

# Rutherford Laboratory Bulletin

## General News

**HIGH CURRENT AFFAIRS** - The RACOON II superconducting magnet built to provide the final acceptance test of the conductor developed for the 70 kilogauss magnet of the HIGH FIELD BUBBLE CHAMBER has recently completed the first stage of its two-stage test programme. Operating fully immersed in liquid helium, RACOON II was energised with currents up to 14,800 amps and reached a peak magnetic field of 66 kG. This is believed to be the highest current at which a superconducting coil has yet operated. (The peak current density achieved in the conductor - almost 100 A/mm<sup>2</sup> - can be compared with the 5 to 10 A/mm<sup>2</sup> at which copper conductors of typical water-cooled magnets run.)

RACOON II uses about 100 metres of stabilised superconducting strip wound into six double pancake coils each of 25 turns. The conductor consists of 361 niobium-titanium filaments each 0.3 mm in diameter. The filaments are embedded in a copper matrix of cross section 25 mm by 6 mm and twisted about the longitudinal axis of the conductor with a pitch of 50 cm. In the HFBC magnet the conductor will operate at 7,500 A. The stable performance observed at currents of over 14,800 A in the recent tests confirms that the conductor will have an entirely adequate margin of stability when operating at its design current. Twisted filament conductor is used to ensure that eddy current loops set up within the conductor of a coil which is being energised will decay fairly rapidly. Measurements of the decay of such currents in RACOON II yielded a time constant of 40 minutes. In the HFBC application similar time constants are predicted. This means that the magnetic field distortions produced by these currents (which would persist almost indefinitely if twisted filaments were not used) will indeed disappear within the first hour after each energisation of the magnet.

The second stage of the RACOON II test programme is aimed at proving that the selected superconducting strip will also carry its design current of 7,500 A in a magnetic field of 84 kG, this being the peak field of the HFBC coils. For this test RACOON II in its own cryostat will be mounted within the bore of a 50 kG water-cooled magnet at the Royal Radar Establishment, Malvern. When both coils are energised simultaneously it is expected that peak fields in excess of 84 kG will be generated.

**RUTHERFORD LABORATORY LECTURE** - On Thursday afternoon, 4 February, Dr F E Jones, D Sc FRS, who is Managing Director of Mullard Limited, and Chairman of the Working Group, which produced the "Brain Drain" report will give a talk entitled, "A Scientists View of Industry".

Not many scientists run industrial companies in this country and this contrasts with the USA where 70% of company presidents have scientific or engineering qualifications. Dr Jones will be discussing industrial activities from a number of angles, including research and development as related to production and sales, and efficiency in the use of manpower and capital.

A sound and TV relay is being set up in the Coffee Lounge R22.

**MISSING EQUIPMENT** - The following items of equipment have been reported missing.

Oscilloscope Type 585A Ser No 9021  
Oscilloscope Type OD711 Ser No 30694

Will anyone with information on the present whereabouts of these items please contact Mr D Rose, Ext 570.

**FILM NOTICE** - Period 2 commenced Monday, 25 January. Colour Strip - BLUE for B<sub>y</sub> films and fast neutron packs. Please check that you are wearing the correct dosimeters.

**OVERSEAS VISITS** - Dr C J S Damerell, to CERN, 31 Jan - 3 Feb., for discussions.

Dr G Manning, to CERN, 31 Jan - 4 Feb, to attend discussions and NRC Meeting.

Dr R J N Phillips, to CERN, 31 Jan - 12 Feb, for consultations with the Theory Division.

Dr J D Lawson, to Munich, 3 Feb, to attend meeting of CERN Working Group on Collective Ion Acceleration and to present a paper on "The Temperature Concept in Relativistic Beams".

## Machine Schedules

NIMROD Cycle 1 (2.2.71 - 23.2.71)

Machine Physics  
High Energy Physics

Team	Beam	Experiment	State
Westfield Coll./RHEL	X3/ $\pi^8$	Measurement of the Asymetry of Eta Decay	Data
Bristol Univ/RHEL	X3/K15	K <sup>+</sup> p Differential Cross-Sections from 1.07 - 2.0 GeV/c	Data
Surrey Univ/B'ham Univ RHEL	$\pi^{10}$	Total Reaction Cross-Sections for Pions on Nuclei	Setting Up
B'ham Univ/RHEL	X2/K12A	K <sup>+</sup> n Elastic Scattering and K <sup>+</sup> n Charge Exchange from 0.45 - 0.95 GeV/c	Setting Up
RHEL	P71	Apparatus Development	Setting Up
RHEL	X3/ $\pi^{11}$	Low Momentum Pion Beam Studies	Setting Up



## Internal Events

Mon., 1 Feb., 11.30 am, Lecture Theatre	Nimrod Lecture Series	Dr G C Oades (RHEL)	Why we need to understand Coulomb Corrections in order to interpret Hadronic Data
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Wed., 3 Feb., 1.15 pm Thurs 4 Feb 12.40 pm	Lecture Theatre	Film Show	"Keep on the Grass" a 30 minute colour film
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Although every effort is being made to obtain the above film, the position due to the postal strike is difficult. As before, please watch the notice board in the coffee lounge R22 for information. "Keep on the Grass", is about the care of lawns and is a "down-to-earth" film which deals with the problems involved in considerable detail. More than twenty varieties of weeds are identified in a sort of chamber of horrors area. Famous lawns are shown and to briefly summarise - view the film, follow the advice and you too can have a lovely lawn.

Thurs 4 Feb 3.15 pm Lecture Theatre	Rutherford Laboratory Lecture	Dr F E Jones (Managing Director, Mullard Ltd)	A Scientists View of Industry (see Gen News for details)
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(Closed circuit TV will be in use in the Coffee Lounge for this event)

Mon, 8 Feb., 11.30 am Lecture Theatre	Nimrod Lecture Series	Dr D H White (UCL)	Pion Charge Exchange in the Backward Direction at High Energies at BNL
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## External Events

Mon., 1 Feb., 5 pm., Univ of Bristol	Phys & Geo-Phys Colloq	Prof A Keller (Bristol)	Macroscopic Single Crystals of Amorphous Two- Phase Polymers
Tues., 2 Feb., 2.30 pm, Daresbury Laboratory	Lecture Series	M C Crowley-Milling (DNPL)	A Design of the European 300 GeV Research Facility
Tues., 2 Feb., 6.15 pm The College, Swindon	I E E Branch Meeting	H Bradshaw (H M Inspector)	Electrical Safety in Factories
Wed., 3 Feb., 2.30 pm Univ of Manchester	Nucl & High Energy Seminar	Dr R Delbourgo (Imperial Coll)	Non-Polynomial Lagrangians
Thurs, 4 Feb, 2.30 pm Nucl Phys Lab, Oxford	Nucl Phys Seminar	Prof R G Herb (Nat Electrostatics Corp)	Recent Developments in Electrostatic Generator Technology
Thurs 4 Feb, 4.15 pm Clarendon Lab, Oxford	Theor Phys Seminar	Dr A J Leggett (Sussex)	Superfluidity in Liquids and Possibly in solids
Fri., 5 Feb, 2.30 pm, Clarendon Lab., Oxford	Elementary Particle Theory Seminar	Dr Karthals Altes (Oxford)	Spontaneous Breaking of Conformal Symmetry

### EVENTS AT AERE

Tues., 2 Feb., 2 pm Building 8.9	Theor Phys Seminar	Dr J S Briggs (AERE)	Graphical Methods for Angular Momentum.
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## Social News

**SUNDAY FOOTBALL** - In the match between the Lab team and Oxford Nalgo played on 17 January tremendous enthusiasm was shown throughout the game. At half time, the Lab were leading 2-1, but after the interval a goal scoring riot occurred with Nalgo eventually leading 6-5. However the Lab team rallied and eventually ran out winners by 7-6. Both teams seemed to have enjoyed the game.

Next match on 31 January, RHEL v Thames Valley Newbury, K.O. 10.30 am, AERE 'B' pitch.

**CONTAINERS** - The Rec Assoc still has some 1 and 5 gallon plastic containers for sale at 1/- and 2/- each. Please ring John Rice or Peter Craske on Ext 232

**CHRISTIAN FELLOWSHIP** - Fri., 5 Feb., 12.30 pm., R12 Conf Rm., All welcome to join us in a prayer meeting led by D Ness Wilson.

**RECORD SOCIETY** - Tues., 2 Feb., 12.30 pm. Lecture Theatre

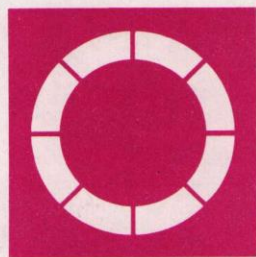
"The Sinatra Touch" including such favourites as "Come fly with me," Try a little tenderness, Learning the Blues and that great Johnny Mercer number - One for my baby.

Rutherford Laboratory  
29-1-71

H F NORRIS Ext 484  
Scientific Administration Group  
Building R20



No 6/71  
8 Feb 71



# Rutherford Laboratory Bulletin

## General News

CONGRATULATIONS TO THE CERN I.S.R. TEAM - Last week the Director received the following Telex from Kjell Johnsen, the I.S.R. Project Director:-

"Tests were begun on Ring 1 of the Intersecting Storage Rings (ISR) on January 11 and life times of several days were recorded. Trials on No 2 Ring began on Monday, January 25 and a current of over 1 Amps was stacked with a four-bunch injection from the P.S. Tests were begun on Wednesday, January 27 using beams of 15 GeV/e to study the behaviour of the system with both rings in operation. It was observed that there was no interference of one beam on the other. Detectors in the intersecting regions proved the proton-proton reactions at the equivalent energy of 500 GeV/c under controlled conditions were being recorded for the first time ever. Under the best conditions the current in Ring 1 was over 2A while the current in Ring 2 was over 1A. The ratio of the count rate to background was in excess of 10 but then at a somewhat lower current. It is concluded that the ISR will provide an effective facility for research at the highest centre of mass energies available anywhere in the world."

Readers who are not familiar with the ISR Project will find a brief summary of the main features on page 344 of the November 1970 issue of the CERN Courier which is available in the Library.

VISITORS - Thirty undergraduates from the Nuclear Physics Laboratory, Oxford will visit the Rutherford Laboratory on Saturday 13 February.

LIBRARY NOTICE - Staff are reminded that the Library would appreciate receiving two copies of all publications, ie memoranda, conference papers, preprints etc.

MISSING EQUIPMENT - The following item of equipment has been reported missing from the Mess Room, Building R55:-

Tropicana Fan Heater Serial No t4/3893

Anyone with information on the present whereabouts of this heater is asked to contact Mr R Hecken, Admin Office R2, Ext 6615.

FILM NOTICE - It is Period 2. Colour Strip - BLUE for 8y and fast neutron packs. Please make sure you are wearing the correct dosimeters.

OVERSEAS VISITS - Mr D Bell, to the Goddard Space Flight Centre, USA, 6-12 Feb, for technical liaison.

Messrs H O Normington, M Randle, L Phillips, W Pendry and E W G Wallis to CERN, 7-16 Feb, for installation work on  $\bar{P}$ -P experiment.

## Machine Schedules

NIMROD Cycle 1 (2.2.71 - 23.2.71)

Machine Physics: High Energy Physics (X3/ $\pi$ 8, X3/K15,  $\pi$ 10, X2/K12A, P.71 and X3/ $\pi$ 11)

Full details of Cycle 1 were given in Bulletin No 5/71

## Internal Events

Mon, 8 Feb, 11.30 am, Lecture Theatre	Nimrod Lecture Series	Dr D H White (UCL)	Pion Charge Exchange in the Backward Direction at High Energies at BNL
Wed, 10 Feb, 11 am, Conf Rm R1	HEP Disc Group	Dr F Halzen (CERN)	Understanding Backward $\pi$ N Scattering
Regret, no film show this week. If a film does arrive a notice will be put on the blackboard in the Coffee Lounge			
Thurs, 11 Feb, 2 pm, Conf Rm R12	Special Lecture	Dr S M Roy (CERN)	Pomeronchuk Theorem Violation and Near Forward Zeros of the Differential Cross- Sections
Fri, 12 Feb, 11 am Lecture Theatre	Seminar in Computing	Dr R Taylor	General Information on RHEL's 360/195
A general description will be given of the 360/195 which will be installed in the Laboratory in late 1971. This Seminar is of interest to all computer users.			
Mon, 15 Feb, 11.30 am, Lecture Theatre	Nimrod Lecture Series	Dr F Wagner (Munich)	Phase Shift Analysis on $\pi^+p \rightarrow K^0$



## External Events

Mon, 8 Feb, 5 pm, Univ of Reading	Colloq	Dr V Heine (Cavendish Lab)	Some Aspects of Bonding in Metals
Mon, 8 Feb, 5 pm, Univ of Bristol	Phys and Geo-Phys Colloq	Dr J Kirton (RRE Malvern)	Amorphous Switches in Large-area Displays; their Relevance and Present Limitations
Tues, 9 Feb, 2.30 pm, Nucl Phys Lab, Oxford	Nucl Phys Seminar	Dr R MacHaelen (Hahn-Meitner Inst Berlin)	Hyperfine Interaction Studies at the Hahn-Meitner Institute
Tues, 9 Feb, 2.30 pm, Daresbury Laboratory	Lecture Series	D Bugg (QMC)	$\pi$ p Scattering up to 300 MeV
Wed, 10 Feb, 2.30 pm, Univ of Manchester	Nucl and High Energy Seminar	Dr P Ellis (Oxford)	RPA Ground-State Correlations from Perturbation Theory
Wed, 10 Feb, 7 pm, Culham Laboratory	I.E.E. District Meeting	Dr M Barak	Modern Battery and Fuel Cells
Thurs, 11 Feb, 8.30 pm, Nucl Phys Lab Oxford	Seminar in Elementary Particle Physics	Dr L Voyvodic (CERN)	Some Bubble Chamber Physics Prospects at Energies above 30 GeV
Fri, 12 Feb, 2.30 pm, Clarendon Lab, Oxford	Elementary Particle Theory Seminar	Dr N White (DNPL)	Comments on Meson-Baryon Scattering, Duality and SU(3)
EVENTS AT AERE			
Tues, 9 Feb, 2 pm, Lecture Room Bldg 8.9	Theor Phys Seminar	Dr P J Ellis (Oxford)	RPA Ground-State Correlations from Perturbation Theory

## Social News

CHESS TOURNAMENT 1970/71 - Seven rounds completed and the top of the table position, shows that a very interesting situation has developed:-

Alan Gilby	6½ points	Martin Evans	)
Bill Turner	) 6 points	Peter Hemmings	) 5 points
Noel Stewart	)	Peter Craske	)

Alan Gilby, Bill Turner and Noel Stewart are still unbeaten, however, the big game to come in the next round is between Alan Gilby and Noel Stewart. If Alan wins he is going to be in a very strong position; a drawn match or a win by Noel and the situation is wide open. The question then is would Bill Turner come with a late run?

BOUNDERS AND ROUNDERS - Boys and Girls - Players and Spectators welcomed at 12.30 pm on Tuesdays and Thursdays, R20 Car Park. Anyone interested should contact Marie Smith on Extension 380.

HORTICULTURAL SOCIETY - EVENING LECTURE The first lecture in the 1971 Season is on "The History of Garden Design". The talk will be given by Alan Patterson of Culham College and commences at 7.45 pm in the Lecture Theatre. Here is the chance to collect a lot of new ideas on how to redesign your own garden. There will be an interval for refreshments, and tickets at 3/- each are now available from H F Norris, R20 Ext 484.

CHRISTIAN FELLOWSHIP - The AGM of the Christian Fellowship will be held in the R12 Conf. Rm at 12.30 pm on Friday 12 Feb. All those interested in the Fellowship please make every effort to attend.

RECORD SOCIETY - Tues, 9 Feb, 12.30 pm, Lecture Theatre.

Symphony No 1 in C Minor - Brahms, played by the Leipzig Gewandhaus Orchestra  
and conducted by Franz Konwitschny

Brahms was forty-three before he produced his first symphony, here recorded in Stereo. An acknowledged master in this field he did not really discover his true feeling for orchestration and the handling of theme and structure until his composition, "St Anthony Variations". The 'Variations', which presaged the first symphony stands as a curtain raiser which brought him success and revealed his total mastery over the orchestra.

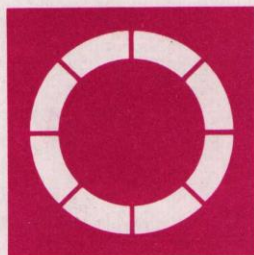
The new committee, which still welcome new lists of records, intend playing (on records!) all Brahms Symphonies in this present season. The playing equipment is now producing very nice sounds and the playing weight of 2 grams should reassure lenders of records that their precious discs will not be harmed.

Rutherford Laboratory  
5.2.71

H F NORRIS Ext 484  
Scientific Administration Group  
Building R20



No 7/71  
15 Feb 71



# Rutherford Laboratory Bulletin

## General News

### NEW ELEMENT DISCOVERED AT RHEL?

In a paper due to be published in the journal "Nature" this Friday (12 February) a joint team from the Rutherford Laboratory and the Chemistry Department of the University of Manchester present evidence for the possible discovery of a new superheavy element. The Rutherford Laboratory authors (A Marinov, C J Batty and A I Kilvington) are members of the Nuclear Physics Group of the High Energy Physics Division.

In recent years there has been a considerable amount of work aimed at producing elements with atomic number (Z) greater than 100 and the discovery of the element with  $Z = 105$  was announced during last year. It has been found increasingly difficult to produce these elements as the increase in Z has almost always been accompanied by a decrease in radioactive half life; those for elements 104 and 105 being only a few seconds. However, it has also been known for many years that certain nuclei with particular values of Z (number of protons) and N (number of neutrons), the so-called "magic numbers", are particularly stable. About 3 years ago it was suggested that  $Z = 114$ ,  $N = 184$  might be a further set of these "magic numbers" and could lead to a set of nuclei around  $Z = 114$  which might have half-lives of as long as  $10^6$  years in some cases.

It has been suggested that it may be possible to produce these nuclei by bombarding heavy target nuclei with heavy ions accelerated to high energies (of the order of 1 GeV). Several proposals have been made for new accelerators to be built with the specific object of trying to produce these super-heavy nuclei. It was suggested however, by Dr A Marinov (who is a physicist at the Rutherford Laboratory, on leave from the Hebrew University, Jerusalem) that it might also be possible to produce superheavy nuclei in targets irradiated by beams of very high energy protons. The scattering of fast protons could give high energy recoil nuclei. These might then interact with other nuclei in the target and so possibly produce super-heavy nuclei. It is some results from an experiment of this type which are reported in the latest issue of Nature.

Using tungsten targets irradiated in the 24 GeV extracted proton beam from the CERN proton-synchrotron, chemical separations have been made to try to isolate and identify the possible existence of super-heavy nuclei produced in the target. In order to carry out this work it is necessary to rely on predictions such as, for instance, that element 112 will have chemical properties similar to those of mercury.

It is from a mercury source prepared from the tungsten target that the first evidence has been obtained which may indicate the existence of a super-heavy nucleus with  $Z = 112$ . Spontaneous fission events have been observed, in itself a relatively rare mode of decay, which it is believed are unlikely to be due to any contaminant. Alpha particles, having an energy very close to theoretical predictions, have also been observed from the same source.

The team is at present trying to confirm the existence of this new element and at the same time to search for others which may have also been produced in the same tungsten target.

Copies of the preprint of the "Nature" paper (RPP/NS1, entitled "Evidence for the possible existence of a super-heavy element with atomic number 112") can be seen in the Library, R20. See also Internal Events for details of a Lecture on this work.

**FIRST FOR NIMROD POWER SUPPLIES** - The installation and commissioning of the new Drive Motor, new Alternator Stator and second solid pole Alternator Rotor were successfully completed on 5 February 1971.

The two motor-alternator-flywheel sets are operating with separate shaft systems, but the alternators, both now having solid pole rotors, are paralleled electrically. This is the first time that such machines have operated in this way on proton synchrotron pulsing duty. The load sharing proved to be excellent, and the restrictions that have applied to flat top durations since May 1969 have now been lifted.

**GWILYM GIBBON RESEARCH FELLOWSHIP 1971/72** - These fellowships are awarded by Nuffield College Oxford to both men and women to enable them to enquire into a problem of government. Applications are restricted to P S O, Principal etc and above. Further details can be obtained from Training Section, Room 77, Building R20.

**FILM NOTICE** - It is Period 2. Colour Strip - BLUE for 8y films and fast neutron packs. Please check that you are wearing the correct dosimeter and that all old ones are returned.

**VISITORS** - Thirty students from the Southall College of Technology will visit the Laboratory on Wednesday 17 February.

**A FIRST OF A DIFFERENT BREED** - Our congratulations to Ken Harris of Engineering Division whose wire haired dachshund bitch Lowinlim Heidi won a Crufts Award, the Kennel Club Challenge Certificate, for the best bitch and best of breed of nearly 50 wire haired dachshunds. Ken and his wife Anne have been breeding wire haired dachshunds for seven years.

## Machine Schedules

NIMROD Cycle 1 (2-2-71 - 23-2-71)

Machine Physics: High Energy Physics (X3/ $\pi$ 8, X3/K15,  $\pi$ 10, X2/K12A, P71 and X3/ $\pi$ 11)

Full details of Cycle 1 were given in Bulletin No 5/71

## Internal Events

Mon., 15 Feb., 11 30 am.,  
Lecture Theatre

Nimrod Lecture  
Series

Dr F Wagner (Munich)

Phase Shift Analysis  
 $\pi^- p \rightarrow K^0$

Wed., 17 Feb., 11 am.,  
Conf Rm., R1

H E P Disc Grp

Dr Robert Sakulin  
(RHEL)

Coherent  $\bar{p}d$  Interactions  
and " $D^{**}$ "



Thurs., 18 Feb., 11 am., Lecture Theatre	Special Lecture	Dr A Marinov (RHEL & Hebrew Univ., Jerusalem)	Evidence for the Possible Discovery of a Super-Heavy Element.
Fri., 19 Feb., 12.45 pm., Lecture Theatre	Talk	Dr R G Orr (AERE Health Phys & Medical Div)	The effects of Smoking on Health See Circular No 6/71 for details)
Mon 22 Feb., 11.30 am., Lecture Theatre	Nimrod Lecture Series	Dr H Satz (Helsinki)	Aspects of Diffraction Disassociation

Owing to the Postal strike the film position is difficult. Every effort will be made to obtain the film for this week and if successful details will be given on the blackboard in the Coffee Lounge R22.

## External Events

Mon 15 Feb., 5 pm., Univ of Reading	Colloq	Dr A J Leadbetter (Bristol)	Vibration Properties of Amorphous Solids
Tues., 16 Feb., 2.30 pm., Daresbury Laboratory	Lecture Series	H Brody (Univ of Pennsylvania)	Meson Production in $p + d \rightarrow He^3 + M.M.$
Tues., 16 Feb., 2.30 pm., Nucl. Phys Lab, Oxford	Nucl Phys Seminar	Dr J E Lynn (AERE)	A Survey of Fission Barrier Properties
Tues., 16 Feb., 7.45 pm., Univ of Reading	British Computer Society Branch Meeting	E Hart (CAP)	Tailored Software for a Banking Application
Thurs, 18 Feb., 4.15 pm., Univ of Manchester	Nucl & High Energy Joint Seminar	Dr J Thompson (DNPL)	Measurement of Photoproduction total Cross-Sections.
EVENT AT AERE			
Tues 16 Feb., 2 pm., Lecture Rm., Building 8.9	Theor Phys Seminar	Dr P J Ellis (Oxford)	RPA Ground-State Correlations from Perturbation Theory.

## Social News

**SUNDAY FOOTBALL** - The Lab team suffered its first defeat of the season in the match against Thames Valley, Newbury, played on Sunday 31 January. Despite the appalling weather both sides managed to play well and the Lab team was unlucky to be down 1 - 0 at half-time due to an own goal. In the second half strong pressure by the home side resulted in the equaliser, scored by Bob McClure. Continued pressure produced a number of scoring chances, all of which were missed and ten minutes from the end Thames Valley hit back and scored the winning goal. Result, RHEL 1 - Thames Valley Newby 2.

Next fixture - Sunday 14 Feb., RHEL x Ellistons, Oxford  
K.O. 10.30 am., AERE 'B' Pitch.

**AERE SIX-A-SIDE LEAGUE** - The Nimrod team, representing the Rutherford Lab., played their first match in the League and beat Hanger 9 by 5 - 1, John Mackerness scoring 4 goals and Harry Jarvis one.

**REC. ASSOCIATION DANCE** - Tickets will be available shortly for the dance on Friday 12 March. Dancing to Billie Collins and her band from 8 pm to 1 am. Ticket, 10/-, including supper.

**SRC FOOTBALL LEAGUE CUP** - Full details including fixture list and rules for this competition are now available. Enquiries to Mr G Howard Ext 6115.

**CHRISTIAN FELLOWSHIP** - 12.30 pm., Fri., 19 Feb., R12 Conf Rm., Meyrick Wyard will be leading a Bible Study on the second chapter of Philipians dealing with the humility and divinity of Jesus Christ. All welcome to come along to this meeting.

**RECORD SOCIETY** 12.30 pm., Tues., 16 Feb., Lecture Theatre.

"Bravo Brubeck" - Recorded live in Mexico whilst Dave Brubeck was on tour, this features the regular group combining with local musicians.

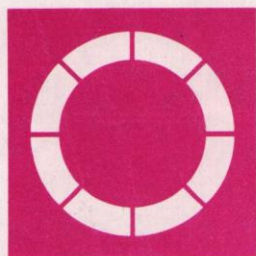
Rutherford Laboratory  
12-2-71

H F NORRIS Ext 484  
Scientific Admin Group  
Building R20

saw



No 8/71  
22 Feb 71



# Rutherford Laboratory Bulletin

## General News

**VISITORS** Thirty-two Assistant Principals, on course at the Civil Service College, will visit the Laboratory on Friday, 26 February.

**FILM NOTICE** Period 3 commences Monday, 22 February. Colour Strip - YELLOW for  $\beta\gamma$  films and fast neutron packs. Six monthly TLD change for people with surnames commencing I, J, K, L. Please change all dosimeters promptly and return all old ones.

**OVERSEAS VISITS** Mr D A Gray, to the USA, 22 Feb - 6 March, to attend the 1971 Particle Accelerator Conference, Chicago and to visit ANL, NAL and BNL.

Dr L C W Hobbs, to Grenoble France, 24-26 Feb, for discussions on HFBR.

## Machine Schedules

NIMROD Cycle 2 (23.2.71 - 16.3.71)  
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	Setting up - 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

## Internal Events

Mon 22 Feb, 11.30 am, Lecture Theatre	Nimrod Lecture Series	Dr H Satz (Helsinki)	Aspects of Diffraction Disassociation
Wed 24 Feb, 11 am, Conf Rm, RI	HEP Disc Grp	Dr A Love	Nonlinear $SU_3$ Symmetry
Fri 26 Feb, 11 am, Lecture Theatre	Seminar in Computing	R C F McLatchie (AERE)	The HUW System of AERE. A general description and demonstration of the on- line terminal system (HUW) now in operation at AERE.
Mon 1 Mar, 11.30 am, Lecture Theatre	Nimrod Lecture Series	Prof M Ross (Michigan and Westfield)	Understanding Two-Body Reactions



## External Events

Tues 23 Feb 2.30 pm Nucl Phys Lab Oxford	Nucl Phys Seminar	Dr G J Clark (AERE)	Direct Measurement of the Lifetime of a Compound Nucleus State.
Thurs 25 Feb, 4.15 pm Clarendon Lab Oxford	Theor Phys Seminar	Dr D ter Haar	Plasma Astrophysics
Thurs 25 Feb 4.15 pm Univ of Manchester	Nucl and High Energy Joint Seminar	Dr A D W Jones (Oxford)	$\beta$ -Decay in $^{25}\text{Na}$ and Analogue MI Transitions in $^{25}\text{Al}$
Thurs 25 Feb 8.15 pm Oxford Univ Maths Inst	British Computer Soc Branch Meeting	Dr P M Woodward, Mr I F Curry and Dr A J Fox (RAE Malvern)	Introducing Algol 68

### EVENTS AT AERE

Thurs 25 Feb 3.30 pm Conf Rm, H8	Nucl Phys Colloq	Drs R J Griffiths, G L Thomas & N M Clarke (Kings College)	Extensions to the Optical Model, or, Through a Glass Darkly
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## Social News

CHRISTIAN FELLOWSHIP 12.30 pm, Fri, 26 Feb, R12 Conf Rm.

Mr Harry Keble from the Datchet Fellowship at Brightwell will be speaking. All are welcome to come along and meet him.

RECORD SOCIETY 12.40 pm Tuesday 23 Feb, Lecture Theatre. Please note change of time.

Kathleen Ferrier - "She was one of the greatest singers of all times" - (Bruno Walter)

In this programme the Record Society have chosen items from three recordings which show the versatility and simplicity of approach that made her respected and loved by all who came into contact with her during a career that was all too short.

The programme opens with four folk songs - "Blow the wind Southerly"; "I have a bonnet trimmed with blue"; "My Boy Willie" and "I know where I'm going".

Two items follow from a recital of Bach and Handel arias, "Return, O God of Hosts - Samson", from the Oratorio based on Milton's poem Samson Agonistes, and "O Thou that tellest good Tidings" from the Messiah.

The programme ends with Der Abschied from Das Lied von der Erde (The Song of the Earth) by Mahler. The work was based on six songs from the Chinese and the final Abschied, a meditation on the finality of parting, paints a picture of the longing and resignation in the composers soul as he contemplates the beauty from which he knows he must part.

Rutherford Laboratory  
19-2-71

H F NORRIS Ext 484  
Scientific Admin Group  
Building R20