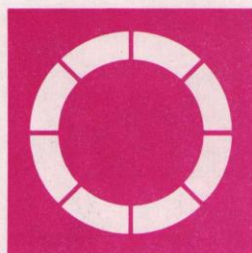


No 9/71  
1 Mar 71



# Rutherford Laboratory Bulletin

## General News

**VISITOR** - Dr A Chilver, MA, DSc, Vice Chancellor of the Institute of Technology, Cranfield, will visit the Laboratory on Thursday, 4 March. Dr Chilver is a Member of the Science Research Council.

**LIBRARY NOTICE** - The following new journals have been received in the Library and are now on display:-

Physics Abstracts	- 21 Jan, 4 Feb
Current Papers in Physics	- 7 Jan, 21 Jan, 4 Feb
Current Papers in Electronics and Electrical Engineering	- Feb
Electronics and Power	- Feb
Electronics Letters	- 28 Jan, 11 Feb
Proc. I.E.E.	- Feb
Physics Bulletin	- Jan, Feb
Journal of Physics A - C	- Jan
Journal of Physics D - E	- Jan, Feb

**RUTHERFORD LABORATORY LECTURE - ADVANCE NOTICE** - The next in the series of Rutherford Laboratory lectures will be given by Dr P J Agius, Director of Research, Esso Research Centre, Abingdon on Thursday 11 March, at 3.15 pm in the Lecture Theatre. The title of his talk will be "The Role of Industry in Air Quality Conservation." More details in the next Bulletin.

**FILM NOTICE** - It is Period 3. Colour Strip - YELLOW for B<sub>y</sub> and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

**OVERSEAS VISITS** - Mr W Walkinshaw and Dr A Bryden, to CERN, 28 Feb - 3 March, for discussions with Dr Macleod on the organisation and staffing of Computer Division.

Mr H Hurst, to the USA, 1-15 March for discussions on the "195" at IBM Poughkeepsie NY; to visit the McDonnell Douglas Aircraft, St Louis for discussions on operation of 'large systems "85" and "195" and to attend the IBM Users Conference in Los Angeles.

Dr G Manning to CERN, 3-5 March, to attend NPRC Meeting and 'Review of Programme at CERN' Meeting.

Dr J J Thresher to CERN, 3-5 March, to attend 'Review of Programme at CERN' Meeting.

## Machine Schedules

NIMROD Cycle 2 (23.3.71 - 16.3.71)

Machine Physics; High Energy Physics (X3/ $\pi$ 8, X3/K15,  $\pi$ 10, X2/K12A, X3/ $\pi$  11 and K10s)

Full details of Cycle 2 were given in Bulletin No 2/71.

## Internal Events

Mon, 1 Mar., 11.30 am., Lecture Theatre	Nimrod Lecture Series	Prof. M Ross (Michigan and Westfield)	Understanding Two-Body Reactions.
Wed. 3 Mar., 11.0 am. Conf.Rm.R1	H E P Disc Group	Dr K Green (Oxford U.)	K <sup>+</sup> p Elastic Scattering at 180°.
Mon, 8 Mar., 11.30 am Lecture Theatre	Nimrod Lecture Series	Prof D Amati (CERN)	Building a Hadron Theory from Duality.

## External Events

Mon, 1 Mar., 5 pm Univ of Reading	Colloq	Prof I C Percival (U of Stirling)	Correspondence Identities
Tues. 2 Mar., 2.30 pm Daresbury Laboratory	Lecture Series	R Siddle (Manchester)	Electroproduction of the N*(1236)
Tues, 2 Mar., 2.30 Nucl Phys Lab Oxford	Nucl Phys Seminar	Dr C J Batty (RHEL)	Evidence for the Possible Existence of a Superheavy Element with Atomic Number 112.
Thurs, 4 Mar. 4.15 pm Univ of Manchester	Nucl & High Energy Joint Seminar	Title to be announced	
Thurs 4 Mar, 4.15 pm, Clarendon Lab, Oxford	Theor Phys Seminar	Prof R J Blin-Stoyle (Sussex)	Weak Hadronic Interactions and the Nucleus.



Thurs, 4 Mar., 8.30 pm.,  
Nucl Phys Lab Oxford

Seminar in Elemt  
Part Phys

Dr J Scheid

Polarization in High-Energy  
Forward Pion-Proton Scattering.

Fri. 5 Mar, 2.30 pm  
Clarendon Lab, Oxford

Elemt Part Theory  
Seminar

Dr P K Mitter and  
Prof Dallitz

Report on the Coral Gables  
Conference (Gell-Mann on the  
light-cone etc)

## Social News

RECORD SOCIETY 12.40 pm., Tues., 2 March, Lecture Theatre.

"Bye Bye Blues" - Bert Kaempfert and his Orchestra.

This is an excellent Stereo recording by an extremely popular orchestra playing a selection of well known tunes such as "Once in a while", "You Stepped out of a Dream" and "Out of Nowhere". The opening number, "Bye Bye Blues", is an excellent example of the superb performance which, with the very imaginative arrangement, is characteristic of the Bert Kaempfert sound. Also featured on this recording is the trumpet playing of Fred Moch.

SRC SIX-A-SIDE FOOTBALL LEAGUE CUP - After a late start the first leg of the league got under way with a match between R36 and Nimrod played on 19 February. Nimrod opened the scoring through Dave Davies and the first goal for R36 came when Howard Samuels in the Nimrod goal mishandled giving Graham Clapham his chance for R36.

Nimrod were obviously not dismayed as they won convincingly by 8 goals to 2.

On Wed 24 Feb., Hall 3 beat Transport by 5 to 1. Darril Taylor for Hall 3 scored a hat trick and an unnamed substitute who played an excellent game for the whole of the second half in stocking feet, scored the only goal for Transport.

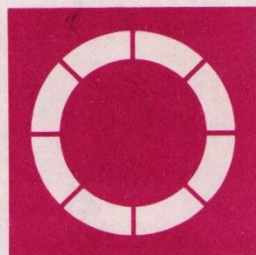
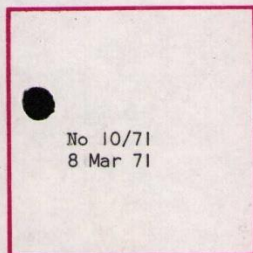
CHRISTIAN FELLOWSHIP - Friday 5 March, at 12.30 pm., Conf., Rm., R12. Prayer Meeting led by Derek Smaje. All welcome.

Rutherford Laboratory  
26-2-71

H F NORRIS Ext 484  
Scientific Admin Group  
Building R20

saw





# Rutherford Laboratory Bulletin

## General News

**ISR EXPERIMENT** - The large 250 ton magnet for the ISR experiment to search for the intermediate boson, has been successfully assembled and tested in R25. The magnet is now to be dismantled and shipped to CERN, to be installed at the ISR commencing on 8 April. The tests have been completely satisfactory and an average field of about 17 kG obtained. All concerned are to be congratulated.

**CONGRATULATIONS** - The Council of the University of Sussex has conferred upon Dr N Lipman the title of Visiting Professor.

**VISITORS** - Ten students from the University of Reading will visit the Laboratory on Tuesday 9 March. Thirty members of the staff of Edwards High Vacuum Ltd Crawley will visit the Laboratory on Saturday 13 March.

**RUTHERFORD LABORATORY LECTURE** - Dr P J Agius, Director of Research at the Esso Research Centre Abingdon will give the next lecture in this series. He has chosen for his subject, "The Role of Industry in Air Quality Conservation" and his talk will be given in the Lecture Theatre at 3.15 p.m. on Thursday 11 March.

**Air Pollution** - words which are familiar to everyone, as are many of the causes, such as exhaust products from cars and SO<sub>2</sub> emissions from large industrial plants. Dr Agius will be dealing fully with practical work which could lead to considerable improvements in these and other problems.

**LAST MAIL DELIVERED** - Mr Tom White the R2 messenger for over three years retired on Friday 25 February. Previous to joining the Laboratory, Tom had worked for British Rail for 43 years. Mr Jack Marshall, Head of the General Administration Group made the presentation of a pair of garden shears and a cheque. Tom is using the cheque to purchase suit cases which he will use in May when he starts a three months visit to the USA to see his daughter. In a letter, he expresses "thanks to all his friends and colleagues for their good wishes and for the parting gifts and cheque to himself and Wife".

**FILM NOTICE** - It is Period 3. Colour Strip - YELLOW for B<sub>y</sub> and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

**MISSING EQUIPMENT** - An optical microscope belonging to Mr David Evans, Chemistry Section, R34 was borrowed from him just before Christmas last year. Will the person who borrowed this instrument contact Mr Evans Ext 297 as soon as possible as it is wanted for immediate use.

**OVERSEAS VISITS** - Mr G N Venn and Mr E G Sandels to Holland, 8-9 March to visit Philips Gloeilampenfabrieken NV at Eindhoven for discussions on the Second Harmonic R F Cavity for Nimrod. Mr H O Normington, Mr W Russell and Mr M Randle to CERN 7-18 March for installation of P-P experiment equipment.

## Machine Schedules

NIMROD Cycle 2 (23 2 71 - 16 3 71)

Machine Physics: High Energy Physics (X3/π<sup>8</sup>, X3/K15, π10, X2/K12A, X3/π11 and K10s)

Full details of Cycle 2 were given in Bulletin No 8/71.

## Internal Events

Mon, 8 Mar., 11.30., Lecture Theatre	Nimrod Lecture Series	Prof D Amati (CERN)	Building a Hadron Theory from Duality.
Wed. 10 Mar., 11.0., Conf Room R1	HEP Disc Group	Dr R Sekulin (RHEL)	Coherent $\bar{p}d$ Interactions and "D*".
Thurs. 11 Mar., 3.15 p.m. Lecture Theatre	Rutherford Laboratory Lecture	Dr P J Agius (ESSO)	The Role of Industry in Air Quality Conservation (see Gen News for details)
Fri., 12 Mar., 11.0 a.m. Lecture Theatre	Seminar on Computing	A D Bryden	Data Analysis in Bubble Chamber Physics.

The general principles of data handling and analysis will be discussed, with examples taken from Bubble Chamber Physics. This lecture will be of interest to those counter groups whose current (or future) experiment will involve heavy data handling and reduction PLEASE NOTE CHANGE OF VENUE.

Mon., 15 Mar., 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Dr P J Duke (RHEL)	A Search for Charge Asymmetric Effects in the Decay modes $K^{\pm} \rightarrow \pi^{\pm} \pi^0$ and $K^{\pm} \rightarrow \pi^{\pm} \pi^0 \gamma$
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## External Events

Tues., 9 Mar., 2.30 p.m., Nucl Phys Lab Oxford	Nucl Phys Seminar	Dr Ian Hall (Liverpool U)	Title to be announced.
Tues., 9 Mar., 2.30 p.m. Daresbury Laboratory	Lecture Series	Prof R H Dalitz (Oxford U)	A Review of the Quark Model
Wed., 10 Mar., 2.30 p.m. Univ of Manchester	Nucl and High Energy Joint Seminar	Dr A Bodmer (Oxford)	Title to be announced
Fri., 12 Mar., 2.30 p.m. Clarendon Lab Oxford	Elemt Part Theory Seminar	Dr G Screaton	Causality
EVENT AT AERE			
Thurs., 11 Mar., 3.30 p.m. Conf Room H8	Nucl Phys Colloq	Dr R J N Phillips (RHEL)	Whats Going Wrong at High Energies?

## Social News

RECORD SOCIETY - Tuesday 9 March 12.40 p.m. Lecture Theatre.  
Brahms Symphony No 2 in D Major - Istvan Kertesz conducting the Vienna Philharmonic Orchestra.

The second and probably most popular of Brahms four symphonies played by an orchestra which has a deserved reputation for the richness of its tone and conducted by Istvan Kertesz one of Europes most gifted young musicians. This stereo recording was highly acclaimed when it was issued.

REC ASSOC DANCE Fri 12 March 8 p.m. - 1 a.m. Dancing to Billie Collins and her Band. Admission 50p including Buffett Supper. Tickets available from R Hecken, A Jones and J Rice - R2; Val Goodwin - R1; Terry Batchellier - R34; Minny Stoker - R20; Nigel Gomersall - R12; Joe Hoskins - R58; Roger Childs - Atlas Lab; Jill Flacke - R25 and Peter MacKay - R37. STOP PRESS - Very few tickets left at time of going to press.

SUNDAY FOOTBALL - Result of match played on Sunday 14 Feb. RHEL 5 - Ellistons Oxford 0. Scorers - Peter Spurr 2, Jim Long 1, George Pullinger 1 and Harry Jarvis - penalty. The game was rather one sided especially in the second half when some of the tackling became rather heavy resulting in a penalty. Match played on Sunday 21 February RHEL 7, Didcot Casuals Res 1. Unfortunately Didcot arrived with only 7 men so the referee and two supporters were persuaded to play. RHEL had most of the play as the score suggests, although John Holliday of R25 played very well at centre half for Didcot. Scorers - Jim Long 1, George Pullinger 3, Harry Jarvis 1, Arthur Bell and Bob McClure 1. Match played on Sunday 28 February, RHEL 2, Thames Valley 0. After 2 consecutive wins Rutherford were in the right mood to avenge their only defeat this season. Jim Long opened the scoring for Rutherford with a fizzing shot after receiving a cool pass from Steve Hancock. After half time T V stepped up the pace eager to equalise but the Lab defence was too good for them, particularly Bob McClure. Rutherford then struck again, John MacKerness after having an appeal for a penalty turned down, robbed a defender and lobbed the ball over the advancing goal keeper into the net.

FIXTURES - Sunday 7 March RHEL V Reeds, Thatcham.

Sunday 14 March - RHEL V Didcot Rugby Club. K O 10.30 a.m.

SRC Six-a-side FOOTBALL LEAGUE CUP Thursday 25 February D O V R18.- In this game the D O met the current League Champions. For most of the match R 18 layed siege to the D O goalmouths keeping John Rice at full stretch. The first goal came after 4 mins scored by Rick Evans for R 18 who later added another two, also notching one each Geoff Bizzell and Gavin Shand. In the second half the D O breached R 18s tight defence with a long ball down the middle to Jim Long who rattled R 18s crossbar from 20 yds out which D Ould converted to the D O's only goal. Another D O forward who caused the R 18 defence some anxious moments was Phil Lewis. Final Score D O 1 R 18 5. Friday 26 February Nimrod V R9 - Nimrod opened the scoring after only 1 min with a good shot from 25 yds by Harry Jarvis, after that the goals just seemed to come thick and fast from the Nimrod Strikers and it was difficult to keep account of the scorers but the winners were never in doubt. R 9 on the other hand squandered their chances with bad shooting and atrocious passing, R9 always had the potential but never the team work to take them through, also they badly missed their regular goalkeeper Mick Smith between the sticks. Nimrod - 7 R9 - 3.

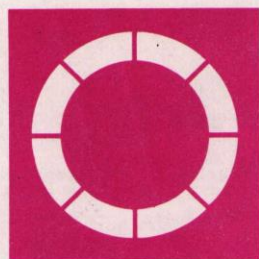
CHRISTIAN FELLOWSHIP - Friday 12 March 12.30 p.m., R12 Conference Room. Bible Study on St Pauls epistle to the Philipians, Chapter 3, led by Frank Smith. This chapter deals with Paul's desire "to know Christ and the power of His resurrection". All welcome to come along.

CSMA OXFORD GROUP - Members are reminded that subscriptions should be paid before 31 March if loss of membership and consequent re-joining is to be avoided. Completed renewal forms, with subscriptions (£1) may be handed to L N Dutton R25, who will arrange for transmission to CSMA HQ.

CSMA CLUB NIGHT - Friday 12 March at 8 p.m. in the Clubroom at "The Duke of York" Oxford. An illustrated talk "The Cultivation of Roses" given by an expert from a local firm. All welcome.



No 11/71  
15 Mar 71



# Rutherford Laboratory Bulletin

## General News

**OBITUARY NOTICE** - We deeply regret to announce the death of Mr C F W Harrison, on Monday 8 March at his home in Wantage. He was aged 65. Charles Harrison, a quantity surveyor employed by L A Francis & Son had been associated with the Laboratory from the early days and had been resident on the site since 1964.

As well as being a Justice of the Peace he was a Member of the Wantage Urban Council, The Thames Valley Water Board, the Parochial Church Council and numerous other bodies.

He will be sadly missed not only by his friends and colleagues at the Laboratory but the many members of the Laboratory he represented in his Public Service.

Our deepest sympathy is extended to his wife and family.

**VISITORS** - Forty students from Westfield College will visit the Laboratory on Wednesday 17 March.

**MISSING PUBLICATION** - A folder of notes from the Work Study School, Risley belonging to Mr Tudor Evans, Personnel Group Building R20 was borrowed from him earlier this year. Will the borrower please return the notes to Mr Evans as soon as possible as these are required for immediate use.

**FILM NOTICE** - It is Period 3. Colour Strip - YELLOW for  $\beta\gamma$  and fast neutron packs. Please check that you are wearing the correct dosimeters and all old ones are returned.  
Next film issue - Monday, 22 March

**FOUND** - A Papermate pen has been found in the 'Blue' Car Park. Enquiries should be made to Mr J Marshall, RI Ext 6603.

**EXTERNAL CONFERENCE** - Advance information has been received on a two-day International Symposium on X-Ray Topography to be held at the H H Willis Physics Laboratory, University of Bristol on Wednesday and Thursday 29 and 30 September 1971. Further details from the Editor.

**OVERSEAS VISITS** - Dr G Ringland to the USA, 13-31 March, to attend Conference on High Energy Phenomenology at Cal-Tech, and to visit L R L Berkeley, SLAC and Cal-Tech for discussions.  
Dr J M Valentine to CERN, 15-17 March for discussions. Mr D A Gray to CERN, 18-19 March to attend meeting of the 300 GeV Machine Committee.

## Machine Schedules

NIMROD Cycle 3 (16.3.71-6.4.71)  
Machine Physics  
High Energy Physics

Team	Beam	Experiment	
Westfield Coll/RHEL	X3/ $\pi^8$	Measurement of the Asymmetry of Eta Decay	Data
Bristol U/RHEL	X3/K15	$K^+p$ Differential Cross-sections from 1.07-2.0 GeV/c	Data
Surrey U/B'ham U/RHEL	$\pi^{10}$	Total Reaction Cross-sections for Pions on Nuclei	Data
B'ham U/RHEL	X2/K12A	$K^+n$ Elastic Scattering and $K^+n$ Charge Exchange from 0.45-0.95 GeV/c	Setting up
RHEL	X3/ $\pi^{11}$	Low Momentum Pion Beam Studies	Setting up
Oxford University	K10s	Study of Neutral States in $K^+p$ Reactions	Setting up
RHEL/Durham/UCL/CERN	X1/K9	Setting up of K9 for 4 GeV/c $\pi^+$ for Proposal No 91	

## Internal Events

Mon 15 Mar 11.30 am Lecture Theatre	Nimrod Lecture Series	Dr P J Duke (RHEL)	A Search for Charge Asymmetric Effects in the Decay Modes $K^{\pm} \rightarrow \pi^{\pm} \pi^0 \pi^0$ and $K^{\pm} \rightarrow \pi^{\pm} \pi^0 \gamma$
Mon 15 Mar 2.15 pm Lecture Theatre	Nimrod Users Meeting		The long term future programme of Nimrod and the deployment of available financial resources for HEP research



Wed 17 Mar 11 am Conf Rm R1	HEP Disc Grp	P Landshoff (DAMTP)	Deep Inelastic Lepton Scattering
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Thurs 18 Mar Lecture Theatre. Institute of Physics and Physical Society Meeting on Ultrasonic Bubble Chambers. The Rutherford Laboratory in conjunction with the Acoustics Group of the IPPS has arranged a one-day meeting to discuss ultrasonic bubble chambers in particular and fast cycling bubble chambers in general. The meeting commences at 10.45 am following coffee at 10.15 am and is expected to end at 16.30 pm. Further information on the programme and registration can be obtained from Dr D B Thomas, R25 Ext 6660.

Mon 22 Mar 11.30 am Lecture Theatre	Nimrod Lecture Series	Prof A Krzywicki	Large Angle Scattering of Hadrons
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## External Events

Mon 15 Mar 5 pm Univ of Reading	Colloq	Prof W R Conkie (AERE)	Functional Derivative Approach to Theory of Liquids
Mon 15 Mar 5 pm Univ of Bristol	Physics Colloq	Prof W A Tiller (Stanford Univ & Oxford)	On the Energetics, Kinetics and Topography of Crystal-Fluid Interfaces
Tues 16 Mar 7.45 pm Univ of Reading	British Computer Soc, Branch Meeting	Dr P M Woodward (RRE Malvern)	ALGOL 68
Tues 16 Mar 8.15 pm Oxford U Maths Inst	British Computer Soc, Branch Meeting	M D Tedd (Computer Technology Ltd)	The Modular One Computer
Wed 17 Mar 2.30 pm Univ of Manchester	Nucl & High Energy Joint Seminar	Dr G Barton (Sussex)	Quantum Electrodynamics of Particles between Conducting Plates

### EVENTS AT AERE

Thurs 18 Mar 3.30 pm Conf Rm H.8	Nucl Phys Colloq	Mr M B Shah (Surrey)	Small Angle Proton Scattering of Proton and Light Nuclei
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## Social News

HORTICULTURAL SOCIETY EVENING - Tickets will be available shortly for the next evening lecture at 15p each. The lecture will commence at 7.45 pm on Tuesday 23 March and will be given by Mary Spiller, NDH, of the Waterperry Horticultural School on "Herbaceous Borders". Tickets when available from the Editor.

REC ASSOC DANCE - This has been another sell out and we hope to have another successful and enjoyable evening.

SUNDAY FOOTBALL - Result RHEL 7, Reeds Thatcham 1

The expected opposition from the Reed team did not materialise and they were under continuous pressure from the Lab team throughout the game. Somehow Reeds managed to hold the score down to 1-0 at half-time but after the interval continuous Lab pressure brought a further six goals. Scorers - John Mackerness - 3, Martin Goddard - 2, Jim Lang - 1 and Steve Hancock - Penalty.

REC ASSOC MEMBERSHIP CARDS - New membership cards for 1971 have now been sent out by the Rec Assoc. If any member has failed to receive one, please ring John Rice ext 232.

DARTS LEAGUE - Team 3 (John Moir and John Turner) are still top with 11 points although Team 4 (Peter Craske and Bob Marshall) also with 11 points, have 2 matches in hand and are second on averages. In the singles event John Moir is out in front with 26 wins out of 28. Alan Slater is his nearest rival with 19 wins from 24 games.

Ron Pike and Bill Oliver are leading in the doubles event with 13 wins out of 14 games.

CHRISTIAN FELLOWSHIP - 12.30 pm Friday 19 March Conf Rm R12. All welcome to come along.

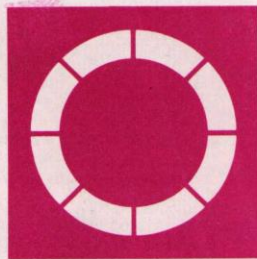
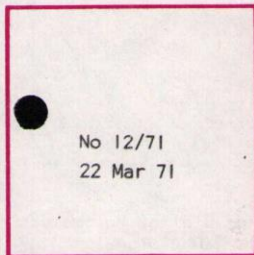
### SRC SIX-A-SIDE FOOTBALL LEAGUE CUP

R25 v R36 Thur 4 Mar - This was a game that R36 really needed to win to boost their sagging morale after the debacle against Nimrod. It was R26 who scored first through Arthur Bell who, as the game progressed, added another 2 to complete his hat-trick. R36 opened their score sheet with a shot hit hard from well out by John Slade which goalkeeper Roger Wilson, committed way off his line, could only watch helplessly as it sailed over his head into the net. Half-way through the second half Roger redeemed himself pushing an awkward high ball round the post for a corner after it dipped viciously for a seeming certain goal. R25 made it 4 through Dave Ferrie and even with a substitute R36 never looked likely to pull the game round. Graham Clapham, who always gets through a lot of work for them, was rewarded when he got their second goal and Martin Goddard made it 3. Final Score R25 - 4 R36 - 3.

ATLAS v Hall 3 Fri 5 Mar - This was a hard fought contest with no quarter given. Atlas took the lead after 9 mins with a goal from Ivor Davies, when he took advantage of a misunderstanding in the Hall 3 defence. The concession of this goal seemed to put new purpose in Hall 3's attack and with only 3 min to half-time Atlas gave away a penalty through a handling offence. Bob Blowfield took the kick, but Ray Rolf in the Atlas goal brought off a terrific save, however it was to no avail, as the referee Brian Prior deemed Ray had moved prematurely and Bob made no mistake with his second attempt.

In the second half Atlas really turned on the pressure which produced some desperate clearances by Hall 3, but the goal that was to decide the game came on a break-away and was scored by Darril Taylor for Hall 3. Verdict One of the best games yet. Final Score ATLAS - 1 Hall 3 - 2.





# Rutherford Laboratory Bulletin

## General News

**SUMMER INSTITUTE - HAMBURG** The programme of the International Summer Institute in Theoretical Physics about Photon-Hadron Interactions to be held at Hamburg from 12-24 July 1971 has been received.

**SUMMER INSTITUTE - CARGESE** Details of the annual summer school of International Physics to be held at Cargese between 27 June and 24 July have been received. This year the session will be devoted to - "Physics of the early universe and Cosmology."

**SYMPOSIUM AT CULHAM** A two-day symposium on Software Engineering will be held at Culham on 6-7 April 1971. This is an informal meeting aimed at all actively interested in the field, but particularly those engaged in production of large pieces of software such as compilers, general or dedicated operating systems or large applications packages. Advanced registration is necessary and will be accepted by 'phone or Telex up to Monday 22 March.

**CONSERVATION - THE CHALLENGE OF R AND D** The Research and Development Society is holding its fifth Symposium at Imperial College London on Thursday 15 April 1971. The objective of the Symposium is to define the responsibility of R and D for conservation, and to explore the means by which the challenge can be met. Conservation is used here in its broadest sense covering the efficient utilisation of resources and the avoidance of both waste and pollution. Final enrolment date - 8 April.

**IEE CONFERENCE - ELECTRICAL HEATING IN BUILDINGS** The conference will be held at the IEE, Savoy Place London from 1-2 April 1971 and is organised by the Power Division of the IEE in association with the Institute of Heating and Ventilating Engineers. Information on all the above from the Editor.

**FILM NOTICE** Period 4 commences Monday 22 March. Colour Strip - BROWN for 8y and fast neutron packs. Please change your film promptly and return all old ones. Six monthly TLD change for people with surnames commencing M, N, O, P.

**MISSING EQUIPMENT** The following item of equipment has been reported missing from Lab 7 RI -

Dymo Embossing Tool, labelled Counter Group 'B'

Anyone with information on the present whereabouts of this item should contact Mr B Payne Extension 301.

Hotpoint Gala Convector Heater 2Kw, RL No 14/4395 is missing and Heater, RL No 14/0425 has appeared in its place. Will anyone with knowledge of these heaters please contact Miss M J Eggleton Extension 400.

**FOUND** A fountain pen has been found on the path between Building R25 and the Mound. Enquiries should be made to Mr D Williams, Personnel, Extension 495.

**MORE MISSING EQUIPMENT** The following item of equipment was borrowed from Lab 5 RI some time during the past year -

Marconi ?? Frequency Counter Type No TF 2401, Ser No 52395/16

Will the present holder contact R T Elliott, RI Extension 425 as soon as possible.

**XEROX ROOM - RI** Will the person who has removed the long tweezers from this room kindly return them immediately.

**OVERSEAS VISITS** Mr J Burren to CERN and Menton 21-26 March for discussions with Dr G Moorhead and to attend the SEAS Conference. Dr G Manning to the USA 22 March - 8 April to visit various Laboratories to lecture and hold discussions and to attend the Conference on High Energy Phenomenology at Cal-Tech.

## Machine Schedules

**NIMROD Cycle 3 (16.3.71 - 6.4.71)**

Machine Physics; High Energy Physics (X3/ $\pi$ 8, X3/K15,  $\pi$ 10, X2/K12A, X3/ $\pi$ 11, K10s and X1/K9)

Full details of Cycle 3 were given in Bulletin No 11/71.

## Internal Events

Mon 22 Mar  
11.30 am  
Lecture Theatre

Nimrod  
Lecture  
Series

Prof A Krzywicki

Large Angle Scattering of Hadrons



Wed 24 Mar 11 am Conf Rm R1	HEP Disc Group	D Lyth (Lancaster)	The Process $\gamma\gamma\pi\pi$
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Wed 24 Mar 10.00 am - 4.00 pm Conf Rm R12, Demonstration by Racal Instruments Ltd of their range of Digital Voltmeters Types 9071/9072, 9073/9074 and 9075/9076, 50 MHz Universal Counter Timer, Digital Frequency Meter, 2 MHz Signal Generator-Synthesizer and other items in their range. Also demonstrated are two items only released last week - Model 303 LF Waveform Generator-Synthesizer and a 60 MHz Signal Generator-Synthesizer. Further technical information from the Editor.

Thurs 25 Mar 2 pm Conf Rm R1	Special Lecture	Dr R Odorico (CERN)	Experimental Low-Energy Behaviour of Dips and Veneziano Formulae
Fri 26 Mar 11 am Conf Rm R1	Seminar in Computing	Mr H Hurst	Title to be announced
Mon 29 Mar 11.30 am Lecture Theatre	Nimrod Lecture Series	Dr O Guisan (CERN)	New and Preliminary Results about Pion Charge Exchange Polarisation

## External Events

Tues 23 Mar 3 pm Univ of Bristol	Special Colloq	Dr M Maurette (Inst de Physique Nuclear, Orsay)	Application of High Voltage Electron Microscopy to Cosmic Physics
EVENT OF AERE			
Thurs 25 Mar 3.30 pm Conf Rm H8	Nuclear Phys Colloq	Dr C Whitehead	Is Ball Lightning Caused by Antimatter?

## Social News

HORTICULTURAL SOCIETY EVENING Tuesday 23 March 7.30 pm for 7.45 pm. We are fortunate in having Mary Spiller NDH of the Waterperry Horticultural School to talk on Herbaceous Borders. Miss Spiller will deal with borders and plants in the first half and after the break for refreshments will deal with propagation of plants. The evening will finish with a question time. Tickets are now available from the Editor at 15p each which includes refreshments.

REC ASSOC DANCE Another successful evening, all tickets sold and everybody having a good time. Billie Collins and her band were very versatile with Billie herself really keeping things moving. The Committee would like to apologise to those people who went without supper due to the bad manners of some persons taking more than their fair share. The Committee suggest that the absence of these people at the next dance would be appreciated; however to end on a happier note, many thanks are expressed to the people who helped to organise the dance and sell the tickets.

SUNDAY FOOTBALL - Result RHEL - 4 Didcot Rugby Club - 1 Another win for the club, as expected, against Didcot Rugby Club who played football much better than we expected. The score remained at 1 - 1 for much of the game until gaps began to appear in the Didcot defence. The Lab team quickly took advantage of these and ran out good winners. Scorers Martin Goddard - 2, John Mackerness - 1, and Jim Long - 1.  
Fixtures - Sunday 21 March Didcot RAOCSunday 28 March The Sprat, Didcot

SRC SIX-A-SIDE FOOTBALL LEAGUE CUP  
R18 v R25 Thurs 11 March 71 - What a cracking match this was! The pace never slackened from the time of the first whistle. The game was hardly under way when Jim Taylor rounded the goalkeeper to put R18 one up. 8 minutes later Gavin Shand made it 2. Geoff Bizzel made it 3 for R18 and finally Gavin Shand got his second to put them 4 up. The men of the match for me were R25's John Holiday, a lone stalwart in defence who never put a foot wrong, and goalkeeper Roger Wilson who made some spectacular saves. For R18 that formidable trio Gavin Shand, Jim Taylor and Geoff Bizzel will take some stopping and will be a problem for any defence. FINAL SCORE R18 - 4 R25 - 0

Trans v DO 12 Mar 71 - This was a match that promised much but turned out to be almost no-contest with the DO the only team to show any intent and scoring the only goal of a very dreary game. Nobody really shone in the Trans side except the goalkeeper Roy Cotton. One wonders if the 2 photographers from Quest taking "action" shots exposed any film. Final Result Trans - 0 DO - 1

RECORD SOCIETY 12.40 pm Tuesday 23 March Lecture Theatre

A Tchaikovsky programme with excerpts from Swan Lake and the Nutcracker Suite

CHRISTIAN FELLOWSHIP 12.30 pm Fri 26 March Conf Rm R12 Everyone welcome to a meeting led by the Rev G Grees, Curate of Harwell Parish Church.

MUSICAL SOCIETY ST MATTHEW PASSION - J S BACH given by the Abingdon School Choral Society with Our Lady Convent Senior School, School of St Helen and St Katherine, and the Abingdon and District Musical Society, St Helen's Church, Sunday 21 March at 8.00 pm.

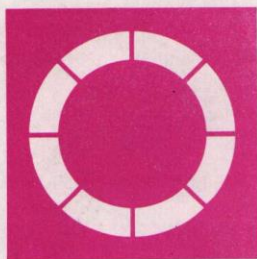
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No 13/71  
29 Mar 71



# Rutherford Laboratory Bulletin

## General News

**SUMMER SCHOOL IN PLASMA PHYSICS** Culham Laboratory is again running a Summer School, 5 - 16 July 1971, as an introductory course aimed at encouraging interest in plasma physics. The course will be suitable for final-year under-graduates and post-graduate research workers. Further details and application forms from the Editor.

**360/75 CENTRAL COMPUTER SHUTDOWN** As part of the 360/195 installation programme the 360/75 Central Computer will be closed from 2.00 pm on Thursday 8 April until 11.30 pm on Monday 12 April.

**BULLETIN NOTICE** The next issue of the Bulletin No 14/71, will cover two weeks. Items for inclusion should be sent to the Editor, Room 42, R20 Extension 484 not later than noon on Wednesday 31 March.

**FILM NOTICE** It is Period 4 Colour Strip - BROWN for 8y films and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

**IAEA & UNESCO SEMINAR** A seminar course on computing as a language of physics will be held at the International Centre for Theoretical Physics, Trieste Italy from 2 - 20 August 1971.

**OVERSEAS VISITS** Dr L C W Hobbs to Italy, 28 - 30 March, for discussions with the Director General of Euratom Laboratories. Dr R J N Phillips will be absent for two months during the period April - May to take up a visiting Professorship at the University of California USA.

## Machine Schedules

NIMROD Cycle 3 (16 3 71 - 6 4 71)

Machine Physics; High Energy Physics (X3/ $\pi$ 8, X3/K15,  $\pi$ 10, X2/K12A, X3/ $\pi$ 11, K10s and X1/K9)

Full details of Cycle 3 were given in Bulletin No 11/71.

## Internal Events

Fri 26 Mar 11 am Conf Rm R1	Seminar in Computing	Mr H Hurst	SHARE - The IBM Computer Users Association
Mon 29 Mar 11.30 am Lecture Theatre	Nimrod Lecture Series	Dr O Guisan (CERN)	New and Preliminary Results about Pion Charge Exchange Polarisation
Wed 31 Mar 11 am Conf Rm R1	HEP Disc Group	G Ross (RHEL)	Data Representation and Modified Dispersion Relations

The next lecture in the Nimrod Series will be on 19 April.

## External Events

Mon 29 Mar 3 pm Univ of Bristol	Special Colloq	Dr M Maurette (Inst de Physique Nucl; Orsay)	Application of High Voltage Electron Microscopy to Cosmic Physics (rearranged date)
Tues 30 Mar 2.30 pm Daresbury Laboratory	Lecture Series	A J Egginton (DNPL)	The Chicago Accelerator Conference
EVENT AT AERE			
Thurs 1 Apr 3.30 pm Conf Rm H8	Nucl Phys Colloq	Dr A Engel (Imp Coll)	The U.K.5 X-Ray Satellite



## Social News

CHRISTIAN FELLOWSHIP All welcome to a Prayer Meeting in the R12 Conference Room at 12.30 pm on Friday 2 April.

RECORD SOCIETY Tuesday 30 March at 12.30 pm, Lecture Theatre

### Organ Showcase No 2

A selection of organ music on tape put together, as in his previous presentation, by John Hardaker. What the Showcase contains we shall discover on the day, but John assures us that there will be a wide variety of music and organs.

### SRC SIX-A-SIDE FOOTBALL LEAGUE CUP

#### Hall 3 v R18 Tuesday 23 March 71

R18 may have lost the toss but straight from the kick-off their forward trio Gavin Shand, Jim Taylor and Geoff Blizzell set the pace and between them scored 3 of the goals. The first goal Hall 3 conceded after only 5 minutes was unfortunately an own goal. It started when R18 put the ball across the Hall 3 goal from the right and in a desperate effort to clear his lines Peter Spurr sliced his kick putting the ball in the back of his own net. This unlucky incident seemed to sap Hall 3's confidence.

The man of the match for your reporter was without doubt Nigel Henderson in goal for Hall 3. He was entertaining to watch, with plenty of courage when going for the ball. R18's tally would have been much higher if it hadn't been for him.

The referee Brian Prior also comes in for praise for the way in which he controlled this game from the very start, never letting it get out of hand.

Final Score Hall 3 - 0 R18 - 4

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