. P. Elliot (Sussex)	The Structure of Shell Model Config- urations in Atoms and Nuclei
Tues. 18 Nov. 2.30 pm, 21, Banbury Rd. Oxford	Nuclear Phys. Seminar	Dr. J. Freeman (AERE)	The Weak Interaction Vector Coupling Constant and the Mystery of the Decay of ^{35}A
Wed. 19 Nov., 2.30 pm, Univ. of Manchester	Theor. Phys. Seminar	Dr. D. Sherrington	Some Electronic Anomalies in Semi- Conductors.
Wed. 19 Nov., 3.0 pm, Univ. of Cambridge	High Energy Physics. Seminar	P. Collins (Durham)	Bootstrap of the Low Energy $\pi\pi$ System
Thurs. 20th Nov. 4.15pm Clarendon Lab. Oxford	Theor. Phys. Seminar	Dr. I. Unna	Collective Motion in Nuclei and the Random Phase Approximation.
Thurs. 20 Nov. 4.15 pm, Univ. of Sussex	Theor. Phys. Seminar	H. McManus (Michigan State)	Inelastic Proton Scattering (Provisional title)
Thurs. 20 Nov. 8.30 pm, 21 Banbury Road, Oxford	Seminar in Element Particle Phys.	Dr. D. Ritson (SLAC)	Photo production, nonsense zero and other such things.
Fri. 21. Nov. 4.15pm Clarendon Lab., Oxford	Colloq.	Prof. N. Kurti (Oxford)	The Transfer, Transmission and Degradation of Energy.

EVENTS AT AERE

Tues. 18 Nov 2.0 pm, Conf. Rm., Bldg 8.9	Theor. Phys. Seminar	DR. D. M. Brink (Oxford)	A Survey of Hartree-Fock Calculations for Nuclei.
Thurs. 20 Nov. 3.30 pm, Conf. Rm, H8	Nuclear Phys. Div. Colloq.	Dr. A. T. G. Ferguson (AERE)	Review of Recent work on IBIS

Social News

RECORD SOCIETY Tues, 18 Nov, 12.30 pm Lecture Theatre.

"Brazilian Music" with Stan Getz (tenor sax) and Antonio Carlos Jobin (Piano). Included in this recording is "The Girl from Ipanema" sung by João Gilberto.

CHRISTIAN FELLOWSHIP Robin Elliott will introduce the Bible Study on "Angels" Yes! they are spoken of many times in the Bible. Come and learn a lot more about them, at the P. L. A. Conf. Rm., R.12 at 12.30 p.m. on Fri 21 Nov.

CSMA - Oxford Group Invitation to the Oxford Fire Brigade Social Club, the Slade, Oxford at 8 pm Details from the local representative, Mr. L. N. Dutton, Bldg. R. 25 Ext. 224.

Rutherford Laboratory

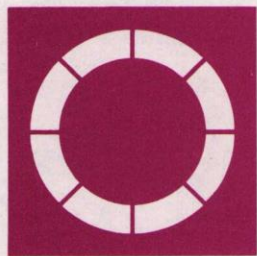
14.11.69

H. F. Norris Ext. 484

Scientific Admin. Group

Building R.20

42/69
24 Nov 69



Rutherford Laboratory Bulletin

General News

VISITORS Five Russian Scientists are expected to visit the Laboratory shortly. They are:-
Dr. A.A. Vasiliev, Mr. V.F. Kuzmin and Dr. S.M. Runchinsky - Radiotechnical Institute of the USSR Academy of Sciences.
Mr. S.N. Sokolov - Head of Laboratory, the Institute of High Energy Physics.
Mr. O.V. Runcov - Engineer, State Committee for Use of Atomic Energy.

Their main interest is in the development of new equipment for the automatic measuring of bubble and spark chamber film. During their stay in this country they will be visiting the Daresbury Laboratory, the Cavendish Laboratory, Sogenique Service Ltd. at Newport Pagnell and International Computers Ltd.

INTRODUCTION TO REINFORCED PLASTICS. The Harwell Education and Training Centre have announced a two-day course, on 24 and 25 February 1970, on the above subject. Its aim is to provide engineers with an understanding of the properties and potentialities of reinforced plastics. The emphasis will be on the use of carbon fibres, and the design and production methods so far available will be described.

Applications from R.H.E.L. staff should be made via Group Leaders to Mrs. R.A. Jeans, Bldg. R20, Ext. 555.

THE COSENNERS HOUSE. From the 1 December, bookings for the Rutherford Laboratory's hostel at "The Cosenners House" can be made directly to the Manageress, Miss S. Green on Abingdon 3198 or direct dialling from RHEL on 71-9-3198.

FILM NOTICE. It is Period 12. Colour Strip - RED for $\beta\gamma$ and fast neutron films. Next film change - Monday 1 December.

NOTE There will be no fast neutron issue but all fast neutron films and holders must be returned.

OVERSEAS VACANCIES. CERN (details available in Room 68, R20) Clerk Typist, Grade 5, Personnel Management; Telex Operator Grade 4 (5), Administration; Accountant, Grade 7, Salaries Section; Clerk/Shorthand Typist, Grade 4 (5), Secretariat; Administrative Clerk, Grade 5, Claims and leave.

ESRO (details available on notice boards) Senior Accounting and Cost Accounting Officer at Noordwijk (Netherlands).

Machine Schedules

NIMROD Cycle 14 (18.11.69.-30.11.69.)

Machine Physics; High Energy Physics (X1/K9, X2/K12, X2/K13A, X2/K14A, K8, X3/ π 8 and X3/K15)

Full details of Cycle 14 were given in Bulletin No. 41/69.

Internal Events

Mon., 24 Nov., 11.30 a.m.,
Lecture Theatre

Nimrod Lecture
Series

Prof. W. Jentschke
(CERN)

Planned Experiments with the
CERN, I.S.R.

Wed., 26 Nov., 11 a.m.,
Conf. Rm, R.1

H.E.P. DISC
Grp.

Dr. R. Taylor

Some facilities which are available on
the RHEL Computing System and others
which are not.

Wed., 26 Nov., 12.40 p.m.
Thurs., 27 Nov. 1.0 p.m.
Lecture Theatre

Film Show

"The Transuranium Elements". Part 2.
A black and white, 70½ min. AEC film,
which continues last weeks lecture.

Mon., 1 Dec., 11.30 a.m.,
Lecture Theatre.

Nimrod Lecture
Series

Dr. G. Giacomelli,
(Bologna and CERN)

Production and Total Cross-Section
Measurements of Negative Particles at
70 GeV.

External Events

Mon., 24 Nov., 2.15 p.m.
Univ. of Sussex.

Nucl. & Elementary
Particle Phys. Colloq.

Dr. G. Fraser
(Sussex)

Inelastic Cross-Sections at High Energies.

Mon., 24 Nov., 4.15 p.m.
Clarendon Lab., Oxford.

High Energy
Theory Seminar

Dr. P.C. Korthals Altes

Breaking of Chiral Symmetry and Leptonic
K Decay Form Factors.

Mon., 24 Nov., 4.15 p.m.,
Queen Mary Coll.

Theor. Phys.
Seminar

Prof. S. Berman (Stanford
and Imp. Coll.)

Inelastic Electron Scattering: Lepton
Pairs in Elementary Particle Structure.

Mon., 24 Nov., 5 p.m.,
Univ. of Bristol

Phys. & Geo-phys
Colloq.

Prof. J.F. Nye
(Bristol)

Glacier Physics and the Shing of
Ice over Rock.

Mon., 24 Nov., 5 p.m.,
Univ. of Reading.

Colloq.

Prof. G.W. Series
(Reading)

Spectroscopy without a Spectroscope.

Tues., 25 Nov., 2.30 p.m.,
21 Banbury Rd., Oxford.

Nuclear Phys.
Seminar

C.G. Page (Cavendish
Lab.)

Latest Developments in Pulsars

Wed., 26 Nov., 2.30 p.m.,
Univ. of Manchester

Theor. Phys.
Seminar

Prof. H.E. Hall
(Manchester)

The Dynamics of a Quantized Vertex.

External Events continued

Thurs., 27 Nov., 4.15 p.m., Clarendon Lab., Oxford.	Theor. Phys. Seminar	Dr. C.J. Pethick	Neutron Stars
Thurs., 27 Nov., 4.15 p.m., Univ. of Sussex	Theor. Phys. Seminar	R. Harris (Imp. Coll.)	Bond Structure Methods for Impurity Problems.
Thurs., 27 Nov., 8.30 p.m., 21 Banbury Rd., Oxford.	Seminar in Elementary Particle Physics.	Dr. J. Lyons	High Energy Physics at the Weizmann Institute.
Fri., 28 Nov., 4.15 p.m., Clarendon Lab., Oxford.	Colloq.	Prof. M.W. Thompson (Sussex)	Channeling of Particles in Crystals.
Fri., 28 Nov., 7.30 p.m., Univ. of Bath	Inst. of Maths Meeting	Prof. H.C. Longuet-Higgins (Edinburgh)	Memory
EVENTS AT AERE			
Tues., 25 Nov., 2 p.m., Conf. Rm., Bldg. 8.9	Theor. Phys. Seminar	Prof. D.J. Thouless (Birmingham)	How Sharp is a Second-Order Phase Transition? or, Field Theory Methods can really be useful in Statistical Mechanics.
Thurs., 27 Nov., 3.30 p.m., Conf. Rm., H.8.	Nuclear Phys. Colloq.	Dr. J. Beckman (Q.M.C.)	The Cosmic Microwave Background and the Temperature of the Universe.

Social News

A.E.R.E. HORTICULTURAL SOCIETY. Garden problems problem gardens????? If you have any problems, bring them along to the Rutherford Laboratory Lecture Theatre on Friday, 28 November. The meeting commences at 7.15 p.m. with a lecture by Mr. J. Fowles of the Berkshire College of Agriculture. This will be followed by Gardeners Question Time. The panel will include Mr J.F. Mattock (roses) Mr. Konrod Engbers (fuchsias etc.), Mr. C. Blockside of AERE Grounds Department and Mr. Fowles. Admission (members free, non-members 2/6) by ticket only, obtainable from Mrs. Collett, Bldg. 521 or your local committee member. Refreshments are free.

RECORD SOCIETY. Tues., 25 Nov., 12.30 p.m. Lecture Theatre.

It is hoped to play a recording of Beethoven's Symphony No: 2, (more details, when known, on blackboard in Coffee Lounge R22).

CHESS TOURNAMENT. 1969/70. The tournament is approaching the half-way stage and competition is as keen as ever. The position after 3 rounds is that Bill Turner is sharing the lead with Peter Craske with 3 points closely followed by S.K. Chanda, Fred Lunnon and Colin Uden on the $2\frac{1}{2}$ point mark.

The Chess Club were challenged to a match with the Didcot Chess Club on Thursday 6 November and were beaten by $5\frac{1}{2}$ to $2\frac{1}{2}$. The Rutherford winners were Roy Culliford and Bill Glasgow with Peter Craske drawing his game. Didcot reversed last year's result when they were beaten by $5\frac{1}{2}$ to $4\frac{1}{2}$.

CHRISTIAN FELLOWSHIP. Prayer Meeting led by Frank Smith, in the P.L.A. Conf. Rm., R12, at 12.30 p.m. on Friday 28 November. All welcome for a short time of devotion and prayer.

PROPOSED LUNCHTIME DARTS COMPETITION. Will anyone interested in taking part in this competition please contact Alan Slater or John Rice, Bldg. R2, Ext. 275 to discuss details.

Rutherford Laboratory
21.11.69.

H.F. Norris Ext. 484
Scientific Admin. Group
Building R.20.

STOP PRESS: OVERSEAS VISITS. Mr. D.A. Gray, to CERN, 24-25 Nov., to attend meeting of the 300 GeV Magnet Working Party.