



bulletin 22
27 October - 10 November 1975

Wide Interest in the Royal Society Meeting for Discussion on

HIGH POWER LASERS

There is considerable excitement in the study of the interaction of laser radiation with plasma and matter. When radiation strikes matter, a region of plasma is created at the surface; the processes of energy transfer between the radiation and the plasma state are important in understanding the way in which the interaction proceeds. In

The overall impression arising from the meeting was of the timeliness and need to establish such a central facility. This would be a logical extension of current activity, enabling the UK to maintain its international standing in this rapidly developing field of research.

INTERNAL EVENTS

NIMROD LECTURE SERIES

Monday 27 October
11.30
Lecture Theatre

Dual String Dynamics and the Baryon Problem

Dr R Tucker/Lancaster University

PROPOSAL TALKS

Tuesday 28 October
10.45 and 11.45 (approx)
Lecture Theatre

Proposal No 173: "A Proposal to Measure Neutrino-Electron Scattering at FNAL"-
Chicago/Oxford. Talk to be given by *Dr N E Booth/Oxford*
Proposal No 174: "A Proposal to Measure the Life-time of the Neutron" - Sussex.
Talk to be given by *Dr J Byrne/Sussex*

HEP SEMINAR

Wednesday 29 October
11.00
R61 Conference Room

Some Study of Current Fragmentation in Deep Inelastic Scattering

Dr K Choudhury/Daresbury

SEMINAR IN COMPUTING

Friday 31 October
11.00
R61 Conference Room

3D Modelling

M J Newman/RL

A general package is in preparation to handle 3D modelling on the GEC 4080. This package will provide facilities for generating any required 3D shape by approximating it with a series of standard shapes. One use of the package will be in GFUN, the on-line magnet design program.

NIMROD LECTURE SERIES

Monday 3 November
11.30
Lecture Theatre

SPEAR Studies on ψ and ψ' Decays

F Vannucci

HEP DATA HANDLING SECTION SEMINAR

Wednesday 5 November
13.30
R61 Conference Room

The K13 C Bookkeeping System

J Hart/RL

FILM SHOW

Thursday 6 November
12.40
Lecture Theatre

Deep Sea Endeavour, a 26 mm colour film

This film looks at the problems posed by the search for oil offshore, and explains many of the techniques. Prominently featured is the drill ship SEDCO 445 with her sonar controlled dynamically positioning system.

RUTHERFORD LABORATORY LECTURES

Thursday 6 November
15.15
Lecture Theatre

How Much Energy do we Need? (see 'News' section for details)

Dr J Davoll/Director, The Conservation Society, Population Resources Environment

NIMROD LECTURE SERIES

Monday 10 November
11.30
Lecture Theatre

The CERN Experimental Programme

Professor W Jentschke/Director General, Laboratory 1, CERN

NIMROD SCHEDULE

There is no scheduled HEP during the period 28.10.75 - 17.11.75 owing to the commissioning of Hall I beam lines

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RUTHERFORD LABORATORY LECTURE

"How Much Energy Do We Need?"
This is the title chosen by
Dr J Davoll, the Director of

The Conservation Society for his talk, the next in the Rutherford Laboratory Lecture series (see Internal Events). John Davoll, having graduated from Cambridge University (also took Ph.D there, 1948, in organic chemistry) spent the years 1949-51 in the USA at the Sloan-Kettering Institute for Cancer Research, New York. He returned to work in Hounslow in the research laboratories of Parke Davis & Co, eventually as Assistant Director of Chemical Research. Dr Davoll joined the Conservation Society at its foundation in 1966, its chairman in '69 and '70, and the Director, following the closure of the Parke Davis chemical

research department at the end of 1970. He has kindly supplied the following summary of his talk:

It is often claimed that continuing increases in energy production are necessary for human progress or even survival. I shall argue that this belief is based largely on a combination of institutional inertia, defence of entrenched interests and, especially, on an assumption that ethical and social problems can be circumvented by technical means. Rather than achieving this last objective, this approach is more likely to lead to critical situations in which no satisfactory solutions are possible.

EXTERNAL EVENTS

ELEMENTARY PART. PHYS. SEMINAR/NP DEPT, OXFORD - 1430 hrs
29 Oct: Dr B Wilk/DESY-Recent Research from DORIS.

THEORETICAL HIGH ENERGY PHYS. SEMINARS/NP DEPT, OX. - 1430 hrs
31 Oct: Dr D E Derman - Theoretical Discussion of Possible Explanations of the Dimuon Events.
7 Nov: Dr Kingsley/RL - Right-handed Currents for the Weak Interaction.

THEORETICAL PHYSICS SEMINAR/CLARENDON LAB - 16.15 hrs
30 Oct: Prof C J Thompson/Melbourne - A Classical Theory of Amorphous Ferromagnets.

COLLOQUIA/CLARENDON LAB - 1615 hrs

31 Oct: Prof R.L.F. Boyd/UCL-The Study of Cosmic X-Ray Sources
7 Nov: Prof W B Fretter/Berkeley-A Review of π^-p Interactions at 205 GeV/c.

NUCLEAR PHYSICS SEMINARS/ROOM 08 AC 22, SURREY - 1400 hrs
29 Oct: F D Santos/Portugal-J-Dependence in Polarization during Transfer Reactions
5 Nov: P E Hodgson/Oxford-x-Particles on the Nuclear Surface

THEORETICAL PHYSICS SEMINARS AT QMC - 16.15 hrs
27 Oct: Prof C J Thompson/Melbourne-A Classical Theory of Amorphous Ferromagnets.
3 Nov: Dr D Barlin/Sussex-Gauge Theories of Strong Interactions.

HEP SEMINARS/4th FLOOR SEMINAR ROOM, MANCHESTER U. - 1600hrs
30 Oct: Dr F Loebinger-Recent Results from the ISR (CERN-Holland-Lancaster-Manchester Collaboration).
6 Nov: J Dias de Deus/RL-Strong Interactions, Scaling LAUS and Quark Models.

THEORETICAL PHYS. SEMINARS/NIELS BOHR COMMON ROOM, MANCHESTER UNIV. - 1630 hrs

29 Oct: Prof J P Elliott/Sussex-The Shell-Model Perturbation Approach to Nuclear Structure.
5 Nov: Prof D Bates/Belfast - Problems of Communication with Extraterrestrial Civilizations (16-5 in RL Th)

HEP SEMINARS/CAMBRIDGE UNIV. - 1500 hrs

30 Oct: Dr A C Irving/Liverpool-Axial Vector Mesons
6 Nov: Dr D Sivers/SLAC & RL - The Production of Charm in an Uncharmed World.

PHYSICS & GEOPHYSICS COLLOQUIA AT BRISTOL U. - 1700 hrs

27 Oct: Mr A Moodie/Austrian & Oxford-Scattering of High Energy Electrons (100 KeV) by Thin Crystals.
3 Nov: Dr Brian Harris/Sussex-Some Aspects of Research into Reinforced Plastics.

PHYSICS DEPT. COLLOQUIA/JJ PHYS LAB. READING U - 1700 hrs

27 Oct: Dr W Krieger/Helidelberg - Self-Induced Transparency: Solitons Rediscovered.
3 Nov: Mr J Ojeda/Castaneda, Reading-Phase Discontinuities Seen in an Ordinary Microscope Outside FOCUS.

THEORY SEMINAR/DARESBURY LABORATORY - 1400 hrs

27 Oct: D A Williams/UMIST - Interstellar Molecules.

IERE LECTURE/READING - 1900 hrs

4 Nov: Dr D W Hill/Royal Coll of Surgeons-Electrons in medicine.

NP DIV COLLOQUIUM/CONF RM HANGAR 8, AERE - 1530 hrs

30 Oct: Dr P Wright/East Anglia - Climatic Trends & Fluctuations.

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OVERSEAS VISITS Dr G E Kalmus, to CERN, 26-29 October, to attend TC Bureau, TCC

and SPSC.
Dr W Venus, to CERN, 26-29 October to attend TCC and SPSC.

Dr P J Litchfield, to CERN, 26-29 October to attend Omega White Book Meetings and discuss plans for Ψ experiment at SPS.

Mr R Sheldon, to Zurich, 2-11 November for discussions.
B Alper, to Bratislava, 2-7 November, to attend and present paper at 'Triangle Conference on High Energy Particle Interactions'.

Mr G B Stapleton and Dr G Fraser, to CERN, 2-7 November for discussions.

Dr L C W Hobbs, to the USA, 2-9 November, to visit K.M.S. Fusion Inc at Ann Arbor and for discussions with ILC and LLL, Livermore.

Dr P R Williams, to the USA, 2-9 November, to attend Topical Conference on Electron Beam Research and Technology at Albuquerque and for discussions with ICL and LLL, Livermore.

AUTHORITY CODES OF PRACTICE AECP(R)33 Colour code for signal lights, May 1960.
Withdrawn: superseded by

BS 4099.
AECP59 Unshielded glove boxes - November 1963 edition superseded by August 1975 edition
Copies available on request to Standards Section, Building 424, Harwell, Ext. 72-2125.

FILM BADGE NOTICE It is Period 11 Colour Strip - RED for $\beta\gamma$ films

and neutron packs. Please check that you are wearing the correct films and that all old ones are returned.

Next Film Issue - Monday 3 November.

EDITORIAL The Bulletin is published on Fridays, at fortnightly intervals. For some time copy for inclusion in the Bulletin has been arriving late, the published deadlines being largely ignored. In future one deadline only will operate and this will be given in each issue. The deadline will normally be 10.00 hours on the Wednesday prior to publication date. Acceptance of items after this deadline will be at the discretion of the Editor although normally late items will be held over for the next issue, if still applicable. It is hoped that contributors will assist by sending their copy to Room 42, Building R20 as early as possible.

A new face around the Laboratory is Gordon Fraser, who has joined the Scientific Administration Group to deal with Laboratory publications and to act as press and public relations officer. After five years as a journalist with IPC and later as a freelance, GF's career has now turned almost full circle. He was originally an elementary particle theorist, having worked at Imperial College, London, and Tel-Aviv and Sussex Universities. Welcome aboard Gordon.

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

12" slide rule in maroon coloured case.

Information on present whereabouts to C R Coley, R25, Ext. 269.

Double beam Serviscope, Type D33R, Serial No 28249

Missing from Lab 6, R1 - information on the present whereabouts of this item to R Bairstow, R1, Ext. 379.

RUTHERFORD LABORATORY BULLETIN

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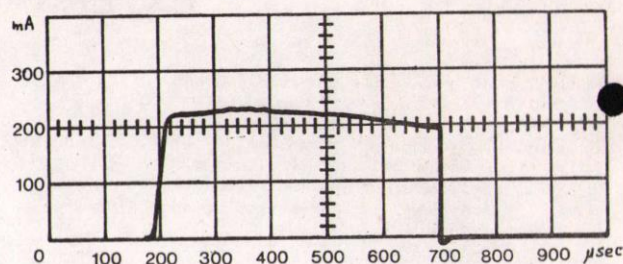
Deadline
for
Insertions

1000 hours Wednesday 5 November

NIMROD INJECTOR- PROGRESS REPORT

The last few weeks have seen three important parts of the new linac work to specification. First, the pre-injector (which supplies the protons at an energy of 665 Kev to the first of the four tanks) has delivered an output beam current of 200 mA for the required pulse duration of 500 microseconds, (see fig), and has turned out to possess stable, repeatable characteristics. This combination of proton current and pulse length puts the pre-injector well up in the league table for devices of its kind.

The magnitude of the beam pulse necessitates the second item, known as the "Bouncer". It is the business of the Bouncer to compensate for the 10kV droop which would otherwise occur in the 665kV accelerating potential whenever a beam pulse occurred. Experience elsewhere has shown that the design and successful operation of such a system is no trivial matter and so it was with considerable interest on 7th October 1975 that this system for the new Injector was given its first 'in situ' trial. Happily, within an hour of switching on, and after one minor fault had been corrected, the system was working perfectly and to its full specification.



maintaining the 665kV voltage constant to within 200v during the beam pulse. In addition to giving probably the most successful performance of any bouncer yet built the commissioning period must surely have been one of the shortest.

Finally, the first of the four r.f. power systems, that for tank 2, successfully powered the accelerating cavity. Each system generates up to 4½ Megawatts and is the largest and most powerful pulsed r.f. installation built so far at the Laboratory.

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CERN COURIER As from January 1976 the journal, CERN COURIER, will begin to extend its coverage so that it becomes more fully representative of the world-wide communities of high energy and nuclear physics. The journal will then be distributed via the Laboratory internal mail system.

Anyone who would find the journal useful AND WHO IS NOT ALREADY ON THE DISTRIBUTION LIST, should forward their names to the Librarian, Mrs E Marsh before 10 November 1975 so as to receive copies from the beginning of next year.

ROADWORKS Week beginning 27 October (a reminder).

Excavation of trench across A34 south of Rowstock Crossroads.

Probable diversion of all traffic on to one lane of the dual carriageway. During this period all traffic to Didcot and points east will be advised to use the road through Chilton.

I.P.C.S. NOTICE The AGM of the I.P.C.S. Rutherford and Atlas Section (SRC Branch) will be held in the Lecture Theatre at 13.00 hours on Wednesday, 29 October. Admission by membership card only.

INFORMAL LUNCH-TIME ORGAN RECITAL Perhaps - 'A little day music'? Anyhow we welcome back 'Jonathan' with his Yamaha D3 electric organ. Around 12.15 on Thursday, 30 October, just drift in and out, as before.

HORTICULTURAL SOCIETY The Society is running an "Any Questions" evening on Monday 10 November commencing 7.30 pm in the Lecture Theatre. Gather your multitudinous horticultural questions together and bring them along with the certainty that they will be answered. A bold statement? Maybe - but look at the team we are fielding! Mr V E Norvell, AERE Grounds Superintendent; Mr P Waite, Head Gardener to Lord Norrey at the Ham, Wantage; Mr K Cotton, Head Gardener at Pusey House and, Mr R Bateman of Radio Oxford. Coffee and biscuits will be served in the Coffee Lounge and all for 20p for AERE Horticultural Society members and 25p for non-members. So why not join the Society quickly, save 5p and gain many advantages. Contact any committee member about membership but members, and non-members alike - GIVE YOUR SUPPORT ON 10 NOVEMBER.

HEALTH AND SAFETY AT WORK ACT This Act is largely based on the findings at the Robens Committee and is one of the most important pieces of legislation, affecting the conduct of employment passed in recent decades.

It extends industrial safety legislation to cover nearly all places of work and defines criminal penalties which may be imposed on anyone who disobeys the provisions of the act.

It is so important that everyone in employment should make themselves familiar with its contents.

To help you to do so, a series of extracts from the act will be printed in the RL Bulletin during the next few weeks and a film will be shown in the Lecture Theatre (see next issue of Bulletin for dates). In addition a large number of leaflets describing duties under the Act are being distributed throughout the Laboratory.

The new Health and Safety Group, led by John Dickson will combine the work at the former Radiological Protection and Safety Groups. The safety committee has been replaced by a Safety Policy Committee and divisional safety committees. Safety News No 77 gives more details.

RUTHERFORD ANGLING CHAMPIONSHIP To be fished on the River Thames at Clifton Hampden on Saturday 1 November. Names, as soon as possible to either - P Craske, Ext. 232; M Greenwood Ext. 6692 or, A Hodges, Ext. 445.

YOGA CLASS It is proposed to start a class in Yoga at the Laboratory. All who are interested should contact Mrs L G Cook, RI, Ext: 443.

CHRISTIAN FELLOWSHIP On Friday 31 October Dr Brian Meardon of the NBRU will be concluding the series of talks on the 'Glory of Jesus Christ'. This week the subject will be 'The Glory of Jesus Christ in His Church - His Own' and asks such questions as 'What real hope has the Christian of Everlasting Life?' and 'How is Jesus manifested to His people in the 20th century?' All are warmly invited to come along at 12.30pm in the RI2 Conference Room. 'Prayer Changes Things'. It has changed situations and circumstances and helped countless thousands of Christians throughout the centuries in time of stress. It is also the means whereby we can thank God for His Goodness to us. This month's prayer-meeting will be held, as usual, in the RI2 Conference Room at 12.30pm on Friday, 7 November. All are welcome.