

Rutherford Laboratory Bulletin

No. 39/66

3 Oct 66

General News

VISITORS Science Research Council visit. Members of the Council and senior S.R.C. officers will visit the Laboratory on Thursday, 6 October. A detailed programme for the visit is given in Rutherford Laboratory Circular No. 24/66.

BLOOD DONORS The Blood Donor Clinic will be held in the Conference Room, R.12, on 5 and 6 October and NOT in R.1 as previously arranged.

ELECTRONIC LECTURES Arrangements are being made for two different lectures on "Operational Amplifiers" to be given by Mr. Carl Jackson of Nexus Research Laboratories, U.S.A., on Thursday, 13 October, at the Post Graduate Education Centre, A.E.R.E., under the auspices of Livingston Components Ltd. The provisional times for the lectures are 11 a.m. and 2.15 p.m. Anyone interested should contact Mr. P. A. Newson, Building 347/T1, Ext. 4377 as soon as possible.

INSURANCE BROKERS David Macintosh (Insurance) Ltd. wish to inform all staff that their representative will, in future, visit A.E.R.E. every Thursday and NOT Fridays, in Building 303, Ext. 72-2100. Appointments can be made at the Rutherford Laboratory, if especially requested, by ringing Ext. 263.

LIBRARY NOTICE The reference copy of the 1960 International Conference on High Energy Physics held at Rochester is missing. Would anyone with information on the present whereabouts of this copy please contact the Library, R.20, on Ext. 384.

P.L.A. The P.L.A. has been shut from 5 September to 2 October for routine maintenance. The main work during this period has been concerned with the division of the experimental area into cells to facilitate setting up. Preparatory work for 800 usec operation has been undertaken, also final commissioning of the new low power drive.

OVERSEAS VISITS Dr. L. C. W. Hobbs, to C.E.R.N., 5-11 October, to attend a meeting of E.C.F.A. Working Group 2.

Mr. N. M. King, to C.E.R.N., 5-7 October, to attend a meeting of E.C.F.A. Sub Group 2 and for discussions.

Mr. J. C. Louth, to C.E.R.N., 6-8 October, to attend a meeting of E.C.F.A. Working Group 2.

Machine Schedules

NIMROD Period 2/66 - Cycle 6 (20.9.66-11.10.66)

Machine Physics; High Energy Physics: (K4, K6, K1, K7, θ 1 and π 4)

Full details of Cycle 6 were given in Bulletin No. 37/66

P.L.A.

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
3-4 Oct.		Accelerator Physics
5-6 Oct.	R.H.E.L.	Polarimeter Calibration
7-10 Oct.	Oxford Univ.	C ¹² (p,t) C ¹⁰ Asymmetries

Internal Events

Tues., 4 Oct. Nimrod
11.15 a.m., Lecture Series
Lecture Theatre
Further Reports on the Berkeley Conference, by Dr. R. J. N. Phillips and Dr. N. H. Lipman

EVENTS AT A.E.R.E.

Tues., 4 Oct., 2 p.m., Conf. Rm., Bldg. 8.9	Theor. Phys. Div. Seminar	Prof. F. C. Frank (Univ of Bristol)	Cracks
Thurs., 6 Oct., 2 p.m., Conf. Rm., Bldg. 8.9	Joint Applied Maths Group Seminar	Dr. I. C. Pyle	File Storage on the System 360
Thurs., 6 Oct., 3.30 p.m., Conf. Rm., H.8.	Nuclear Phys. Div. Colloq.	Dr. G. C. Neilson	Nuclear Physics at University of Alberta with Emphasis on the On-line Users Facility

External Events

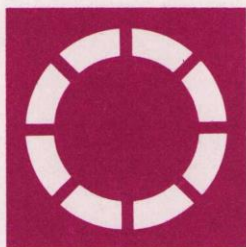
Fri., 7 Oct., Inst. of
5.30 p.m., Univ. Maths
of Bristol Lecture
Prof. H. Bondi
(King's College London)
Gravitation

Business Efficiency Exhibition 3-12 Oct, at Olympia London. A few tickets are available from H. F. Norris, Building R.20, Ext. 484.

Social News

CIVIL SERVICE MOTORING ASSOCIATION - Extension to membership. Membership of the C.S.M.A. is now open to all personnel of the S.R.C., U.K.A.E.A. and M.R.C. Please write to C. H. Booth, Building R.20 giving details of Building No. and telephone extension, for application forms. Existing members at present unknown to Mr. Booth are asked to contact him so that they may be advised of local events.

CHRISTIAN FELLOWSHIP A meeting of Prayer, Intercession and Meditation will be held in the Conference Room, top floor of Building R.2, Thursday, 6 October, 12.30 p.m. Please note temporary change of venue. All are welcome.



Rutherford Laboratory Bulletin

No. 40/66

10 Oct 66

General News

VISITORS. Dr. A.G. Sitenko, Head of the Department of Theoretical Nuclear Physics at the Institute of Physics of the Ukrainian Academy of Sciences, will visit the Rutherford Laboratory on Monday, 17 October. Details of lectures to be given by Dr. Sitenko at Oxford University, Culham Laboratory and the Rutherford Laboratory are given in "Internal and External Events" below.

32 members of the Institution of Municipal Engineers will visit the Laboratory on Tuesday, 11 October.

RHEL TELEVISION PROGRAMME. From October 11 to 21st a unit from Granada Television will be at the Laboratory, filming Nimrod and some of the associated experimental work. This is for a programme about the Rutherford Laboratory, which will be part of a Schools Television series for Science Sixth Forms.

RADIATION PROTECTION NOTICE It is now Period 11 (30 Sept - Monday 31 Oct.) Colour Strip GREY (on $\beta\gamma$ films and fast neutron films). Please check that you are wearing the correct film badges.

ELECTRONICS LECTURES. It is regretted that the lectures on "Operational Amplifiers" which were to have been given on 13 October at the Post Graduate Education Centre, AERE, have now been cancelled.

LOST PROPERTY Will the person who took, by mistake, the wrong grey nylon raincoat from the Restaurant on Friday, 30 September please get in touch with Mr. H. Wroe, Ext. 358 or 389. The coat contained a film badge, No. 115178 (grey strip).

Machine Schedules

NIMROD Period 2/66 - Cycle 6 (20.9.66. - 11.10.66.)

Machine Physics, High Energy Physics: (K4, K6, K1, K7, ϕ 1 and π 4)

Full details of Cycle 6 were given in Bulletin No. 37/66

P.L.A.

Date	Team	Experiment
9-10 Oct.	Oxford Univ.	$C^{12}(p,t)C^{10}$ Asymmetries
14 Oct.	Space Research, Slough.	Counter Tests
15-23 Oct.	KCL & RHEL	Elastic and Inelastic Proton Scattering from Zinc Isotopes

Internal Events

Mon 10 Oct, 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Prof. P.C. Murphy (Man. Univ.)	Non-Strange Baryon Resonances
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DEMONSTRATION: The "D-Mac" Mark 1A system (spark chamber measuring machine or bubble chamber rough digitiser) will be demonstrated in the Conference Room, R.1, 10 a.m. - 1 p.m. and 2 p.m. - 4 p.m. on Wednesday, 12 and Thursday 13 October.

Wed, 12 Oct. 2 p.m. Conf. Rm, R.12.	P.L.A. Division Seminar	Dr. K. Chackett	"How and Why" (Nuclides far from the Stability Line.)
Thurs, 13 Oct. 11 a.m. Lecture Theatre	Applied Physics Talk	Dr. R. Taylor (This talk should be of interest to all concerned with computer programs)	Transferring Computer Programs to the Rutherford System/360
Mon 17 Oct. 2.30 p.m. Lecture Theatre	Special Lecture	Dr. A.G. Sitenko (U.S.S.R.) (See also "External Events" below for details of three other lectures)	Inelastic Scattering of Fast Particles by Nuclei and Two-Nucleon Correlations in Nuclei

Nimrod Lecture on Monday, 17 October - to be announced.

External Events

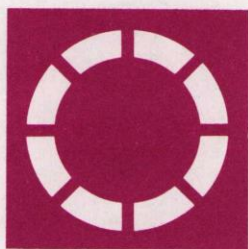
Tues 11 Oct. 2 p.m. Conf. Rm. Bldg 8,9, AERE	Theoretical Physics Seminar	Dr. F.S. Levin	Intermediate Structure, Doorway States and Two Particle Transfer Reactions
Wed 12 Oct. 5 p.m. 21 Banbury Rd, Oxford.	Nuclear Physics Seminar	Dr. A.G. Sitenko (U.S.S.R.)	Optical Model of the Interaction of Complex Particles with Nuclei

DISPLAY: The Plastics Development Workshop, Building 30, AERE, will demonstrate a range of products and processes on 12-26 Oct. inclusive, 9 a.m.-4 p.m. each working day. (Passes are necessary)

Thurs 13 Oct 2 p.m. Conf. Rm Bldg 8,9 AERE	Joint App. Maths Group Seminar	Mr. C. Strachey (Oxford Univ.)	Relationship of Operating Systems to Programming Languages
Thurs 13 Oct. 4.15 p.m. Clarendon Lab. Oxford.	Theoretical Physics Seminar	Dr. A.G. Sitenko (U.S.S.R.)	The Bound State of Three Nucleons and the Scattering of a Nucleon by a Bound Two-Nucleon System.
Fri 14 Oct 2 p.m. Room G8 Bldg E6, Culham Lab.	Lecture	Dr. A.G. Sitenko (U.S.S.R.)	Scattering and Transformation of Waves on Fluctuations in Magnetoactive Plasma

Social News

CHRISTIAN FELLOWSHIP. "Good News? What Good News?" A talk by Evangelist Tom Wilson will be given in the PLA Conf. Room, R.12 at 12.30 p.m. on Thurs. 13 October. All are welcome.

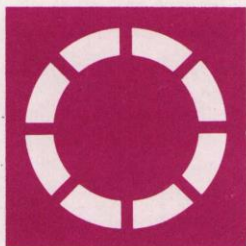


Rutherford Laboratory Bulletin

Supplement to Bulletin No. 40/66

Owing to the late arrival of Dr. A. G. Sitenko in this country, the lectures advertised in Bulletin No. 40/66 on Wednesday 12 October, at Banbury Road, Oxford and Thursday 13 October at the Clarendon Laboratory, Oxford have been cancelled. These lectures may be given at a later date and details will be given in the Bulletin when available.

Arrangements for the lectures at the Culham Laboratory and at the Rutherford Laboratory remain as advertised.



Rutherford Laboratory Bulletin

41/66
17 Oct 66

General News

LOST PROPERTY. Will the person who borrowed a personal copy of "Textbook of Physics" by W. White, please return it to P.D. Hey, Room 4-08, Bldg R.2.

MISSING EQUIPMENT The following items of equipment have been reported missing:

Camera, Leica 35 mm. Ser. No. 223759
Camera Lens 5cm, f2. Ser. No. 248101
Microscope, Beck, Type A48, Ser. No. 19711
Stop Watch, Ser. No. 55/0023
Exposure Meter, Ser. No. R.6221
Pen Recorder, Ser. No. 72367
Decade Resistance Box, Ser. No. 10288/31

Anyone with information on the present whereabouts of any of the above items is asked to contact F. Harden, Bldg R.1, Ext 6114.

Machine Schedules

P.L.A.

Date	Team	Experiment
15-23 Oct	KCL and RHEL	Elastic and Inelastic Proton Scattering from Zinc Isotopes

NIMROD. Period 2/66 - Cycle 7. (18.10.66. - 1.11.66.)

1. Machine Physics
2. High Energy Physics

Team	Beam	Experiment	
RHEL/Oxford U.	K7	K ⁺ p polarisation measurements	Setting up and Data
Imperial Coll/RHEL	Ø1	A study of the decay $\phi \rightarrow e^+e^-$	Data
AERE/QMC	π^+	A study of Σ/Λ decay	Setting up

Internal Events

There will be no lecture in the Nimrod Series on Mon, 17 Oct.

Mon, 17 Oct., 2.30 p.m. Lecture Theatre	Special Lecture	Dr. A.G. Sitenko (U.S.S.R.)	Inelastic Scattering of Fast Particles by Nuclei and Two-Nucleon Correlations in Nuclei.
Wed, 19 Oct., 11 a.m. Conf. Rm, R.1	High Energy Phys Discussion Group.	Dr. G. Shaw	Low Energy Photoproduction

External Events

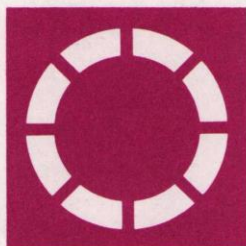
Mon., 17 Oct., 5 p.m. Univ. of Reading.	Phys. Dept. Colloq.	Prof. J.M. Ziman (Univ. of Bristol)	The Primrose Path of Diffraction in the Theory of Metals
Tues, 18 Oct, 2.30 p.m. 21 Banbury Rd, Oxford.	Nuclear Phys. Seminar	Dr. M. Macfarlane (Argonne)	The Shell Model
Wed, 19 Oct., 2.15 p.m. Univ. of Southampton	Surface Phys. Group	Mr. L.G. Carpenter (RAE Farnborough)	Exchange of Energy and Momentum between Gases and Solids.
Thurs, 20 Oct., 4.15 p.m. Clarendon Lab, Oxford	Theor. Phys. Seminar	Dr. A.J. Leggett	Fermi Liquid Effects in the Superfluid Phase
Thurs, 20 Oct., 4.15 p.m. Birmingham Univ.	Mathl. Pays. Seminar	Dr. G.V. Dass (Delhi)	Some Applications of Separable Potentials in High Energy Physics
EVENTS AT A.E.R.E.			
Tues, 18 Oct., 2 p.m. Conf. Rm, Bldg 8.9	Theor. Phys. Div. Seminar	Dr. R.J. Eden (Cambridge)	High Energy Collisions of Elementary Particles
Thurs, 20 Oct., 2 p.m. Conf. Rm, Bldg 8.9	Joint Applied Maths Gp Seminar	Mr. C.W. Clenshaw (N.P.L.)	The Solution of the van der Pol Equation in Chebyshev Series

Social News

CIVIL SERVICE INSURANCE SOCIETY. The Honorary Representative at the Laboratory is Mr. T.W. Harper, Room 2.12, Bldg R.25, Ext 6116, from whom interested persons can obtain literature.

CHRISTIAN FELLOWSHIP. Thurs, 20 Oct, at 12.30 p.m., P.L.A. Conf. Rm, R.12, Bible Study - St. Johns' Gospel, Ch. 14, led by Ray Powell, Accounts Section. All are welcome.

Date for your Diary: 19-29 Oct. Motor Show at Earls Court.



Rutherford Laboratory Bulletin

No. 42/66
24 Oct. 66

General News

Professorships Dr. W.D. Allen has been appointed Visiting Professor at the University of Reading in a part-time capacity from the beginning of the session 1966/67.

Dr. Allen will continue in his present post as Head of the P.L.A. Division, but will devote an increasing fraction of his time to research and lecturing at the University. In the 1967/68 session he will divide his time equally between the two institutions.

Dr. W. Galbraith of A.E.R.E. has recently taken up a post as Professor of Physics at the University of Sheffield. Dr. Galbraith has been a good friend of the Rutherford Laboratory, having worked here since the early days. We feel sure that many members of the staff would like to join us in wishing him every success in his new post.

CONFERENCE The 1967 National Particle Accelerator Conference on Accelerator Engineering and Technology will be held in Washington, D.C. from 1-3 March, 1967. Abstract deadline is 15 November, 1966. Further details of tentative programme etc., from H.F. Norris, Bldg R.20 Ext 484.

Machine Schedules

NIMROD Period 2/66 - Cycle 7 (18.10.66-1.11.66.)

Machine Physics; High Energy Physics; (K7, θ_1 and π^4)

Full details of Cycle 7 were given in Bulletin No. 41/66

P.L.A.

Date	Team	Experiment
24-27 Oct		Maintenance
28-30 Oct	Birmingham U.	Polarisation in Elastic & Inelastic Proton Scattering

Internal Events

There will be no lecture in the Nimrod Series on Monday, 24 Oct.

Wed, 26 Oct, 11 a.m. Conf. Rm. R.1	High Energy Physics Discussion Group	Dr. A.W. Hendry	Mass Formulae in the Quark Model
Mon, 31 Oct, 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. D.V. Bugg	K^-p Total Cross-sections

External Events

Mon, 24 Oct, 4.15 p.m. Queen Mary College	Theor. Phys. Seminar	Dr. R.F. Streater (Imp. Coll.)	Canonical Quantisation
Wed, 26 Oct, 7.30 p.m. Reading Coll. of Tech.	IERE District Meeting	K.G. Nichols	Reliability of Electronic Components and Microelectronic Circuits
Thurs, 27 Oct, 4.15 p.m. Clarendon Lab, Oxford.	Theor. Phys. Seminar	Dr. M.H. Macfarlane	Quasi-Particles in the Nuclear Shell Model
Thurs, 27 Oct, 4.15 p.m. Univ. of Birmingham	Mathl. Phys. Seminar	Dr. R.J. Eden (Cambridge)	High Energy Behaviour of Particle- Particle and Particle-Anti-Particle Cross-Sections

Exhibition: 25-28 Oct., 10 a.m.-5 p.m. Electronic Production and Packaging Exhibition, at the United States Trade Center, London. Further details from H.F. Norris, Bldg R.20, Ext 484.

Events at A.E.R.E.

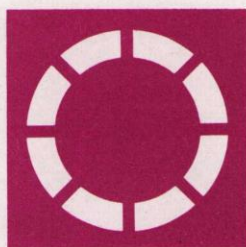
Tues, 25 Oct., 2 p.m. Conf. Rm, Bldg 8.9	Theor. Phys. Div. Seminar	Dr. P.N. Butcher (R.R.E. Malvern)	The Gunn Effect
Thurs, 27 Oct, 2 p.m. Conf. Rm, Bldg 8.9	Joint Applied Maths Group Seminar	Mr. M.J.D. Powell	Using Cubic Splines to Approximate Functions of One Variable.
Thurs, 27 Oct, 3.30 p.m. Conf. Rm, H.8.	Nuclear Phys. Div. Colloq.	Dr. P. Burke	Multi-channel Resonances and Electron- atom Inelastic Scattering.
Fri, 28 Oct, 10.30 p.m. Conf. Rm, H.8.	Nuclear Phys. Div. Colloq.	Dr. A.M. Friedman (Argonne National Lab.)	Production of the Next Closed Shell Nucleus with very Heavy Ions.

Social News

FIREWORK DISPLAY The A.E.R.E. Recreational Association are holding their annual firework display on the South Games Field, AERE at 7 p.m. on Saturday November, 5th. Hot dogs and coffee will be on sale during the display. This will be followed by a Guy Fawkes Dance in the Social Club 8.30 p.m. until midnight.

CHRISTIAN FELLOWSHIP. Thurs, 27 Oct, at 12.30 p.m. P.L.A. Conf. Rm, R.12. - Continuation of Bible Study on St. John's Gospel, Ch. 14, led by Ray Powell, Accounts Section. All are welcome.

RECORD SOCIETY. The winter's programme will commence on Tuesday, 25 Oct, at 12.30 p.m. Lecture Theatre. Details of the first programme will be given on posters (and in the Restaurant Lounge on Tuesday).



Rutherford Laboratory Bulletin

No. 43/66
31 Oct 66

General News

VISITOR. Dr. J.S. Bell, CERN will be visiting the Laboratory on Tuesday, 1 November. It is hoped that he will be able to give an informal lecture in the morning. If so, details will be announced when available.

RADIATION PROTECTION NOTICE. Films to be changed, Monday, 31 October.

$\beta\gamma$ and fast neutron films, Colour Strip-Green, Period - 12

Please ensure that you are wearing the current film and that all previously issued films are returned to Miss J. Towers, Bldg R.20.

OVERSEAS VISITS. The Director, to CERN, 1-2 November, to attend meeting of European Advisory Committee. Mr. B.E. Fish, to CERN 1-9 November, for discussions on safety in the use of flammable gases and liquids.

Machine Schedules

NIMROD Period 2/66 - Cycle 8 (1.11.66. - 22.11.66.)

1. Machine Physics;
2. High Energy Physics

Team	Beam	Experiment	
Imperial Coll/RHEL	ϕ^1	A study of the $\phi \rightarrow e^+ + e^-$ decay	Data <i>checking</i>
RHEL/Oxford U.	K7	K ⁺ p polarization measurements	Data
Hydrogen Bubble Chamber Collaboration	K1	π^- -p interactions <i>K⁺</i>	Data
AERE/QMC	π^4	A study of Σ/β decay	Setting up
P.L.A.			
Date	Team	Experiment	
31 Oct-2 Nov.	RHEL/QMC1.	(p-He ⁴) Polarization Measurements	
3 Nov	RHEL	Polarimeter Calibration	
4-7 Nov	Birmingham U.	Polarization in Elastic and Inelastic Proton Scattering	

Internal Events

Mon, 31 Oct., 11.15 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. D.V. Bugg	K ⁺ p Total Cross-sections
Mon, 31 Oct., 2.15 p.m. Lecture Theatre	Nimrod Proposal Lectures	Dr. W.M. Gibson (Bristol Univ.)	Three proposals to Measure: (a) K ⁺ p Differential Cross-sections over the Range 1-1.5 GeV/c (b) π^+ p Differential Cross-sections up to 4.5 GeV/c (c) Real Part of the Forward π p Scattering Amplitude
Wed, 2 Nov., 2 p.m. Conf. Rm, R.12.	P.L.A. Div. Talks	Prof. W.D. Allen, Mr. A. Carne, Mr. J.M. Dickson	Report on the Los Alamos Linac Conference

External Events

Mon, 31 Oct., 4.15 p.m. Queen Mary College	Theor. Phys. Seminar	Dr. A.J. Leggett (Oxford)	Theory of a Superfluid Fermi Liquid
Mon, 31 Oct., 5 p.m. Univ. of Reading	Phys Dept. Colloq	Prof. R.J. Blin-Stoyle (Sussex)	Leptons
Thurs, 3 Nov, 4.15 p.m. Birmingham Univ.		Dr. P. Herczeg (Sussex)	The Weak Nucleon-Nucleon Interaction
Tues, 1 Nov., 8 p.m. Univ. Eng. Labs. Oxford.	I. Mech. E. Meeting	Mr. R.D. Hunt (Members and visitors welcome)	Hovercraft Development
EVENTS AT A.E.R.E.			
Mon, 31 Oct., 2 p.m. Conf. Rm. Bldg 8.9.	Theor. Phys. Div. Seminar	Dr. J.S. Bell (CERN)	Is there an Einstein - Podolsky - Rosen Paradox?
Tues, 1 Nov., 2 p.m. Conf. Rm, Bldg 8.9	Theor. Phys. Div. Seminar	Prof. L.R.B. Elton (Univ. of Surrey)	Single Particle Potentials and Wave Functions in the 1p and 2s-1p Shells.
Thurs, 3 Nov., 2 p.m. Conf. Rm, Bldg 8.9.	Joint Applied Maths Group Seminar	Mr. E.M.L. Beale (CEIR, Ltd.,)	Extensions of Linear Programming to Solve Non Linear Problems
Thurs, 3 Nov, 3.30 p.m. Conf. Rm, H.8	Nuclear Phys. Div. Colloq.	Dr. R. Wilson (Culham)	Europe's Major Space Experiment - an Astrophysical Space Observatory.

Social News

RECORD SOCIETY 12.30 p.m. Tuesday, 1 Nov, Lecture Theatre. Details of this programme will be given on posters (and in the Restaurant Lounge on Tuesday). It is hoped to give details of future programmes in the Bulletin weekly.

MEMBERSHIP OF VOLUNTARY CIVIL SERVICE ASSOCIATIONS. Science Research Council Circular, 46/66, states that all SRC staff are eligible for membership of the Civil Service Club and the Civil Service Motoring Association. The circular gives details of the facilities available to members.

CHRISTIAN FELLOWSHIP. A meeting of Prayer, Intercession and Meditation will be held in P.L.A. Conference Room R.12, on Thursday, 3 November, at 12.30 p.m. All are welcome.

Rutherford Laboratory
28.10.66.

Thurs 2nd Feb

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