

RUTHERFORD LABORATORY BULLETIN

No. 40/64 for the week commencing Monday, 19th October, 1964

VISITORS A party of twelve students attending the Physics Course at the Isotope School, Wantage Research Laboratory, will visit the Rutherford Laboratory on Thursday, 22nd October.

VISITS ABROAD Mr. L. B. Mullett, the Assistant Director, to C.E.R.N., 18th-19th October, to attend meeting of European Committee on Future Accelerators.

POPPY DAY 1964 This year, the Poppy Day collection at the Rutherford and Atlas Laboratories, will be held on Friday, 6th November.

INSURANCE BROKERS Messrs. Donald MacIntosh (Insurance) Ltd. will be available for consultation on Fridays between 12.30 p.m. and 2.30 p.m. in the Welfare Office, Room 1, Building R.16. All classes of insurance are transacted. Appointments may be made by telephoning Ext. 263 (Miss M. Anderson); or, on Fridays only between 12.30 p.m. and 2.30 p.m., direct to the Welfare Office, Ext. 299.

MISSING EQUIPMENT The following bicycle has been reported missing:-

No. L.71. (marked in white paint on mudguard)
Will anyone with information on this machine please inform Mrs. S. M. Timmis, Room 1.78, Building R.1, Ext. 6624.

Would the person who borrowed an Advance Audio Frequency Signal Generator, Type H.1., Serial No. 07747, Loan Pool No. 1122, please return it to Lab. 1.6, Building R.1. or ring Ext. 383.

INTERNAL EVENTS

19th Mon., 12th Oct., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. A. Michelini (C.E.R.N.)	Magnetic Spark Chambers.
26th Mon., 19th Oct., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. W. G. Galbraith (A.E.R.E.)	Title to be announced.

EXTERNAL EVENTS

Mon., 19th Oct., 5 p.m., Univ. of Reading	Physics Dept. Colloq.	Dr. T. G. Pickavance	The Work of the Rutherford Laboratory.
Fri., 23rd Oct., 4.15 p.m., Clarendon Lab., Oxford	Clarendon Lab. Colloq.	Prof. J. Volger (Philips Research Labs. Eindhoven)	The Generation of Current by means of a Superconduct- ing Dynamo.
Mon., 26th Oct., 2.30 & 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Colloq. (Electronics Division)	Joint meeting with the I.E.R.E. Computer Group	Design Automation.

(Further information on all I.E.E. Meetings may be obtained from Scientific Administration, Building R.20., Ext. 484.)

28th-31st October: "International Radio Communications Exhibition", at the Seymour Hall, London W.1., daily from 10 a.m. to 9 p.m., organised by the Radio Society of Great Britain.

Scientific Administration

Building R.20.

16th October, 1964.

RUTHERFORD LABORATORY BULLETIN

No. 41/64 for the week commencing Monday, 26th October, 1964

ELECTROSTATIC GENERATOR GROUP - "AT HOME". The Electrostatic Generator Group will be "At Home" on Saturday, 31st October, between 2 p.m. and 5 p.m., at the new Nuclear Physics Laboratory (opposite the existing Nuclear Physics Department in 21 Banbury Road, Oxford). Equipment on display will be the tandem accelerator, now operating, and the injector, in course of installation. Members of the Institute and their families are invited: children under the age of ten must be under full-time supervision

VISITORS. A party of 36 visitors from British Brown-Boveri Ltd., will visit the Laboratory on Saturday, 31st October.

VISITS ABROAD. Mr. W. S. Spinks to Geneva on 27th October, for discussions with the C.E.R.N. Emulsion Group.

MISSING EQUIPMENT. A number of items are missing.

Item	Information please to:-
"Dymo" Embossing Tool, Model M-2C, Serial No.3689. The serial number appears inside the tape holder. (Lost from Lab.6, Bldg.R.1.)	Mr. H. Wroe or Mr. J. C. Sutherland Ext.389.
Durst R305 35mm. Enlarger, Serial No.79992/706 with Schneider Lens, Serial No. 6862566. (Lost from R.2 Darkroom).	Mr. R. H. Minter Ext.6614.
Hoover Dustette, Model 2614, Serial No.MC-52041. (Lost from Lab.22, Bldg.R.12).	Mrs. M. Roberts Ext.441.
Electronic "Thermophil" Thermometer and probe, Serial No.21569. (Lost from P.L.A. Experimental Area).	Mr. F. Borsay Ext.556.

ENGLISH-SPEAKING UNION FELLOWSHIPS AND ASSISTANTSHIPS, 1965-66. The Education Department of the English Speaking Union of the Commonwealth, which exists to promote British-American co-operation in education, have announced their programme of Fellowships and Assistantships at American Universities for the academic year 1965-66. The closing date for applications is 2nd December, 1964. Further details may be obtained from Mr. A. G. Taylor, Personnel Branch, Building R.20, Ext.495.

INTERNAL EVENTS. The dates shown under this heading in Bulletin No. 40/64 were incorrect, and any inconvenience caused is very much regretted.

Mon., 26th Oct., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. W. Galbraith (A.E.R.E./R.H.E.L.)	Total Cross-Sections of Particles on Nucleons in the GeV Region
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(Details will shortly be announced for the Nimrod Series Lecture on Monday, 2nd November)

EVENTS AT A.E.R.E.

Tues., 27th Oct., 2 p.m., Conf. Rm., Bldg.8.9	Theor. Physics Seminar	Dr. W. Marshall	Theory of Neutron Scattering from Ferromagnetic Alloys.
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EXTERNAL EVENTS

Mon., 26th Oct., 2.30 & 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Electronics Colloq.	Joint Meeting with the I.E.E.E. Computer Group	Design Automation
Mon., 26th Oct., 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Lecture	Prof. A. L. Cullen	Millimetre Wave Examination of Gas Discharges
Tues., 27th Oct., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Prof. D. H. Wilkinson	The Isobaric Mass Formula
Tues., 27th Oct., 5.45 p.m. Sheldonian Theatre, Oxford.	Romanes Lecture	Sir Harold Hartley	Man and Nature

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EXTERNAL EVENTS (contd.)

28th-31st October: R.S.G.B. "International Radio Communications Exhibition", at the Seymour Hall, London W.1., 10 a.m. to 9 p.m. daily.

Thurs., 29th Oct., 4.15 p.m., Clarendon Lab., Oxford.	Theor. Physics Seminar	Dr. K. Tomita (A.E.R.E.)	Landsau-Peierls Criterion in the Theory of Conductivity
Thurs., 29th Oct., 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Electronics Colloq.	Opened by A. H. W. Beck	Annular Electron Beams

Meetings of the Vacuum Study Group at Brunel College, London W.3., will take place on Wednesdays at 4.30 p.m., commencing 28th October. Papers will be presented by representatives from many firms and research organisations, including one jointly by Mr. G. S. Grossart (R.H.E.L.) and Dr. J. N. Chubb (Culham Lab.) on 24th February, 1965. Details may be obtained from Scientific Administration, Bldg.R.20, Ext.484.

Scientific Administration
Building R.20

23rd October, 1964

RUTHERFORD LABORATORY BULLETIN

No. 42/64 for the week commencing Monday, 2nd November, 1964.

INTERNAL EVENTS

Mon., 2nd Nov., 11.15 a.m., Lecture Theatre.	Nimrod Lecture Series	Dr. T.G. Walker (R.H.E.L.)	Proton-Proton Scattering at Small Angles.
Tues., 3rd Nov., 3.30 p.m., Conf. Room, Bldg. R.1.	Nimrod Proposals for Experiments	Dr. J. Malos (Bristol Univ.)	A Proposal to Investigate the 2π Decay of the K_2^0 .
Fri., 6th Nov., 2 p.m., Lecture Theatre.	Nimrod Lecture Series	Dr. N. Cabibbo (C.E.R.N.)	$K_2^0 \rightarrow 2\pi$; CP Violation or Not?

(Please note that there will be no lecture in the Nimrod Series on Monday, 9th November).

EVENT AT A.E.R.E.

Tues., 3rd Nov., 2 p.m., Conf. Room, Bldg. 8.9.	Theor. Physics Seminar	Dr. A.E.A. Warburton	Some Properties of Regge Poles in Potential Theory.
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EXTERNAL EVENTS

Mon., 2nd Nov., 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Lecture	Mr. A.J. Ellison	Modern Introduction to the General Theory of Electrical Machines.
Tues., 3rd Nov., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Mr. J.L. Black	Isobaric Analogue States in Zr^{90} .
Wed., 4th Nov., 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Discussion Meeting	Opened by Mr. C.J. Foster	The Training of the Industrial Engineer.
Thurs., 5th Nov., 5.30 p.m., Savoy Place, W.C.2.	I.E.E. Lecture	Dr. Uno Lamm	Mercury Arc Valves for H.V. D.C. Transmission.
Fri., 6th Nov., 4.15 p.m., Clarendon Lab., Oxford.	Colloquium	Prof. H. Bondi (King's College, London)	Recent Theories of Gravitation.
Mon., 9th Nov., 5 p.m., J.J. Thomson, Phys. Lab., Reading.	Physics Dept. Colloquium	Prof. K.F. Smith (University of Sussex)	The Measurement of Hyperfine Structure of a Rare Earth Atom. (Atomic beam research)

(Please note that I.E.E. lectures, etc. are open to all members of the Institution and that each member may introduce a non-member guest).

A two-day symposium on "The properties of superconductors and their applications to electrical engineering" will be held at the College of Advanced Technology, Birmingham, on 18th and 19th November, 1964.

A two-day conference on "Commutation in rotating machines" will be held at the I.E.E., Savoy Place, London, on 19th and 20th November, 1964.

Further information and registration forms for the above two events may be obtained from Scientific Administration, Building R.20, Ext. 484.

RUTHERFORD LABORATORY BULLETIN

No.43/64 for the week commencing Monday, 9th November, 1964

P.L.A. A six week shut down of the P.L.A. was completed on the 8th November. During this period four major jobs have been completed in addition to sundry installations and the annual maintenance.

A greatly modified and improved polarized proton source has been installed, careful examination of the mechanical, R.F. and magnetic alignment of the drift tubes of Tanks 2 and 3 carried out, and a new rectifier installed for Tank 3 modulator. The monitoring and control circuits have been modified and extended. All the work was completed to schedule and experiments commence again on the 9th November.

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
9th-13th Nov.	R.H.E.L.	Accelerator Physics
14th-16th Nov.	R.H.E.L.	Measurement of the Polarization of Neutrons from the D(p,n) ^{2p} Reaction at 50 MeV

VISITS AFROAD The Director accompanied by Mr. L.B. Mullett, Dr. G.H. Stafford and Mr. W. Walkinshaw will attend the opening ceremony of the German Electron Accelerator, D.E.S.Y., Hamburg on 11th-12th November.

INTERNAL EVENTS

Fri., 13th Nov., 2 p.m., Lecture Theatre	Nimrod Lecture Series	Prof. B.P. Gregory (C.E.R.N.)	Recent Research at C.E.R.N.
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Please note that there will be no lectures in the Nimrod Series on Mondays, 9th and 16th November.

EVENTS AT A.E.R.E.

Tues., 10th Nov., 1.30 p.m., Wed., 11th Nov., 11.45 a.m., Cockcroft Hall.	Film	"Eye for Isotopes" (27 min. A.E.A. Film) (Inner gate will be manned and outer gate open for both showings).
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EXTERNAL EVENTS

Tues., 10th Nov., 2.30 p.m., 21 Banbury Road, Oxford.	Nuclear Physics Seminar	Prof. D.H. Wilkinson	The Isobaric Mass Formula
wed., 11th Nov., 5 p.m., Dept. of Astrophysics, Parks Rd., Oxford.	Dept. of Astrophysics Colloq.	Prof. W. Liller (Harvard College Observatory and Cambridge Observatories)	Expansions of Planetary Nebulae
Thurs., 12th Nov., 2.30 p.m., Clarendon Lab., Oxford.	Clarendon Lab. Colloq.	Mr. M.G. Richards (Clarendon Lab and Sussex Univ.)	Nuclear Magnetic Resonance Studies of Solid Helium -3
Thurs., 12th Nov., 4.15 p.m. Clarendon Lab., Oxford.	Theor. Physics Seminar	Mr. P. Divakaran	π^- Capture
Fri., 13th November, 4.15 p.m. Clarendon Lab., Oxford.	Clarendon Lab. Colloq.	Prof. F.H. Dalitz	Unitary Symmetry and the Elementary Particles.

RUTHERFORD LABORATORY BULLETIN

No. 44/64 for the week commencing Monday, 16th November, 1964

VISITORS Thirty members of the Crompton Parkinson Apprentices Association will visit the Laboratory on Saturday, 21st November.

VISITS ABROAD Mr. W. Walkinshaw and Mr. M. Snowden to C.E.R.N., Geneva, 17th-18th November, to attend a Track Chamber Committee Meeting.

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

Date	Team	Experiments
16th Nov.	R.H.E.L.	Measurement of the Polarization of Neutrons from the $D(p,n)^2p$ Reaction at 50 MeV
17th-18th Nov.	Oxford Univ.	$B^{10}(p,2n)C^9$ Reaction Studies
19th-22nd Nov.	Queen's Univ., Belfast and Westfield College	Measurement of (p,α) Scattering at 50 MeV.

ARTIFICIAL RESPIRATION Instruction and practice in mouth-to-mouth artificial respiration is available from Safety Group. Classes will be limited to 4 or 5 persons, will take 20-30 minutes, and can be held in Building R.16 or any other convenient location. It is recommended that all staff, particularly those engaged on electrical work, should take advantage of this life saving instruction.

ADMINISTRATION NOTICE The Administration Division have compiled a list of University Vice-Chancellors, together with Heads of various departments at all the Universities and Colleges of Advanced Technology in the U.K. Copies of this document may be obtained from H.F. Norris, Scientific Administration, Building R.20., Ext 484.

CANCELLATION OF DANCES The dances advertised for Friday, 27th November, and New Year's Eve have had to be cancelled because of the condition of the Restaurant floor.

POST-GRADUATE EDUCATION CENTRE Course No.6 on "Applied Mathematics for Engineers" is to be held in the Reactor School, A.E.R.E., from 11th-15th January and 25th-29th January, 1965. Closing date for nominations is 20th November. Applications should be made through Division Heads to Mrs. M.C. Gould, Personnel Branch, Building R.20, Ext 575, from whom further details may be obtained.

INTERNAL EVENTS

16th, 17th and 18th Nov., 9.15 a.m., Lecture Theatre.	Special Lecture Series	Dr. M. Veltman (C.E.R.N.) (Further information from Sci. Admin. Ext 484)	A Course of Lectures on Weak Interactions
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Coffee will be available in the lounge after each lecture.

Tues., 17th Nov., 3.30 p.m., Conf. Rm., Bldg. R.1	Nimrod Proposals for Experiments	Dr. J. Malos (Bristol Univ.)	A Proposal to Investigate the 2π Decay of the K_2^0 .
Wed., 18th Nov., 2.30 p.m. Atlas Lab., Conf. Room.	Informal Talk	Prof. Peter Henrici (Swiss Federal Inst. of Tech., Zurich)	Formal and Informal Theories of Numerical Stability.

EVENTS AT A.E.R.E.

Tues., 17th Nov., 1.30 p.m.	Film	"Safe Transport of Radioactive Materials", (20 min. I.A.E.A. Film). Inner gate manned and outer gate open for these times only.
Wed., 18th Nov., 11.45 a.m.	Cockcroft Hall.	
Thurs., 19th Nov., 10.45 a.m., Rm. 1.17, Bldg. 8.9.	Theo. Phys. Div. Joint Applied Mathematics Seminar	Mr. J. Dyer. The Representation of Functions of Many Variables by Functions of a Single Variable

This is one of a new series of weekly seminars, further details of which can be obtained from Mr. D.D. McVicar, Ext. 72-2431.

/External Events

EXTERNAL EVENTS

Tues., 17th Nov., 5 p.m., Biochemistry Dept., Math. Inst., 10 Parks Rd, Oxford.	Colloq. in Atomic and Molecular Structure	Prof. L.J. Costerhoff (Leiden)	Theory of Optical Rotatory Power
Thurs., 19th Nov., 7.15 p.m., The Ship Hotel, Duke St., Reading.	Inst. of Mech Eng. Informal Lecture.	Dr. S.K. Manstead	Teaching Machines
Fri., 20th Nov., 4.15 p.m., Clarendon Lab., Oxford.	Clarendon Lab. Colloq.	Dr. D. ter Haar (Clarendon Lab.)	The Origin of Cosmic Rays.
Thurs., 19th Nov., 4.15 p.m., Clarendon Lab., Oxford.	Theo. Phys. Seminar	Dr. M. Fisher (U.C.L.)	Correlations and Critical Scattering

Scientific Administration
Building R.20

13th November, 1964

RUTHERFORD LABORATORY BULLETIN

No.45/64 for the week commencing Monday, 23rd November, 1964

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
23rd Nov.	Oxford Univ.	Beam Transport.
28th-30th Nov.	R.H.E.L.	New Polarized Proton Source Tests.

MISSING EQUIPMENT The following items are missing from the Rutherford Laboratory Loan Pool:-

- Pye decade resistance box, Type 7651, Ser/No. 041737
- Wee Megger
- Ohmeter
- Avometer Model 8, Ser/No. 11350-960, L.P. No. 1028
- Avometer Model 8, Ser/No. 90186-C-459, L.P. No. 1023
- Avometer Model 8, Ser/No. 143621-C-862, L.P. No. 1285
- Avometer Model 7, Ser/No. 93268-659, L.P. No. 1029

All the above instruments should be distinguished by a green stick-on aluminium label bearing the loan pool number and the words "N.I.R.N.S. Electronic and Instrument Services." Anyone with information on the above mentioned items are asked to contact Mr. G.J. Carpenter, Bldg R.32, Ext. 382

Will anyone who knows the whereabouts of the following items, please inform Inventories Section, Ext. 570:-

- Avometer Model 8, Ser/No. 50939-C-856
- Avometer Model 8, Ser/No. 135514
- Wolf Drill $\frac{3}{4}$ " , Ser/No. 5374
- Wolf Drill $\frac{1}{4}$ " , Ser/No. 0535485, A.E.R.E. No. 13856
- Wclf Drill $\frac{1}{4}$ " , Ser/No. 13859
- Wolf Drill $\frac{1}{4}$ " , Ser/No. 13873
- Wolf Drill , Ser/No. 5239384 A.E.R.E. No. 4915
- Wee Megger, Ser/No. 1408258

EXTERNAL COURSES The following courses will be held at the Borough Polytechnic, London S.E.1 during the 1965 session:-

Nuclear Radiation Detection and Measurement - fifteen evening lectures commencing 6th January at 7 p.m.

Radioactivation Analysis - ten evening lectures commencing 12th January at 7 p.m.

Microwave Applications of Semiconductor Devices - twelve evening lectures commencing 12th January, 6.30 to 8.30 p.m.

Further details may be obtained from Mrs. M.C. Gould, Personnel Branch, Building R.20., Ext 575.

NEW I.E.E. PUBLICATION The I.E.E. announce a new monthly publication to be called "Electronic Letters", describing the latest advances and development in electronics and allied fields. A copy of the I.E.E. Press Release on the new publication can be seen in the Library or the General Office, Scientific Administration, Building R.20.

INTERNAL EVENTS

Mon., 23rd Nov., 11.15 a.m., Lecture Theatre.	Nimrod Lecture Series	Dr. M.A.R. Kemp (R.H.E.L.)	π^{\pm} - proton Elastic Scattering from 875 MeV/c to 1579 MeV/c.
Tues., 24th Nov., 11 a.m., Lecture Theatre.	Nimrod Proposals for Experiments	Dr. J. Malos (Bristol Univ.)	A Proposal to Investigate the 2π Decay of the K_2^0
Tues., 24th Nov., 3.30 p.m., Lecture Theatre.	Nimrod Proposals for Experiments.	Dr. J. Prakash (Oxford Univ.)	An Experiment with K^- Interactions at Rest in Diamond Loaded Emulsion (Proposal No. 21)
Fri., 27th Nov., 2.45 p.m., Conf. Rm. 4, Bldg. R.1.	Demonstration	Friden Electronic Calculator, Type 130	
Mon., 30th Nov., 11.15 a.m., Lecture Theatre.	Nimrod Lecture Series	Dr. J.K. Perring (A.E.R.E.)	Some Consequences of CP Violation

/EVENTS AT A.E.R.E.

EVENTS AT A.E.R.E.

Thurs., 26th Nov., 10.45 a.m., Rm. 1.17, Bldg. 8.9. (Second lecture in the series)	Theor. Phys. Div. Joint Applied Maths. Seminar	Mr. J. Dyer	The Representation of Functions of Many Variables by Functions of a Single Variable.
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EXTERNAL EVENTS

Tues., 24th Nov., 2.30 p.m., 21 Banbury Rd., Oxford.	Nuclear Physics Seminar	Prof. R.J. Blin-Stoyle	β - decay in the A = 12 triad.
Wed., 25th Nov., 5 p.m., Dept. of Astro- Physics, 10 Parks Rd., Oxford.	Dept. of Astrophysics Colloq.	Dr. A. Przybylski (Mt. Stromlo Observatory and Royal Greenwich Observatory)	Analysis of the Spectrum HD3579 (the Brightest Star in the large Magellanic Cloud).
Wed., 25th Nov., 5.30 p.m. Kings College, London, Strand, W.C.2.	Inst. of Maths. and its Applications	Prof. M.J. Lighthill F.R.S. (Open meeting)	Inaugural Presidential Address.
Wed., 25th Nov., 6 p.m., 1 Birdcage Walk, S.W.1.	Inst. of Mech. Eng. Lecture	Sir Robert Cockburn	Materials and the Engineer.
Thurs., 26th Nov., 2.30 p.m., Clarendon Lab., Oxford.	Clarendon Lab. Colloq.	Dr. J.M. Baker (Clarendon Lab)	Interactions Between Magnetic Ions.
Fri., 27th Nov., 4.15 p.m., Clarendon Lab., Oxford.	Clarendon Lab. Colloq.	Dr. R.A. Stradling (Clarendon Lab.)	The High Frequency Surface Impedance of Metals in a Magnetic Field.

1st-3rd Dec: "Corrosion and Metal Finishing Exhibition," Olympia, London.

I.E.E. Meetings: Scientific Administration now receive full details of all meetings held by the I.E.E. in London.

Scientific Administration
Building R.20

20th November, 1964

RUTHERFORD LABORATORY BULLETIN

No. 46/64 for the week commencing Monday, 30th November, 1964

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
30th Nov-2nd Dec.	R.H.E.L.	Accelerator Physics
3rd Dec.	(a) R.H.E.L. Radiation Protection Group	Neutron Survey
	(b) Oxford Univ.	Beam Transport
5th-9th Dec.	R.H.E.L.	P.P.S. Tests

THIRD INTERNATIONAL VACUUM-CONGRESS, 1965. The Third International Vacuum-Congress is to be held in Stuttgart, from 28th June - 2nd July, 1965. The Programme Committee invites the submission of short contributions on new and hitherto unpublished work; summaries of contributions should be received by 1st March, 1965. The Liaison Officer for Great Britain is - J. Yarwood, Joint British Committee for Vacuum Science and Technology, 47 Belgrave Square, London, S.W.1. Further information may be obtained from Mr. G.S. Grossart Bldg. R.2, Ext. 583 or Scientific Administration, Bldg. R.20, Ext. 484.

CONFERENCES The Institute of Physics and the Physical Society have arranged the following conferences during 1965:-

5th-8th January	:	"Solid State Physics", at the University of Bristol.
6th-8th January	:	"Optics in Process Control", at the Manchester College of Science and Technology.
28th January	:	"Acoustical Properties of some New Concert Halls in the U.S.A. and Germany", Imperial College, London.
26th February	:	"Cryogenics in Relation to Vacuum", at the I.E.E., London.
31st March-2nd April	:	"Non-Conventional Electron Microscopy", at the University of Cambridge.
5th-7th April	:	"Elementary Particles", at the University of Birmingham.
7th-9th April	:	"Stress Analysis To-day", at the University of Bristol.
12th-14th April	:	"Atomic Spectra and Radiation Processes", at the Clarendon Lab., Oxford.
20th-21st May	:	"Electrical Conduction at Low Temperature", at the Royal Aeronautical Society, London.

(Further details may be obtained from Scientific Administration, Room 21, Bldg. R.20, Ext. 484 or 6297).

FIRST AID LECTURE A lecture giving a general outline of First Aid will be given by Dr. R. Orr of Medical Division, A.E.R.E. at 2.00 p.m., Friday, 11th December, in the Conference Room, Building R.12. The lecture, which will last approximately 2 hours, is open to anyone who may be interested.

POST-GRADUATE EDUCATION CENTRE, A.E.R.E. Course No.8 on "Language and Technical Information" is to be held in the Reactor School, A.E.R.E., from 1st-5th February, 1965. The purpose of this one-week course is to develop skill in conveying technical information both in speech and in writing. The closing date for nominations is 21st Dec. Applications should be made through Division Heads to Mrs. M.C. Gould, Personnel Branch, Building R.20, Ext. 575, from whom further details may be obtained including a list of selected books.

INTERNAL EVENTS

Mon., 30th Nov., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. J.K. Perring (A.E.R.E.)	Some Consequences of CP Violation
Thurs., 3rd Dec., 11.15 a.m., Lecture Theatre	Special Lecture Series	Dr. C. Lovelace (Imp. Coll.)	A Theory of Elementary Particles
Fri., 4th Dec., 11 a.m., Atlas Lab. Conf. Rm.	Informal Talk	Dr. P. Constantinescu (Asst. Prof., Univ. of Bucharest & Atlas Lab.)	An Introduction to Boolean Algebra and its Application to Non Numerical Problems
Mon., 7th Dec., 11.15 a.m., Lecture Theatre.	Nimrod Lecture Series	Prof. R.D. Tripp (C.E.R.N.)	Recent Results in Strange Particle Physics

(The time of the above lecture is provisional only)

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EVENTS AT A.E.R.E.

Tues., 1st Dec., 2 p.m., Conf. Rm., Bldg. 8.9.	Theo. Phys. Div. Seminar.	Dr. J.K. Perring	The K_0 Meson and the Galaxy.
Thurs., 3rd Dec., 10.45 a.m., Rm. 1.17, Rldg. 8.9.	Theo. Phys. Div. Joint Applied Maths. Seminar.	Mr. E.J. York	The QR Transformation Algorithm.

EXTERNAL EVENTS

Tues., 1st Dec., 5 p.m., 10 Parks Rd, Oxford.	Oxford Mathematical Inst. Colloq. in Atomic and Molecular Structure.	Prof. F. Sondheimer (Cambridge)	The Annulenes.
Wed., 2nd Dec., 4 p.m., N.P.L., Teddington.	N.P.L. App. Phys. Div. Lecture.	Mr. J.K. Wright (Central Electricity Research Labs.)	Recent Work on Magneto- hydrodynamics at C.E.R.L.
Wed., 2nd Dec., 5 p.m., 10 Parks Rd, Oxford.	Oxford Dept. of Astrophysics Colloq.	Dr. L.D. Kaplan (Oxford)	The Temperature of Venus.

Scientific Administration
Building R.20

27th November, 1964.

RUTHERFORD LABORATORY BULLETIN

No. 47/64 for the week commencing Monday, 7th December, 1964

VISITORS Four members of staff from the Daresbury Nuclear Physics Laboratory will visit the Rutherford Laboratory on Thursday, 10th December.

Twenty-four engineers attending the "Physics for Engineers" course at the Reactor School will visit the Laboratory on Friday, 11th December.

A party of twenty members of the Science Degree Association of the Oxford College of Technology will tour the Laboratory on Saturday, 12th December.

VISITS ABROAD The Director and Dr. G.H. Stafford, to C.E.R.N., on 8th December for one day to attend a meeting of the International Committee for the organisation of the 1965 Oxford International Conference on Elementary Particles.

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
7th-9th Dec.	R.H.E.L.	P.P.S. Tests
10th Dec.	R.H.E.L.	Accelerator Physics
11th-16th Dec.	R.H.E.L.	Measurement of the Polarization of Neutrons from the $D(p,n)2p$ Reaction at 50 MeV

MISSING EQUIPMENT The following items are missing from the Rutherford Laboratory Loan Pool:-

Oscilloscope, Solartron, Type No. 1014.2, Ser. No. 81409, Loan Pool No. 1194
Oscilloscope, Telequipment, Type No. 532, Ser. No. 9650, Loan Pool No. 1281
Remscope, Cawkell, Serial No. 238, Loan Pool No. 1339
Avometer, Ser. No. 116804-C-1260, Loan Pool No. 1169

Anyone with information on the above mentioned items are asked to contact Mr. Slade, Building R.18., Ext. 6633.

Will anyone with information on the whereabouts of a "GRYPHON", 1/6 H.P., single phase, 240 volt motor which has been removed from Room G.1, Building R.1., please contact Dr. L.K. Rangan, Building R.1., Ext. 278.

EXTERNAL COURSES The following courses will be held at Brunel College, Acton, W.3, during the 1965 session:-

Tensor Analysis for Electrical Engineers - ten evening lectures commencing 11th January, 7-8.30 p.m.

An Introduction to Topology and Abstract Algebra and their Interrelation - eight evening lectures commencing 13th January, 7-8.30 p.m.

Practical Course in Elliott 803 Autocode - twelve evening lectures commencing 13th January, at 7 p.m.

Practical Course in Algol for the Elliott 803 Computer - twelve evening lectures commencing 14th January, at 7 p.m.

Further details may be obtained from Mrs. M.C. Gould, Personnel Branch, Building R.20, Ext 575.

FILM SHOW - CAR SEAT BELTS A twenty minute film dealing with the use of Safety Seat Belts in cars, will be shown in the Lecture Theatre on the following days:-

Tuesday, 8th December, 12.40 p.m. and 1.20 p.m.

Wednesday, 9th December, " " "

Thursday, 10th December, " " "

INTERNAL EVENTS

Mon., 7th Dec., 11.15 a.m., Lecture Theatre.	Nimrod Proposals for Experiments	Prof. P.H. Fowler (Bristol Univ.)	An Experiment at Nimrod to Determine the K/π Mass Ratio (Proposal No.20)
Mon., 7th Dec., 2 p.m., Lecture Theatre	Nimrod Lecture Series	Prof. R.D. Tripp (C.E.R.N.)	Recent Results in Strange Particle Physics

/INTERNAL EVENTS CONTD.

INTERNAL EVENTS CONTD

Thurs., 10th Dec., Exhibition of Electronic Components, Laboratory Apparatus, Heat Treatment and Industrial Heating Equipment by Electrothermal Engineering Ltd., 10.00 a.m.-3.30 p.m., Conference Room No.4, Bldg., R.1.

Mon., 14th Dec., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. F.H. Dalitz	Questions about Hyperfragments
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EVENT AT A.E.R.E.

Tues., 8th Dec., 2 p.m., Conf. Rm.B, Bldg. 8.9.	Theo. Phys. Seminar	Dr. P. Burke	Resonances in Atomic Scattering
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EVENT AT CULHAM LABORATORY

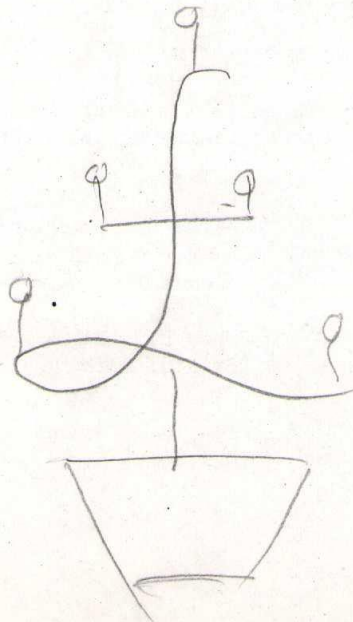
Thurs., 10th Dec., 10.45a.m., Conf. Rm. G.18, Bldg. E6	Theo. Physics Joint Applied Maths. Seminar	Dr. K.W. Morton	Ordinary Differential Equations (solution by multi-step methods)
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EXTERNAL EVENT

Thurs., 10th Dec., 7.30 p.m., The Good Companions Hotel, Slough.	Inst. of Mech. Eng. Informal Lecture.	Mr. H.J.B. Taylor, O.B.E., Administrative Staff College.	Finance and Production.
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Scientific Administration
Building R.20

4th December, 1964.



RUTHERFORD LABORATORY BULLETIN

No. 48/64 for the week commencing Monday, 14th December, 1964

MAKING USE OF THE HARWELL LIBRARY AND INFORMATION SERVICES It is proposed to hold a one-day course for P.S.O.s and S.S.O.s on Thursday, 14th January, 1965. The course will be of a practical nature and will emphasise the facilities which the Library and Information Services can provide in furthering scientific research work.

Applications should be made through the Scientific Administration Group, Bldg R.20, not later than 22nd December, 1964.

P.L.A. The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
14th-16th Dec.	R.H.E.L.	P.P.S. Tests
17th-20th Dec.	Birmingham Univ.	Polarization Studies

SUMMER INSTITUTE FOR THEORETICAL PHYSICS The Eighth Annual Institute for Theoretical Physics will be held at the University of Colorado, Boulder, Colorado, June 14th-August 20th, 1965. General topics for Institute lectures will be in the area of Nuclear Structure and Reactions. A two week symposium on Strong Interactions and Elementary Particles is planned for the period August 9th to 20th. Further information from Scientific Administration, Bldg R.20. Ext 484.

POST GRADUATE EDUCATION CENTRE, A.E.R.E. A course on "Modern Developments in Nuclear Radiation Detection Techniques" will be held in the Reactor School, A.E.R.E., Harwell on 17th and 18th May, 1965. The closing date for nominations is 15th January. Applications should be made through Division Heads to Mrs. M.C. Gould, Personnel Branch, Building R.20, Ext 575, from whom further details may be obtained.

EXTERNAL COURSE The following course will be held at the Borough Polytechnic, London, S.E.1, during the 1965 session:-

Principles of Electronic Equipment Reliability - Twelve evening lectures commencing 13th January, 6.30 to 8.30 p.m.

Further details may be obtained from Mrs. M.C. Gould, Personnel Branch, Bldg R.20, Ext 575.

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

Chronograph - Ser. No. 860168 - Loan Pool No. 2555

Will anyone in possession of this instrument please contact Inventories Section, Ext 570.

INTERNAL EVENT

Mon., 14th Dec., 11.15 a.m., Lecture Theatre	Nimrod Lecture Series	Prof. R.H. Dalitz	Questions about Hyperfragments
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RUTHERFORD LABORATORY BULLETIN The next issue of the Bulletin will be published on 17th December and will cover the three weeks beginning 21st, 28th December and 4th January. Copy for this bulletin should arrive at Scientific Administration not later than 9 a.m., Wednesday, 16th December.

Scientific Administration
Building R.20

12th December, 1964

RUTHERFORD LABORATORY BULLETIN

No. 48/64 for the weeks beginning 21st, 28th December, 1964
and 4th January, 1965

RUTHERFORD LABORATORY ON T.V. A documentary programme entitled "Challenge 64" (how science has met the challenge of the problems of 1964) will be screened on B.B.C. Television, Channel 1, on Tuesday, 5th January, at 9.25 p.m. Part of this film, in which Professor Bondi covers the Ω^- story and the new theory of gravitation, was filmed in the Nimrod Control Room.

VISITS ABROAD Mr. D.H. Lord and Mr. R.A. Lawes to the U.S.A., departing on 3rd January for approx $4\frac{1}{2}$ weeks. They will visit various Laboratories and organisations for discussions on Bubble Chamber scanning devices and associated computer systems.

P.L.A. The programme scheduled for the P.L.A. during the period covered by this bulletin is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
29th Dec-3rd Jan	Birmingham Univ.	Polarization Studies
7th-10th Jan	Birmingham Univ.	Polarization Studies

LIBRARY NOTICE The Library wishes to thank Mr. Marchbanks for his donation of eleven volumes of the Journal of the Institution of Electrical Engineers.

LOST A grey Parker 45 fountain pen with anodised top, also a pair of driving gloves (probably lost in Building R.1). Please contact Dr. Lipman, Ext 302.

INSURANCE BROKERS The A.E.R.E. telephone number of Norman Frizzell Ltd., and Donald Macintosh Ltd., is now Ext 2100.

Messrs Donald Macintosh will continue to be available for consultation in Bldg. R.16 (Ext 299) between 12.30 and 2.30 p.m. every Friday, except Friday, 18th December, 1964.

EXTERNAL EVENTS The Hunter Memorial Lecture, entitled "Some Engineering Problems of the Proton Synchrotron, Nimrod", will be given by Mr. P. Bowles at the I.E.E., Savoy Place, W.C. 2 on 7th January, 1965.

The Institute of Mathematics and its Applications are holding a half-day symposium on "Mathematics of Nuclear Reactors" at King's College, London, on Wednesday, 6th January, 1965 from 2.15 p.m. to 6.30 p.m.

Scientific Administration
Building R.20

17th December, 1964.