

Rutherford Laboratory

# Bulletin

## General News

The Director will visit Bombay on 11-15 January, at the invitation of the Indian Government, to attend the renaming ceremony of the Trombay establishment as the Bhabha Atomic Research Centre.

OVERSEAS VISITS. Professor W.D. Allen will visit Iran and Pakistan, 8 Jan - 5 Feb inclusive, where he has been invited to speak at the International Conference on Low Energy Nuclear Physics, in Dacca on 16-28 Jan.

The following will visit CERN on the dates indicated, to attend meetings of the Winter Study Group of the European Committee for Future Accelerators (ECFA):- Dr. N.H. Lipman (8-10 Jan), Dr. T.G. Walker (8-22 Jan), Mr. N.M. King (8-21 Jan), Mr. E.J.N. Wilson (8-16 Jan), Dr. G. Manning (8-22 Jan), Dr. M.A. Kemp (8-22 Jan), Dr. J.J. Thresher (8-12 Jan), Dr. G.H. Stafford (10-12 Jan) (to attend the Nuclear Physics Research Committee meeting on 11 Jan and ECFA on 12 Jan), and Dr. L.C.W. Hobbs (15-27 Jan).

RADIATION PROTECTION NOTICE. It is now Period 1 - colour strip Purple, for  $\beta\gamma$  and fast neutron films. Will the person wearing Film No. 015618, taken from the R.1 board on the morning of Wednesday, 28 December, please contact Miss J. Towers, R.20, Ext 253.

TELEVISION PROGRAMMES. A series of 10 television programmes on Semi-conductors, under the title "The New Electronics", will be shown on BBC-1 at 12 noon on Sundays, commencing 8 January.

## Machine Schedules

NIMROD Period 2 - Cycle 10 (13.12.66. - 17.1.67.)  
Machine Physics; High Energy Physics (K7, K1 and K4).  
Full details of Cycle 10 were given in Bulletin No. 49/66.  
Nimrod will be shut down for six weeks from 17 January.

P.L.A.

Date	Team	Experiment
8-9 Jan	A.E.R.E.	(p-t) Reactions on Sn isotopes.
10-14 Jan	Queen's Univ. Belfast & Westfield Coll.	Proton induced reactions on $Mg^{26}$ .
15 Jan	Accel. Physics.	Injector emittance measurements.

## Internal Events

EXHIBITION. A mobile demonstration vehicle from Honeywell Controls Ltd. will be exhibiting their full range of Micro-switches, Illuminated Control Devices and Meters, on Thursday, 12 January, 10 a.m. - 4 p.m. in the R.25 car park. Further details may be obtained from B.E. Kingdon, Ext 6297.

Mon, 16 Jan, 11.30 a.m.	Nimrod Lecture Series	Prof. M. Froissart (Saclay)	The Infra-red Problem in S-Matrix Theory.
Lecture Theatre			

## External Events - A.E.R.E.

Tues, 10 Jan, 2 p.m.	Theor. Phys. Div. Seminar	Dr. D. Linden-Bell (Royal Greenwich Observatory)	Cannibalism and Wosee in Stellar Systems.
Conf. Rm, Bldg 8.9.			
Thurs, 12 Jan, 3.30 p.m.	Nuclear Phys. Div. Colloq.	Dr. F.S. Levin	Some Remarks on the Stripping Theory of Peasach and Coz.
Conf. Rm, Hangar 8.			

## Social News

CIVIL SERVICE CLUB. Membership of the Civil Service Club is now open to all S.R.C. personnel. The Club, which is situated at 13-15 Great Scotland Yard, London S.W.1, near Trafalgar Square, provides restaurant, bar and accommodation facilities to all serving or pensioned civil servants. The annual subscription is 15/- for country members. Further details and application forms are available from Mr. R.C. Hazell, R.25, Ext 6116.

CSMA FILM SHOW. 8 p.m. Friday, 6 January at the Civil Defence Club (Training Range), Kidlington, and at the Southcoote Hotel, Reading. Admission free. Details from B.E. Kingdon, or from the notice-board in the Restaurant Coffee-Lounge.

RECORD SOCIETY. 12.30 p.m., Tuesday, 10 January, Lecture Theatre.

Sibelius: Symphony No. 2 in D.  
This recording of the best-known of Sibelius' symphonies, and one of the most popular works in the concert repertoire, is played by the London Symphony Orchestra conducted by the late Anthony Collins.

CHRISTIAN FELLOWSHIP. The Rev. W. Weaver, B.A., B.D., of Faringdon Baptist Church, will speak on "The Judgement of the Dead in Ancient Near-East Religious Thought", on Thursday, 12 Jan, at 12.30 p.m. in the P.L.A. Conference Room, R.12. All are welcome.

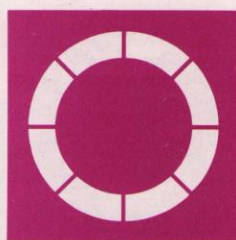
MRC DANCE. Friday, 13 January, 8.30 p.m. - 1.30 a.m. in the RHEL Restaurant. Music by Stan Rogers and his Blue Star Players. Tickets 12/6 single, 24/- double (inc. Buffet) from MRC, Ext 72-197.

Rutherford Laboratory, R.20  
6th January, 1967

B.E. Kingdon, Ext 6297  
Scientific Admin Group.



No. 2/67  
16 Jan 67



# Rutherford Laboratory Bulletin

## General News

**VISITORS.** A party of 12 Sixth Form pupils from University College School Scientific Society, London will visit the Laboratory on Wednesday, 18 January.

**VISITS ABROAD.** Dr. C.M. Fisher to CERN, 15-21 Jan, for discussions on data collection and analysis systems. Mr. J.V. Cresswell to Syracuse, N.Y. and Newark, N.J., 16-22 Jan, for technical liaison with semiconductor manufacturers. Mr. J. Burren, Mr. J.D. Forbes, Mr. R.A. Lawes, Mr. J.P. MacEwan and Mr. J. Sparrow to Munich, 17-21 Jan, to attend the 19th International Conference on Programming for Flying Spot Devices.

**LIBRARY NOTICE.** The Library would like to know the whereabouts of any copy of the book by J.R. Pierce on "The Theory and Design of Electron Beams."

## Machine Schedules

**NIMROD.**

Period 2 - Cycle 10 (13.12.66.-17.1.67.)

Full details of Cycle 10 were given in Bulletin No. 49/66

Nimrod will be shut down for six weeks from 17 January.

Please see Bulletin No. 51/66 for details

P.L.A.

Date	Team	Experiment
15 Jan	Accel. Physios.	Injector emittance measurements.
16 Jan	RHEL Nuclear Chemistry	Yttrium isomer ratio measurement.
17-19 Jan	Maintenance	
20-22 Jan	RHEL and QMC II	(p,n) reactions by time-of-flight method.

## Internal Events

Mon, 16 Jan, 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Prof. M. Froissart (Saclay)	The Infra-red Problem in S-matrix Theory.
Wed, 18 Jan, 11 a.m. Conf. Rm, R.1.	HEP Discussion Group Meeting	(i) Electroproduction of Neutrinos (Dr. S.Y. Lo) (ii) Remarks on Bremsstrahlung in Nuclear Collisions (Dr. J.E. Paton)	
Mon, 23 Jan.	Demonstration of AEI 4 inch Potentiometric Recorder, R.25. Conf. Rm. (Further details in next weeks Bulletin)		

## External Events

Mon, 16 Jan, 7.30 p.m. Oxford Coll. of Tech.	Oxford Productivity Committee and Reliability Grp.	Mr. W.H. Mayall	Industrial Design.
Mon, 16 Jan, 6 p.m. Savoy Place, WC2	I.E.E.T.E. Lecture	Dr. K.G. King (Westinghouse Co. Ltd.)	Semiconductors for Power.
Wed, 18 Jan, 2.30 p.m. Univ. Coll. London	Dept of Physics Seminar	Prof. E.H.S. Burhop (U.C.L.)	The K-Meson as a Nuclear Probe.
Wed, 18 Jan, 6 p.m. Savoy Place, W.C.2	I.E.E. Lecture	Prof. M.V. Wilkes (Cambridge Univ.)	Multi-access Computer Systems.
Wed, 18 Jan, 7.30 p.m. J.J. Thomson Phys. Lab, Reading.	I.E.R.E. Lecture	Mr. P. Atkinson (Reading Univ.)	Self-adaptive Control Systems.
<b>EVENTS AT A.E.R.E.</b>			
Tues, 17 Jan, 2 p.m. Conf. Rm, Bldg 8.9.	Theor. Phys. Div. Seminar	Dr. J. Bowcock (Birmingham Univ.)	The Optical Model for Li <sup>6</sup> .
Wed, 18 Jan, 9 a.m. Conf. Rm, Bldg 220-24	Chem.Div. Colloq.	Mr. J.G. Cuninghame	What is the Object of Current Nuclear Chemical Experiments in Fission?
Thurs, 19 Jan, 2 p.m. Conf. Rm, Bldg 8.9.	Joint App. Maths. Group Seminar	Mr. W.E. Hart	Polynomial Interpolation with Minimal Lebargue Constants
Fri, 20 Jan, 11 a.m. Conf. Rm. H.8	Nuc. Phys. Div. Colloq.	Dr. R.E. Chrien (Brookhaven)	Direct Capture in Cobalt.

## Social News

**RECORD SOCIETY.** 12.30 p.m., Tuesday, 17 January, Lecture Theatre.

"The Sound of Music".

The music of Rodgers and Hammerstein's record-breaking film starring Julie Andrews needs no introduction. This recording is taken from the actual sound-track-the next best thing to seeing it again!

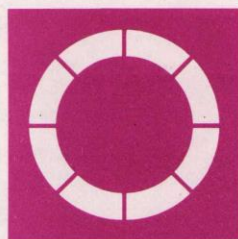
**CHRISTIAN FELLOWSHIP.** We shall continue Bible Study on St. John's Gospel, Chapter 16, at 12.30 p.m. in the P.L.A. Conference Room, R.12, on Thursday, 19 January. All are welcome to this, and to any of the Fellowship's meetings.

Rutherford Laboratory  
13th January, 67

B.E. Kingdon  
Scientific Admin.Group  
R.20



No. 3/67  
23 Jan 67



# Rutherford Laboratory Bulletin

## General News

**VISITORS.** Eleven members of the Phoenix Group of the Culham Laboratory will visit the Rutherford Laboratory on Thursday afternoon, 26 January.

**VISITS ABROAD.** Dr. G.H. Stafford to CERN, 29-31 Jan, to attend a meeting of the Advisory Committee for the Heidelberg Conference on Elementary Particles, September, 1967.  
Mr. K.H. Roberts to CERN, 24-27 Jan, for discussions on target mechanisms and associated equipment.

**RADIATION PROTECTION NOTICE.** Period 2 commences on Monday, 23 January. The colour strip will be Pale Blue, for  $\beta^+$  and fast neutron films. All users are requested to change their films promptly.

**CAPENHURST WORKS.** The telephone number of the U.K.A.E.A. Establishment at Capenhurst is now: HOOTON 4101 (day) or 3027 (night). (Dial 93-051-339, 4101 or 3027).

**LECTURE SERIES.** Professor A. Salam of Imperial College, London, will give the twenty-ninth course of Scott Lectures in the New Lecture Theatre of the Cavendish Laboratory, Cambridge, at 4.45 p.m. on 1, 3 and 6 March. The subject will be "The Physics of Particles". The lectures will be open to members of the University and others who are interested.

Dr. M.H. McFarlane of the Argonne National Laboratory will give a series of lectures on "Isobaric Spin in Nuclear Structure," on Tuesdays in the Lecture Room of the Nuclear Physics Laboratory, 21 Banbury Rd, Oxford, at 11.45 a.m. The series runs from 17 Jan. to 7 March, and it is regretted that information was not received in time for last week's bulletin.

The Department of Applied Mathematics and Theoretical Physics, University of Cambridge, and the High Energy Physics Group of the Cavendish Laboratory have arranged a series of Joint Seminars in "Elementary Particle Physics" to be held weekly until 15 March, generally at 3 p.m. on Wednesday, either at the Cavendish or in Silver St. Details of the lecture by Dr. T. Kibble on 25 January are given in "External Events" below, and subsequent lectures will be announced in future issues of the Bulletin.

**EXTERNAL COURSES.** Details of various courses in "Nuclear Science and Radiation Safety" and "Radio and Nuclear Chemistry", to be held at the Liverpool Regional College of Technology during 1967, may be obtained from B.E. Kingdon, R.20, Ext 6297.

**INSTRUMENTATION DISPLAY.** The Institution of Mechanical Engineers are arranging a display of Novel Instrumentation in Fluid Mechanics and Thermodynamics, to be held in the Engineering Department of Queen Mary College, London, on Tuesday, 11 April, 1967. The Institution is particularly anxious that research establishments should be well represented and any interested persons are asked to contact Scientific Administration for further details.

## Machine Schedules

P.L.A.

Date	Team	Experiment
23-26 Jan	RHEL	Ion optics tests.
27 Jan-1 Feb	King's College, London	(i) Reaction studies on $Mg^{24}$ (ii) Elastic and inelastic scattering from Zn isotopes.

## Internal Events

There will be no Nimrod Lecture on Monday, 23 January.

**DEMONSTRATION.** The new AEI 4-inch Potentiometric Recorders will be demonstrated in R.25. Conference Room from 10 a.m. to 4 p.m. on Monday, 23 January. (Further details are available from B.E. Kingdon).

Mon, 30 Jan, 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. F.F. Heymann (Univ. Coll. London)	$\pi^+p$ Elastic Scattering in the Neighbourhood of $N_2^{14}$ (2190).
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## External Events

Mon, 23 Jan, 4.15 p.m. Queen Mary Coll.	Theor. Physics Seminar	Dr. R.J.N. Phillips (A.E.R.E.)	Regge Poles in High Energy Scattering.
Mon, 23 Jan, 4.45 p.m. Royal Fort, Bristol Univ.	Physics Colloq.	Dr. M.G. Priestley	Electronic Structure of Semi-Metals.
Mon, 23 Jan, 5 p.m. J.J. Thomson Phys. Lab, Reading	Phys. Dept Colloq.	Prof. J.A. Krumhansl (Cornell Univ.)	The Phonon Boltzmann Equation and some Applications.
Tues, 24 Jan, 2.30 p.m. 21 Banbury Rd, Oxford	Nuclear Physics Seminar	Mr. A.F. Jeans (Oxford Univ.)	Determination of Spectroscopic Factors in (d,p) Reactions.
Wed, 25 Jan, 3 p.m. Cavendish Lab, Cambridge	Elementary Particles Physics Seminar	Dr. T. Kibble (Imperial Coll.)	Refraction of Electrons in Photon Beams.
Wed, 25 Jan, 5.30 p.m. Savoy Place, WC2	I.E.E. Lecture	Dr. K.R.J. Wilkinson (AEI Ltd., Rugby)	Prospect of Employing Conductors at Low Temperature in Power Cables and in Power Transformers.
Thurs, 26 Jan, 4.15 p.m. Clarendon Lab.	Theor. Physics Seminar	Dr. A.W. Hendry (R.H.E.L.)	Classification Schemes for Elementary Particles.
Fri, 27 Jan, 4.15 p.m. Clarendon Lab.	Colloq.	Dr. M.H. McFarlane (Argonne Nat. Lab.)	The Nuclear Shell Model.

## EVENT AT THE ATLAS LABORATORY

Mon, 23 Jan, 2.30 p.m. Conf. Rm.	Talk	Dr. I.J. Good (Oxford Univ. & Atlas)	A Five-Year Plan for Automatic Chess.
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## External Events - (CONTD)

### EVENTS AT A.E.R.E.

Tues, 24 Jan, 2 p.m. Conf. Rm, Bldg 8.9.	Theor. Physics Div. Seminar	Dr. A.M. Stoneham	The Shapes of Resonance Lines in Solids.
Thurs, 26 Jan, 2 p.m. Conf. Rm, Bldg 8.9.	Joint Applied Maths. Group Seminar	Mr. D.G. Vincent	The Harwell Operating System for the 360/30.
Thurs, 26 Jan, 3.30 p.m. Conf. Rm, Hangar 8.	Nuclear Physics Div. Colloq.	Dr. D.W. Lang	Particle Evaporation and Nuclear Intermediate Resonances.

## Social News

RECORD SOCIETY. 12.30 p.m. Tuesday, 24 January, Lecture Theatre.

Chopin, played by Claudio Arrau

This very representative selection of Chopin's piano pieces includes the famous Fantaisie-Impromptu in C# minor, the Scherzo in Bb minor, the F minor Ballade and the Impromptu in Ab, concluding with the brilliantly evocative Barcarolle in F#. The eminent Chilean pianist is at his best in this fine recording.

CHRISTIAN FELLOWSHIP Bible Study on St. John's Gospel, Chapter 15, will be continued this week at 12.30 p.m. on Thursday, 26 January, in the P.L.A. Conference Room, R.12. The meeting will be led by Mr. Dennis Williams of the Atlas Laboratory. All are welcome.

### DATES FOR YOUR DIARY:

23-27 Jan : International Lighting Exhibition, at Olympia.

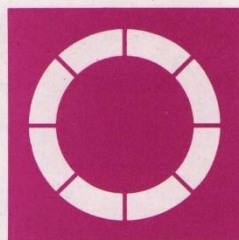
24-27 Jan : National Churches, Schools and Youth Clubs Exhibition at the Horticultural Halls.

Rutherford Laboratory  
19 Jan 67

B.E. Kingdon  
Scientific Admin. Group  
Building R.20,



No. 4/67  
30 Jan 67



# Rutherford Laboratory Bulletin

## General News

**RADIATION PROTECTION NOTICE.** It is now Period 2 - colour strip Pale Blue for  $\beta\gamma$  and fast neutron films.

**OVERSEAS VISIT.** Dr. M.R. Jane, to CERN, 2 Feb for approx. two weeks for discussions on the  $K_2^0$  interference experiment and to commence some routine assembly and testing of apparatus.

**VISITORS** A contingent of Scouts from Wantage will visit the Laboratory on Saturday, 4 February.

## Machine Schedules

P.L.A.

Date	Team	Experiment
30 Jan-1 Feb	Kings' College, London	(i) Reaction studies on $Mg^{24}$ (ii) Elastic and inelastic scattering from Zn isotopes
2-3 Feb		Maintenance.
4-7 Feb	Oxford U.	Studies of (p,t) Reactions on $Mg^{25}$ and $Si^{28}$ .

## Internal Events

Mon, 30 Jan, 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Mr. C.C. Nimmon (U.C.L.)	$\pi^- + p$ Elastic Scattering in the Neighbourhood of $N_2^*$ (2190)
Wed, 1 Feb, 2 p.m. Conf. Rm., R.12.	P.L.A. Division Seminar	Dr. E.J. Burge (Kings' College London)	Proton Scattering Experiments at Backward Angles.

## External Events

Mon, 30 Jan, 4.15 p.m. Queen Mary Coll.	Theor Physics Seminar	Dr. M.H. Macfarlane (Argonne Nat. Lab. & Oxford).	Quasi-Particle Approximations in the Nuclear Shell Model
Wed, 1 Feb, 2.30 p.m. Univ. Coll. London.	Particle Physics Seminar	Dr. D. Bugg (RHKL)	The Determination of Nucleon-Meson Coupling Constants from Spin-Dependent Forward Dispersion Relations.
Wed, 1 Feb, 3.00 p.m. Cavendish Lab. Cambridge	Elementary Particle Physics Seminar	Dr. D. Bailin (Univ. of Sussex)	Current Algebra and Non-leptonic Hyperon Decay
Thurs, 2 Feb, 2.30 p.m. Clarendon Lab., Oxford	Colloq.	Prof. I. Solomon (Ecole Polytechnique Paris)	Bolometer Detection of Magnetic Resonance
Thurs, 2 Feb, 4.15 p.m. Clarendon Lab, Oxford	Theor. Phys. Seminar	Dr. C.G. Kuper (St. Andrews)	Organic Superconductors
Fri, 3 Feb, 4.15 p.m. Clarendon Lab. Oxford	Colloq.	Prof. D.H. Perkins, FRS (Nuclear Physics Lab. Oxford).	Experimental Status of T-invariance

The following lectures will be given at the IEE, Savoy Place, London, during the current week:

Mon, 30 Jan, 5.30 p.m.	:	"Ion Implantation", discussion to be opened by Dr. G. Deauvalley and L.N. Large
Wed, 1 Feb, 5.30 p.m.	:	"Sub-Millimetre Wave Techniques", by Dr. H.A. Gebbie
Wed, 1 Feb, 5.30 p.m.	:	"The Determination of Load Losses and Torques in Squirrel-Cage Induction Motors", by N. Christofides and B. Adkins.
Thurs, 2 Feb, 5.30 p.m.	:	"Cooling Towers in Electricity Supply", by H.J. Lowe.
Fri, 3 Feb, 5.30 p.m.	:	"A New Method for the Assessment of Switching-Impulse Insulation Strength", by M. Ouyang.

### EVENT AT THE ATLAS LABORATORY

Wed, 1 Feb, 2.30 p.m. Conf. Rm.	Talk	Dr. P. Bryant (Atlas Lab.)	SOL and the Atlas Drums and Disco.
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### EVENTS AT AERE

Tues, 31 Jan, 2 p.m. Conf. Rm., Bldg 8.9.	Theor. Phys. Div. Seminar.	Dr. J.R. Willis (Univ. of Cambridge)	Second-order Effects of Dislocation in Anisotropic Crystals
Thurs, 2 Feb, 2 p.m. Conf. Rm., Bldg 8.9.	Joint Applied Maths Grp Seminar	Mr. A.R. Curtis	Error Bounds for Equal Interval Spline Interpolation

## Social News

**RECREATIONAL SOCIETY.** The new Membership Secretary, Mr. E.W. Clark, is now in the process of issuing 1967 membership cards to people who elected to have subscriptions deducted from their salaries or wages. People who wish to pay annually will be contacted as soon as possible. When a Recreational Society was first suggested, a preliminary survey form was sent to all personnel to ascertain the demand for such a Society. Of those in favour, over 60 people have not in fact joined. This may be due to the impression that the survey form was an application form, and that the actual application forms sent round later did not apply to them. It is therefore proposed to send application forms to all non-members by name so that everyone has an opportunity to join the Society in the early days of its formation, thereby enabling them to have a say in its future development.

Mr. Clark has also taken on the job of getting Building R.14 put into order. He will be available in R.14 most weekdays between 12.45 and 13.15 hours, to answer queries on membership and society activities.



**Social News - Contd.**

RECORD SOCIETY 12.30 p.m., Tuesday, 31 January, Lecture Theatre

"Dance with Kid Ory", the Kid Ory Dance Band with vocals by Marty Marsala

Kid Ory, trombonist and band leader, one of the great pioneers of the New Orleans tradition and a name revered by all traditional jazz enthusiasts. The tunes on the record to be played are all drawn from the standard jazz repertoire and include such numbers as Ja-Da, Fidgety Feet and 12th Street Rag.

CHRISTIAN FELLOWSHIP. A meeting of Prayer, Intercession and Meditation will be held in the PLA Conf. Rm, R.12, on Thursday, 2 Feb, at 12.30 p.m. All are welcome.

Rutherford Laboratory  
27.1.67..

H.F. Norris Ext 484  
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