

RUTHERFORD LABORATORY BULLETIN

No 70 for the fortnight commencing Monday, 16th April, 1962

VISITS ABROAD Mr. N.M. King of the Theoretical Group and Mr. E.J.N. Wilson of the Nimrod Magnet Group will be attached to C.E.R.N. for thirteen months commencing 1st May, where they will participate in beam design for the C.E.R.N. proton synchrotron.

P.L.A. The programme scheduled for the P.L.A. during the next fortnight is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
16th, 19th and 20th April.	Queen's University, Belfast and N.I.R.N.S.	Shell Structure Studies (p-2p)
21st-23rd April.	University College, London.	Measurement of Spin Correlation in p-p Scattering.
26th-27th April.	King's College, London.	(a) Liquid Argon Scintillations at 30 and 50 MeV. (b) Slit Scattering.
28th-29th April.	Clarendon Laboratory, Oxford.	Measurement of Capture Gamma Rays.
30th April.	N.I.R.N.S.	Radiation Shielding Experiment.

SAFETY SUGGESTIONS AWARDS The following awards were made at a meeting of the Safety Awards Committee on 26th March, 1962:

- Mr. M.R. Smith, R.9 Workshops - £2. 0. 0.  
(Two encouragement awards of £1. 0. 0.)
- Mr. D.A. Hutchings, Building R.5. - £2. 0. 0.

INTERNAL EVENTS

Mon. 16th April 11 a.m., New Conf. Rm., Building R.1.	Nimrod Lecture Series	Mr. D. Morgan (N.I.R.N.S.)	Pion-Pion Scattering.
Wed., 18th April, 4 p.m., New Conf. Rm., Building R.1.	Lecture	Prof. S.D. Drell (Stanford Univ. and C.E.R.N.)	Peripheral Interactions and High Energy Collisions.
(Please note the change of time for this lecture).			
Mon., 7th May, 11.15 a.m., New Conf. Rm., Building R.1.	Nimrod Lecture Series	Mr. L.B. Mullett	Progress Report on Nimrod.

EXTERNAL EVENTS

16th - 26th April: 19th International Conference on Large Electrical Systems, Paris.			
Mon., 16th April, 8 p.m., Royal York Hotel, Bath.	A.S.E.E. Lecture	Mr. R. Coombes	Crane Electrical Installations.
Tues., 17th April, 6.15 p.m., Engineers' Club, Manchester.	I.E.E. Lecture	Mr. E.C. Rogers	Gaseous Discharge in E.H.T. Cable Dielectrics.
Thurs., 19th April, Technical College, Brighton.	I.E.E. Lecture	Mr. K.K. Schwarz	High- and Low-Voltage Terminal Boxes.
Thurs., 26th April, 5 p.m., 26 Portland Place, London W.1.	Soc. Inst. Technology Lecture		Self-Adaptive Control Systems.
Fri., 27th April, 7 p.m., Keppel St., London W.C.1.	Inst. of Electronics Lecture	Mr. J.D. Bucking- ham (Edwards High Vacuum Ltd.)	Gas Analysis in Vacuum Systems.
Mon., 30th April, 6 p.m., Coll. Tech., Birmingham.	I.E.E. Lecture	Mr. G.B.B. Chaplin	Recent Advances in Semi- conductor Circuits (including Tunnel Diodes).
Wed., 25th April, 5.30 p.m., Savoy Place, London, W.C.2.	I.E.E. Lecture	Mr. L.F. Lamerton	Health Aspects of Ionizing Radiation.
30th April-1st May: Compressed Air and Hydraulics Exhibition, Empire Hall, Olympia			

# RUTHERFORD LABORATORY BULLETIN

No. 71, for the week commencing Monday, 30th April, 1962.

## VISITORS

✓ A party of operating staff from the Birmingham University proton synchrotron visited the Laboratory on Friday, 27th April.

## VISITS ABROAD

✓ Mr. M. Snowden, Head of the Bubble Chamber and Radiation Protection Groups, will visit Geneva on 2nd May to attend a meeting of the C.E.R.N. Track Chamber Committee.

## 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>
X 30th April and 5th May.	N.I.R.N.S. (Mr. W. Burrells)	Neutron Survey.
3rd, 4th May.	N.I.R.N.S.	(p,He) Polarisation

## INTERNAL EVENTS

X Mon., 7th May, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Mr. L. B. Mullett	Progress Report on Nimrod
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## EVENTS AT A.E.R.E.

Tues., 1st May: "Corrosion in Action", Colour Film. At the Cockcroft Hall, commencing 1.30 p.m. and ending at 2.40 p.m. (No passes required).

X Thurs., 3rd May, 2 p.m., Cockcroft Hall. (No passes required).	Culham Laboratory Colloquium	Mr. B. D. Power (Edwards High Vacuum Ltd.)	Advances in Diffusion Pumps for Very High Vacuum Systems.
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## EXTERNAL EVENTS

30th April - 4th May: Compressed Air and Hydraulics Exhibition, Olympia, London.

30th April - 5th May: Production Exhibition, Olympia, London.

X Thurs., 3rd May, 10 a.m.: "New Horizons in Stainless Steel". Conference of the Iron and Steel Institute and the Society of Chemical Industry (Corrosion Group). At Denison House, 296 Vauxhall Bridge Road, London, S.W.1.

9th and 10th May: Open Days at the National Physical Laboratory, Teddington. (A few tickets and programmes are available from B.E. Kingdon).

B. E. Kingdon

27th April, 1962.

MSG.

# RUTHERFORD LABORATORY BULLETIN

No. 72, for the week commencing Monday, 7th May, 1962

VISITS ABROAD The Director, accompanied by Mr. L. B. Mullett, Mr. J. D. Lawson, Dr. G. H. Stafford, Mr. W. Walkinshaw and Mr. J. J. Wilkins, will attend a meeting of the European Accelerator Study Group. to be held in Amsterdam on 14th-15th May.

VISITORS A party of thirty members of staff from the D.S.I R. Laboratory of the Government Chemist will visit the Rutherford Laboratory on Wednesday, 9th May.

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

Date	Team	Experiment
10th-12th May	N.I.R.N.S.	Accelerator Physics
13th and 14th May	{ Queen Mary	Polarisation in (pd) Si.
	{ College, London	
	{ Oxford University	Irradiation Experiments.
	{ Chemistry Group	

## EXTERNAL COURSES

An International Summer School of Physics will be held by the Italian Physical Society at Varenna this year. A course on "Elementary Particles" (23rd July-4th August) is included.

A two-weeks course on "Design, Use and Maintenance of Electronic Equipment used in Nuclear Physics" will be held on 25th June to 6th July at the Borough Polytechnic, London S.E 1. The course fee is £5.

(Application forms for the above courses, and full details, may be obtained from B. E. Kingdon, Building R.1).

## INTERNAL EVENTS

Mon., 7th May 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Mr. L. B. Mullett	Progress Report on Nimrod
Thurs., 17th May, 2.15 p.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Dr. Farley (C.E.R.N.)	New Experimental Verification of Quantum Electro- dynamics at short Distance.

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

Wed., 9th May, 12 noon-2.00 p.m. Conf. Room, Cockcroft Hall.	Film and Lecture.	Sciaky Electric Welding Machines Ltd.	Electron Beam Welding Process.
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(No passes required. A few brochures are available from B. E. Kingdon.)

## EXTERNAL EVENTS

Tues., 8th May, 4.15 p.m., 21 Banbury Road, Oxford.	Clarendon Laboratory Seminar	Dr. G. Barton	Decay Mechanism of the $\eta$ -Meson
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8th-18th May: Mechanical Handling Exhibition, at Earl's Court, London. (Tickets are available from B. E. Kingdon, Building R.1).

Wed., 9th May, 3.45 p.m., University of Leeds.	Physics Department Colloquium	Prof. B. H. Flowers (Manchester University).	The Superconduct- ing State of Nuclear Matter.
Wed., 9th May, 7.30 p.m., Masonic Temple, Broad St., Birmingham 1.	A.S.E.E. Lecture	Mr. B. A. W. Midgley	Static Switching Control Systems

9th and 10th May: Open Days at the National Physical Laboratory, Teddington. (A few tickets and programmes are available from B. E. Kingdon).

Fri., 11th May, 4.15, Clarendon Laboratory, Oxford.	Physics Colloquium	Prof. J. B. Brown (Univ. of British Columbia)	Low Temperature Physics at British Columbia
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# RUTHERFORD LABORATORY BULLETIN

No. 73, for the week commencing Monday, 14th May, 1962

## VISITORS

✓ A party of members of the Student Physical Society, University of Reading, will visit the Laboratory on Wednesday, 16th May.

## 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 May	{ Queen Mary College, { London. { Oxford University { Chemistry Group.	Polarisation in (pd) Si. Irradiation Experiments.
17th - 18th May	N.I.R.N.S.	(p,He) Polarisation Measurements.
19th - 20th May	N.I.R.N.S.	(p,n) Time-of-Flight Measurements.

## OPEN DAY

✓ It is intended to hold an open afternoon on June 16th, for the families of members of the Laboratory.

## SPOIL HEAP

✓ The contractors for shaping our large spoil heap, Messrs. Shepherd and Hill, will start work shortly and expect to take about eight weeks. During this period some nuisance from chalk dust is inevitable.

## LIBRARY NOTICE

✓ The following book is missing from the Rutherford Laboratory Library, Building R.1:-

Journal of Scientific Instruments, Bound Vol. 31 - 1954.

## INTERNAL EVENTS

Thurs., 17th May, 2.15 p.m., Conf. Rm., Building R1.	Nimrod Lecture Series	Dr. F. J. M. Farley (C.E.R.N.)	New Experimental Verification of Quantum Electro-dynamics at Short Distance.
Mon., 21st May, 11.15 a.m., Conf. Room, Bldg. R.1.	Nimrod Lecture Series	Prof. S. Mandelstam (Birmingham University)	Some Recent Ideas on High Energy and Diffraction Scattering.

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

\* Wed., 16th May (11 a.m. - 4 p.m.) and Thurs., 17th May (10 a.m. - 3.30 p.m.):  
Demonstration by Electronic Instruments Ltd., in the Conference Room, Cockcroft  
Hall. (No passes required 1 p.m. - 4 p.m. Wed., and 2 p.m. - 3.30p.m. Thurs.)

✓ Wed., 16th May, 2 p.m., Cockcroft Hall. (No passes required).  
Chemistry Division Colloquium Prof. A. W. Adamson (University of South California)  
Effect of High Energy Radiation on the Properties of Solid Surfaces.

Thurs., 17th May, 2 p.m., Conf. Rm., Building 364.  
Solid State Physics Colloquium Prof. E.W.J. Mitchell (Reading University)  
Some Aspects of Irradiation Damage in Solids.

\* A few brochures are available from B. E. Kingdon,  
Building R.1.

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Thurs., 17th May, 2 p.m., Cockcroft Hall.	Culham Laboratory Colloquium	Mr. B. McNamara  (No passes required)	Plasma Wave Boundary Conditions.
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EXTERNAL EVENTS

14th - 18th May: Mechanical Handling Exhibition, at Earl's Court, London.  
(Tickets are available from B. E. Kingdon, Building R.1.)

14th - 18th May: Laboratory Apparatus and Materials Exhibition. At the  
Exhibition and Royal Halls, Harrogate, Yorks. (Tickets are available from  
B. E. Kingdon).

15th - 18th May: Plastics Institute Conference, at Torquay, Devon.

Tues., 15th May, 4.15 p.m., 21 Banbury Road, Oxford.	Clarendon Laboratory Seminar	Dr. G. Salmon	Beam Extraction from the Harwell Cyclotron.
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Thurs., 17th May, 2.30 p.m., Imperial College, London.	Inst. Phys. & Phys. Soc. Lecture	—	British and Continental Surveying Instruments.
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Fri., 18th May, 2.30 p.m., 21 Banbury Road, Oxford.	Clarendon Laboratory Seminar	Prof. F. E. Low (M.I.T.)	Bound States and Elementary Particles.
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Fri., 18th May, 4.15 p.m., Clarendon Lab., Oxford.	Colloquium	Dr. L. Mandel (Imperial College)	Coherence Properties of Light Beams.
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Mon., 21st May, 8 p.m., Grand Hotel, Bristol.	A.S.E.E. Lecture	Mr. S. J. Emerson	Fire, Accident and Explosion Hazards.
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B. E. Kingdon  
Scientific Administration

11th May. 1962

AKF

# RUTHERFORD LABORATORY BULLETIN

No. 74, for the week commencing Monday, 21st May, 1962

## VISITORS

✓ Forty members of the Leicester and County Branch of the Mathematical Association visited the Laboratory on Saturday afternoon, 19th May.

## VISITS ABROAD

✓ Mr. T. Gubbins of the P.L.A. Accelerator Physics Group left on 20th May for the U.S.A., where he will attend the 7th Symposium on Hydrogen Thyratrons and Modulators at Fort Monmouth, New Jersey, and also visit laboratories at Yale, Argonne and Berkeley to discuss R.F. supplies and modulators for accelerators. He will return on 3rd June.

## 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>
X 21st - 24th and 26th May	N.I.R.N.S.	(p,n) Time-of-Flight Measurements.
27th - 28th May	King's College, London.	(a) Slit Scattering. (b) Total Reaction Cross- Sections for Protons.

## NUCLEAR PHYSICS CONFERENCE

The Institute of Physics and the Physical Society is sponsoring a conference on "Low Energy Nuclear Physics", to be held at A.E.R.E. on 12th, 13th and 14th September, 1962. It is proposed to devote sessions to the following:-

✓ The nuclear interactions of slow and fast neutrons,  
Nuclear reactions induced by charged particles and gamma-rays,  
Nuclear-nucleon interactions,  
Nuclear structure and nuclear models.

Registration is necessary, and programmes and application forms are available from the Conference Secretary, Dr. G. C. Morrison, Nuclear Physics Division, Hangar 8. Offers of contributions are requested and should be sent with three copies of abstracts (100 words) as soon as possible, and not later than 23rd July, to the Conference Secretary.

## INTERNAL EVENTS

X Mon., 21st May, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Prof. S. Mandelstam (Birmingham University)	Some Recent Ideas on High Energy and Diffraction Scattering.
Mon., 28th May, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Dr. F. Heyman (University Coll. London)	The Measurement of Pion- Pion Cross-Sections Using Spark Chambers. (A suggested experiment for Nimrod).
Wed., 30th May, 2 p.m., Conf. Rm., Building R.12.	P.L.A. Group Seminar	Dr. P. Fisher (Clarendon Laboratory)	High Energy Collective States in $O^{16}$ and $N^{13}$ .

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EVENTS AT A.E.R.E.

"Harwell", a new film describing the work of A.E.R.E. will be shown in the Cockcroft Hall on the following dates: 22nd May, 2.30 p.m.; 25th May, 12.15 p.m., 1 p.m., 3.30 p.m.; 28th May, 10.30 a.m., 12.15 p.m., 1 p.m.; 30th May, 12.15 p.m., 1 p.m. The film lasts approximately half an hour, and no passes will be required on 25th and 28th May. "Harwell" will also be shown with other films of atomic energy interest on 28th May from 7 p.m. to 8.30 p.m., and families will be most welcome.

Thurs., 24th May: "Survival", C.E.G.B. site safety film. At 1.30 p.m. in Cockcroft Hall. (No passes required).

Thurs., 24th May, 2.15 p.m. Cockcroft Hall. (No passes reqd)	Culham Lab. Colloquium	Mr. K. Aitken and Mr. J. Jukes	Hardcore Pinch Stability - Theory and Experiment.
Fri., 25th May, 11 a.m. Room 1-16. Hangar 8.	Nuclear Physics Colloquium	Prof. D. Saxon (Univ. of California)	The Optical Model and Non-Local Potentials.

EXTERNAL EVENTS

Mon., 21st May, 5 p.m., Reading University.	Physics Department Colloquium	Dr. K. Wright (National Eng. Lab., Glasgow)	Exo-electron Emission.
Mon., 21st May 8 p.m., Grand Hotel, Bristol.	A.S.E.E. Lecture	Mr. S. J. Emerson	Fire, Accident and Explosion Hazards.
Tues., 22nd May, 4.15 p.m. 21 Banbury Road, Oxford.	Clarendon Laboratory Seminar	Dr. P. Hodgson	The Shape of the Optical Potential.
Wed., 23rd May, 2 p.m., Keppel St., London W.C.1.	Brit. I.R.E. Discussion Meeting	Laboratory Work in Advanced Radio and Electronic Education - Its Aims and Methods.	
Wed., 23rd May, 4.30 p.m., University College London.	Physics Department Seminar	Dr. J. B. Adams (A.E.A. Culham Laboratory)	Some Recent Ideas about High Energy Accelerators.
Thurs., 24th May, 2.30 p.m., Queen Mary Coll. London.	Nuclear Physics Seminar	Dr. D. F. Falla	Design Studies for a Stopping $K^-$ Beam for Nimrod.
Mon., 28th May, 4.45 p.m., Bristol University.	Physics Department Colloquium	Professor M. H. L. Pryce	Is Field Theory Really Necessary?

28th May - 2nd June: Instruments, Electronics and Automation Exhibition, at Olympia, London. (Tickets are available from B. E. Kingdon, Building R.1, Extension 484).

B. E. Kingdon

Scientific Administration

18th May, 1962.

# RUTHERFORD LABORATORY BULLETIN

No. 75, for the week commencing Monday, 28th May, 1962

## BOARD MEETING

A meeting of the Governing Board of the National Institute was held at the Laboratory on Tuesday, 22nd May.

## VISITORS

Dr. W. J. Youden, the Statistical Consultant at the National Bureau of Standards, Washington, will be at the Rutherford Laboratory until Friday, 1st June. Anyone wishing to see Dr. Youden should contact Dr. J. Howlett, Building R.1, Ext. 547.

Mr. William Willis, Vice President of Messrs. W. M. Brobeck and Associates, California, an engineering firm specialising in accelerator development, will visit the Laboratory on Wednesday, 30th May. Anyone wishing to see Mr. Willis should contact Mr. F. Telling, Building R.1, Ext. 512.

Thirty Graduate Electrical Engineers, members of the Associated Electrical Industries Overseas Association, will visit the Laboratory on Wednesday, 30th May.

## VISITS ABROAD

Mr. H. Hadley and Mr. D. J. Woodington of the Engineering Design Group left for Geneva on Friday, 25th May, for discussions on the electrical installations for the British National Hydrogen Bubble Chamber at C.E.R.N. They will return on Wednesday, 30th May. Mr. R. Wimblett of the Engineering Design Group also left for C.E.R.N. on Sunday, 27th May, in connection with the same project. He will return on Thursday, 31st May.

Mr. J. Dickson of the P.L.A. Group left for C.E.R.N. on Sunday, 27th May, for discussions on linear accelerators. He will also visit Zurich in connection with superconductivity measurements before returning on Thursday, 31st May.

Dr. R. J. Griffiths of the P.L.A. Group will visit the Nordita Institute, Copenhagen, for four days commencing 6th June, for discussions on nuclear physics experiments.

## 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>
28th May	King's College, London.	(a) Slit Scattering. (b) Total Reaction Cross- Sections for Protons.
2nd - 3rd June	(Setting up Polarised Proton Source).	

## AWARDS AND COMPETITIONS

Applications are invited for Whitworth Fellowships and Exhibitions for study or research in engineering, for competition in 1963. The closing date for applications is 31st July, 1962.

The Journal "Research" is sponsoring the tenth Essay Competition for the Waverley Gold Medal and money prizes. The closing date for entries is 31st July, 1962.

Details of each of the above may be obtained from B. E. Kingdon, Building R.1.

## B.B.C. BROADCAST

A programme entitled "The Men Outside", consisting mainly of recorded interviews with members of the A.E.R.E. staff, will be broadcast on the B.B.C. Home Service at 10.10 p.m. on Sunday, 3rd June.

(Events Overleaf)

INTERNAL EVENTS

Wed., 30th May, 11.15 a.m., Conf. Room, Building R.1.	Nimrod Lecture Series	Mr. E. Taylor (A.E.R.E. and C.E.R.N.)	p-p and p-n Interactions between 3 and 27 GeV. (An account of recent experiments on the C.E.R.N. synchrotron).
X Wed., 30th May, 2 p.m., Conf. Rm., Building R.12.	P.L.A. Group Seminar	Dr. P. Fisher (Clarendon Laboratory)	High Energy Collective States in $O^{16}$ and $N^{13}$ .
Mon., 4th June, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Mr. J. Burren (N.I.R.N.S.)	The Rutherford Laboratory Computing Programme for Data Reduction.

EVENTS AT A.E.R.E.

Tues., 29th May : Film "Entropy", by International Combustion Limited. 2.15 p.m., in the Cockcroft Hall. (No passes required).

X Fri., 1st June : Film "The Place Where I Work", by the Bradwell Nuclear Power Group. 12 noon (to 1 p.m.), in the Cockcroft Hall. (No passes required).

EXTERNAL EVENTS

28th May - 2nd June : Instruments, Electronics and Automation Exhibition, at Olympia, London. (Tickets are available from B. E. Kingdon, Building R.1, Ext. 484).

28th May - 2nd June : Exhibition of Carl Zeiss High Voltage Units and Insulating Transformers, by Messrs. Degenhardt and Co. Ltd., 6 Cavendish Square, London W.1. (Details of these and other items to be shown may be obtained from B. E. Kingdon).

X Mon., 28th May, 4.45 p.m., Bristol University.	Physics Department Colloquium	Professor C. F. Powell	The Neutrino Experiment, Part II. (Results from C.E.R.N. and Brookhaven).
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(Please note that this lecture is in place of one by Professor M. H. L. Pryce on Field Theory, advertised in last week's Bulletin).

Wed., 30th May, 5.30 p.m., 1-7 Gt. George St., London, S.W.1.	Inst. Civil Engineers Lecture	Sir Roger Makins (Chairman, U.K.A.E.A.)  (Admission by ticket only).	Nuclear Energy - A Year of Promise.
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Fri., 1st June, 4.15 p.m., Clarendon Lab., Oxford.	Physics Colloquium	Dr. J. B. Adams (A.E.A. Culham Laboratory)	Proton Accelerators and their Future Development.
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B. E. Kingdon

Building R.1  
Rutherford Laboratory

28th May, 1962

# RUTHERFORD LABORATORY BULLETIN

No.76, for the fortnight commencing Monday, 4th June, 1962

## VISITORS

✓ Dr. Bhabha, Chairman of the Indian Atomic Energy Commission, is expected to visit A.E.R.E. and the Rutherford Laboratory on Monday, 4th June. He will be accompanied by Sir Rober Makins, Chairman, U.K.A.E.A.

✓ Thirty members of the Maxwell Society, King's College, London, will visit the Laboratory on Wednesday, 6th June.

## VISITS ABROAD

✓ The Director will visit Geneva on 12th-14th May, to attend a meeting of the C.E.R.N. Council.

✓ Mr. P. Bowles, Chief Engineer, and Mr. G. E. Simmonds, Head of the Central Engineering Group, together with Mr. M. J. Moore of Liverpool University, a Consultant to the Institute, will be in the United States from 21st June to 16th July. They will visit laboratories at Berkeley, Argonne, Cambridge, Brookhaven and the California Institute of Technology to view engineering work on current and future accelerators.

## NUCLEAR PHYSICS CONFERENCE

A conference on "Nuclear Interactions at Ultra High Energies" will be held by the Institute of Physics and the Physical Society on 7th and 8th January, 1963, at the H. H. Wills Physical Laboratory, University of Bristol. It is proposed that the main topics will be as follows:-

Observations of high energy cosmic ray collisions,

Particle production in the 20-30 GeV range (accelerators),

✓ The muon component and its inter-relation with the characteristics of high energy collisions,

Extensive air showers, and their propagation through the atmosphere,

Phenomenological models of the interactions,

Field theoretical interpretation of high energy nuclear collisions.

Approximately nine main papers will be given, but offers of short contributed papers may be sent to the Conference Secretary, Dr. D. H. Perkins, H. H. Wills Physical Laboratory, Royal Fort, Bristol 8.

## P.L.A.

The programme scheduled for the P.L.A. during the next fortnight is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
X 4th - 8th June	Birmingham University	(p,p) Polarisation
9th - 13th June	N.I.R.N.S.	(p,He) Polarisation

## EVENING LECTURES

✓ The first two lectures in the new series will be on "Optics, Radiation and Accelerators". These will be given by Mr. J. D. Lawson at 5.30 p.m. on 19th and 26th June, in the Conference Room, Building R.1. There will be two more lectures on other subjects in July.

## FELLOWSHIP AWARDS

A small number of Post-Doctoral Fellowships, tenable in Australia, are available under the sponsorship of the Australian Institute of Nuclear Science and Engineering which is an organisation set up jointly by the Australian Universities and the Australian Atomic Energy Commission. Applications will be considered on a continuous basis, so no closing date is specified in the announcement, copies of which may be seen on Laboratory notice-boards.

## EXTERNAL COURSE

✓ A full-time Post-Graduate Diploma Course in Automatic Control will be held at the Northampton College of Advanced Technology, London E.C.1., commencing Monday, 1st October, 1962. Details may be obtained from Mr. T. R. Walsh, Room 2-81, Building R.1.

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### INTERNAL EVENTS

Mon., 4th June, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Dr. P. Murphy (N.I.R.N.S.)	Possible Experiments on Rare Decay Modes of Hyperons.
Mon., 18th June, 11.15 a.m., Conf. Rm., Building R.1.	Nimrod Lecture Series	Mr. J. Burren (N.I.R.N.S.)	The Rutherford Laboratory Computing Programme for Data Reduction.

(Please note the changed arrangements for the above lectures).

### EXTERNAL EVENTS

Tues., 5th June, 2.30 p.m., Imperial Coll., London.	Theoretical Physics Seminar	Professor M. Iresden (Iowa Univ.)	Field Theories with Persistent One-Particle States and Regge Poles.
Tues., 5th June, 4.15 p.m., 21 Banbury Road, Oxford.	Clarendon Lab. Nuclear Physics Seminar	Dr. G. Dearnaley (A.E.R.E.)	Semiconductor Counters.
Wed., 6th June, 4.30 p.m., University Coll., London.	Physics Department Seminar	Dr. G. V. Groves	Rocket Release Studies of the Upper Atmosphere.
Thurs., 7th June, 2.30 p.m., Queen Mary Coll., London.	Nuclear Physics Seminar	Mr. M. G. Mandel	The Excitation of Nuclear Collective States by $\alpha$ -particles.
Fri., 8th June, 4.15 p.m., Clarendon Lab., Oxford.	Nuclear Physics Colloquium	Dr. R. J. Blin- Stoyle	Leptons.
Tues., 12th June, 2.30 p.m., Imperial Coll., London.	Theoretical Physics Seminar	Mr. J. C. Stoddart (Manchester University)	Applications of Conformal Mapping in Pion Physics.
Tues., 12th June, 4.15 p.m., 21 Banbury Road, Oxford.	Clarendon Lab. Nuclear Physics Seminar	Dr. M. K. Pal (A.E.R.E.)	Vibrations of Spherical Nuclei.

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

Thurs. 7th and Fri. 8th June : Demonstration of Transistorised Analogue Computers, by Electronic Associates Ltd., 11 a.m.-3.30 p.m. in the Conference Room, Cockcroft Hall. (No passes required).

Building R.1,  
Rutherford Laboratory.

B. E. KINGDON

1st June, 1962

# RUTHERFORD LABORATORY BULLETIN

No.77, for the week commencing Monday, 18th June, 1962

## VISITORS

✓ Dr. J. W. Bittner, from the Brookhaven National Laboratory, New York, will visit the Rutherford Laboratory on 18th-22nd June, to discuss high energy particle accelerators. Anyone wishing to see Dr. Bittner should contact Mr. J. Dickson, Exten.446, or Mr. K. Batchelor, Exten.221.

## VISITS ABROAD

✓ Dr. G. H. Stafford will visit C.E.R.N. on 3rd-18th July, to attend the 1962 International Conferences on High Energy Physics and Instrumentation.

## 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>
18th - 25th June	N.I.R.N.S.	(p,p) Polarisation

## CONSULTANT

✓ The appointment of Professor A. Salam, F.R.S., of the Imperial College of Science and Technology, as Consultant to the Institute has been extended for a period of one year commencing 24th June, 1962.

## RUTHERFORD LABORATORY JOURNAL

✓ The first issue of a Laboratory Journal will be published in a few weeks' time. It will attempt to create a popular and lively image of the activities and aims of the Rutherford High Energy Laboratory and to provide a platform for a broad range of topics related to work with N.I.R.N.S.

All Laboratory personnel may use its pages either by offering articles or more simply by writing "Letters to the Editor". Contributions of either type are invited now and should be addressed to The Editor, Rutherford Laboratory Journal, Building R.1.

## NATIONAL SAVINGS CERTIFICATES

✓ Arrangements have now been made for Institute staff to collect National Savings Certificates from the Cash Office, Building R.20, instead of the A.E.R.E. Cash Office. Certificates from Cycle No.63, which ended on 31st May, are now ready for collection.

## ADMINISTRATION NOTICE

✓ A Vauxhall car, registration number DUR87, appears to have been abandoned on "D" car park (east of Building R.12), and is causing some inconvenience. Would the owner please contact the Administration Office, Room 1-50, Building R.1., Exten.259.

## INTERNAL EVENTS

Mon., 18th June, 11.15 a.m., Conf. Rm., Bldg.R.1.	Nimrod Lecture Series	Mr. J. Burren (N.I.R.N.S.)	The Rutherford Laboratory Computing Programme for Data Reduction.
Mon., 25th June, 11.15 a.m., Conf. Rm., Bldg.R.1.	Nimrod Lecture Series	Dr. A. Ashmore (Queen Mary Coll., London)	Possible Counter Experiments with Stopping K's.

The first two lectures in the new evening series will be on "Optics, Radiation and Accelerators". These will be given by Mr. J. D. Lawson at 5.30 p.m., on 19th and 26th June, in the Conference Room, Building R.1. There will be two more lectures on other subjects in July.

Cont'd overleaf ....

EVENTS AT A.E.R.E.

Mon., 18th June : Exhibition of Analytical Instruments by Messrs. Elliott Brothers, London. 11 a.m.-4 p.m. in the Conference Room, Cockcroft Hall. (Outer gate open - no passes required. Inner gate manned 12 noon-2 p.m.). Among the items to be featured are Moisture Monitors, Leak Detectors and Gas Analysers.

Wed., 20th and Thurs., 21st June : U.S.A.E.C. Films : "Nuclear Reactors for Space", "SNAP III Operations Tests", and "Atoms for Space". 10.30 a.m. in the Cockcroft Hall. (No passes required). The programme lasts one hour. Tickets, limited in number, may be obtained from the Administration Office, Building R.1., Exten.258.

EXTERNAL EVENTS

18th-21st June : Exhibition of new electronic equipment produced in the United States and available in the United Kingdom. At the U.S. Trade Centre, 57 St. James's Street, London S.W.1.

Tues., 19th June, 2.30 p.m., Imperial College, London. Theoretical Physics Seminar Dr. M. M. Islam High Energy Quasi-Elastic Proton - Proton Scattering.

Tues., 19th June, 4.15 p.m., 21 Banbury Road, Oxford. Clarendon Lab. Nuclear Physics Seminar Mr. N. J. Stone Nuclear Alignment of Gold Isotopes.

Wed., 20th June, 4.30 p.m., University College London. Physics Department Seminar Dr. P. E. Hodgson (Clarendon Laboratory) Optical Model Analyses of Nuclear Interactions.

Fri., 22nd June, 2.30 p.m., Queen Mary College, London. Nuclear Physics Seminar Dr. S. Doniach Quantum Numbers of the New Elementary Particle Resonances.

25th-28th June : Symposium on Adhesion. Rubber and Plastics Association of Great Britain, at Attingham Park, near Shrewsbury, Salop.

25th-30th June : Symposium on Electromagnetic Theory and Antennas, Copenhagen.

Building R.1.,  
Rutherford Laboratory.

B. E. KINGDON  
Scientific Administration

15th June, 1962

VDP

# RUTHERFORD LABORATORY BULLETIN

No. 78, for the week commencing Monday, 25th June, 1962

✓ VISITING COMMITTEE The next meeting of the Visiting Committee of the National Institute will be held at the Laboratory on Tuesday, 26th June.

✓ VISITS ABROAD Mr. W. Walkinshaw of the Theoretical Group and Mr. K. Batchelor of the P.L.A. Group will visit C.E.R.N. on 26th-29th June for discussions on very high energy accelerators.

✓ Dr. P. J. Duke of the Nimrod Nuclear Physics Group will visit C.E.R.N. for eight weeks commencing 27th June, in preparation for experimental work on the C.E.R.N. proton synchrotron.

✓ Dr. R. H. Thomas and Dr. C. M. Fisher of the Bubble Chamber Group will visit C.E.R.N. on 1st-3rd July for discussions on heavy liquid bubble chamber experiments.

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>
28th-29th June	Queen Mary College, London	Preliminary Runs for R.A. Measurement in (p,p) Polarisation.
30th June	Queen's University, Belfast, and N.I.R.N.S.	Preliminary Test for (p,d) Polarisation Experiment.

## INTERNAL EVENTS

Mon., 25th June, 11.15 a.m. Conf. Rm., Bldg. R.1.	Nimrod Lecture Series.	Dr. A. Ashmore (Queen Mary Coll., London)	Possible Counter Experiments with Stopping K's.
Tues., 26th June, 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Mr. J. D. Lawson	Optics, Radiation and Accelerators (2nd Lecture).
(Notes for the first lecture are available from Mr. Lawson, Building R.1.)			
Mon., 2nd July, 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Mr. J. J. Wilkins (N.I.R.N.S.)	Progress Report on Beam-Handling Equipment for Nimrod.

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

Mon., 25th June: U.S.A.E.C. Films, "Atoms for Space", "Snap III Operations Tests", and "Nuclear Reactors for Space". 11 a.m. in the Cockcroft Hall. The programme lasts one hour. (No tickets or passes required).

Mon., 25th June: Exhibition of Digital Measuring Instruments, Frequency Meters and Tachometers, by Racal Electronics Ltd. 10.30 a.m.-4 p.m. in the Conference Room, Cockcroft Hall. (No passes required).

Tues., 26th June: Mobile Exhibition of Small Tools and Machine Shop Equipment, by Messrs. A. A. Jones and Shipman Ltd. 10.30 a.m.-4 p.m. in the South Side Car Park adjacent to A.E.R.E. Library, Building 465 (outside the fence).

Tues., 26th June, 11 a.m.-4 p.m., and Wed., 27th June, 10.30 a.m.-3.30 p.m.: Exhibition of the Industrial Application of Plastics, Resins and Chemical Intermediates, by the Shell Chemical Co. Ltd. In the Cockcroft Hall (no passes required). A half-hour film show will be given at 1 p.m. each day (no tickets required). Brochures may be obtained from B. E. Kingdon, Room 2-80, Building R.1.

## EXTERNAL EVENTS

Wed., 27th June, 4.30 p.m., University College London.	Physics Department Seminar	Dr. C. Henderson	The Physics Programme of the U.C.L. Bubble Chamber Group.
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# RUTHERFORD LABORATORY BULLETIN

No. 79, for the week commencing Monday, 2nd July, 1962

VISITORS Dr. W. F. Baker of the Brookhaven National Laboratory, New York, will visit the Rutherford Laboratory on 9th and 10th July for discussions on high energy physics experiments and equipment. Anyone wishing to see Dr. Baker should contact Dr. W. Galbraith, Building R.1, Ext. 572.

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>
5th-8th July	A.E.R.E.	Total Cross-Section Measurements.

NIMROD VACUUM VESSELS To date, five production outer vacuum vessels and two production inner vessels have been delivered to the Laboratory from the contractors, Messrs. Marston Excelsior Limited, Wolverhampton. A small number of leaks have been located and repaired during the proof vacuum tests carried out in the Experimental Area.

Outer vessels have been installed in Octants 4 and 5, adjacent to the shielding wall, and the latter vessel has been vacuum-tested in situ with very satisfactory results.

A successful trial installation of the prototype inner vessel has been completed in Octant 5, and it is hoped that within the next few weeks the outer vessel already installed in this octant will be pulsed under vacuum during the magnetic survey.

MERCURY COMPUTER The A.E.R.E. "Mercury" Computer will be shut down for the period 2nd-15th July inclusive. A slightly restricted service has been arranged on other "Mercury" installations.

EXTERNAL COURSE A Summer School on "Teaching Machines and Programmed Learning" will be held by the Brighton College of Technology on 3rd-8th September, 1962. The course fee is £2. 10s. Details may be obtained from B. E. Kingdon, Building R.1, Extension 484.

VACANCIES AT C.E.R.N. Further vacancy notices, covering a wide range of posts, have been received from C.E.R.N., Geneva. Details may be obtained from the Personnel Branch, Room 68, Building R.20.

## INTERNAL EVENTS

Mon., 2nd July, 11.15 a.m., Conf. Rm., Bldg. R.1.	Nimrod Lecture Series	Mr. J. J. Wilkins (N.I.R.N.S.)	Progress Report on Beam-Handling Equip- ment for Nimrod
Tues., 3rd July, 5.30 p.m., Conf. Rm., Bldg. R.1.	Evening Lecture Series	Mr. E.R. Harrison (First of two lectures on the geomagnetic field).	The Earth's Interplanetary Environment.

## EXTERNAL EVENTS

2nd-6th July: Institute of Physics and Physical Society Conference on the Ionosphere. At Imperial College, London.

Tues., 3rd July, 7.30 p.m., Great Western Hotel, Reading.	A.S.E.E. Lecture	Mr. S. J. Emerson (H.M. Chief Elec- trical Inspector of Factories.)	The Development of Electricity in Industry and the Home during this Century.
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4th-11th July: 11th International Conference on High Energy Nuclear Physics. C.E.R.N., Geneva.

Thurs., 5th July: Institution of Electrical Engineers Conversazione. At the Royal Festival Hall, London.

5th-11th July: 17th Annual Electronics, Instruments, and Components Exhibition and Convention of the Institute of Electronics. At the College of Science and Technology, Manchester.

29th June 1962.

B. E. Kingdon  
Scientific Administration