



Rutherford
Laboratory

6-13 November 1972
bulletin 37

R(12), NDT(60,3), ISW(3500), ANGLE(60), YINT(60), DUMMY(20),
(6,3), NACHT(48), XCEN(1), N(12), CHAR(1), AR
MMON/CFID/MFX(20,3), MFY(20,3), NFDX(10,3), NFX(3), NFD(3), I
B(2,20,3), NX(100,4), NY(100,4), XN(2), YN(8), IB(10),
DY(100,2), JDX(4), JDY(4), IHS(4), IOV(2), IUN(2), IDI(1),
CF(16), IFS, NFS, FX, FY, JK, PIC, KPIC, NCOUNT, NBIN, MAXC, MAJUN
AXN, CTA, CTB, MX, MY, JA, JB, JC, JD, JE, JF, XF(20,3), YF(3),
MMON/CJACK/NSY(20,30), NMS(20), NDR(20), N(20), YA
(20), BX(20), NST1(20), NST2(20), INER(20), NSX(20,30), AWT(60)

FIRST SKY SCAN ENDS

During the current week the film show, entitled 'We came in peace' deals with man's effort to conquer space. It is therefore appropriate that we are able to follow this with a further report on another space venture, the TD-IA satellite. In Bulletin No 12 for March 20 - 27, this year we reported on the successful launch of TD-IA and some of the aims of this satellite system. A further report was carried in Bulletin No 27, 14 - 28 August, and we are again grateful to Harold Wroe for the following 'latest situation' report.

The experiments on board TD-IA were switched off on 25 October at the end of the satellites first sky scan. S2/68 was still working well and looks capable of a second scan during 1973. ESRO has decided to attempt the so called 'hibernation mode' in which rough attitude control of the satellite is maintained through the periods of eclipses by spinning it about the sun axis. This was achieved on 28 October at the third attempt, and TDI is now spinning at a rate of 10° per second.

The hibernation mode is something of a misnomer. Although the experiments are asleep the spacecraft systems and the control centre staff have to be very much awake. Some people consider the hibernation mode more demanding than normal operations! For example, after spin up, the satellite may have to be roughly realigned with the sun once per day using the attitude control system. This has never been done before, of course, and there will only be one pass per day over a ground station able to transmit the commands, ie a real time operation in which about thirty commands have to 'go in' without fail every day for about one hundred days! If TDI survives hibernation the rewards could be considerable; this is however dependent on ESRO approving a further extension of the ground station network for 1973. This could mean a total sky coverage of 85% for S2/68 for the two scans thus almost achieving the full scientific objectives in spite of the tape recorder failure.

The most exciting events during the sky scan just completed was undoubtedly the enormous solar flare of 4 August - probably the most intense this century. The people with solar experiments on TDI were delighted, especially since the last few ground stations of the extended network had been brought into operation just a few days before. One man's meat is another man's poison and the flare had only nuisance value to S2/68 since it produced a vast high energy particle flux which caused saturation of the detector channels. For a time it was thought that one channel had suffered permanent damage but this is not so. The flare did leave behind a long term effect in that it charged up the Van Allen Belts. The TDI passes near to the horns of the inner belt at high latitudes and the background counts on the S2/68 data channels are much higher at these points than they were before.

Processing of the main data tapes continues at Atlas and full scale production of computer reduced data should begin during the next month. For the last few weeks at the first scan S2/68 was measuring the same stars as it did early in the mission. Unfortunately due to the slow rate of collection of data tapes from remote ground stations it will not be known for some months whether or not it gave the same answers!

POP PHYSICS - ON BBC2

The September issue of the CERN Courier reports on pages 288 - 289 on a film to be shown on the BBC2 Horizon programme, this Thursday 2 November, at 9.25 AND repeated on Sunday afternoon. It is a serious attempt to describe the world of particle physics in an entertaining and simple way.

We hope to be able to show this film at the Laboratory, if possible before Christmas. (Brian Southworth, the editor of the CERN Courier, visiting the Laboratory at the time of writing, is being 'got at' - Ed.)

METRICATION TRAINING

An introductory session on metrication has been arranged for all staff who did not attend the more specialised course for designers held earlier this year. A film/slide explanation of the SI Units will be followed by an outline of metrication within the Rutherford Laboratory. There will be six showings, all at 15.30 hours in the Lecture Theatre on the following dates:-

November 7, 15, 21, 29 December 6, 11

Industrial and non-industrial staff are invited to attend one of these sessions and supervisors are asked to release as many members of their sections as possible for this purpose, spread as evenly as possible over the six dates.

news continued on page 4

INTERNAL EVENTS

SEMINAR IN COMPUTING

Friday 3 November
11.00
Conference Room Building R12

Please note correction to venue for this seminar

NIMROD LECTURE SERIES

Monday 6 November
11.30
Lecture Theatre

Unexpected Results in Radiative Pion Scattering or 'Lower than Low'

Professor B Nefkens/UCLA

METRICATION TRAINING

Tuesday 7 November
15.30
Lecture Theatre

Please see details of this and further repeat sessions in the news section

HEP DISCUSSION GROUP

Wednesday 8 November
11.00
Conference Room, Building R1

K^* Production from K^+d at 12 GeV/c

Dr G Goldhaber/CERN and LBL

FILM SHOW

Wednesday 8 November
13.15
Thursday 9 November
12.40
Lecture Theatre

Hellfire Francis - a 30 minute colour film.

An historical glimpse of West Wycombe House and the re-enactment of the revels carried on by the Hellfire Club in the nearby caves. West Wycombe House is well worth a visit as are its grounds.

NIMROD LECTURE SERIES

Monday 13 November
11.30
Lecture Theatre

Recent Developments in X-Ray Astronomy

Dr K Pounds/Leicester University

NIMROD SCHEDULE

CYCLE 14 31 10 72 - 21 11 72

MACHINE PHYSICS

HIGH ENERGY PHYSICS

<u>Team</u>	<u>Beam</u>	<u>Experiment</u>	<u>State</u>
RHEL/UCL/Berkeley/ Torino	K9	4 GeV/c π^+p interactions in track sensitive target	Data
Bristol Univ/ Southampton Univ/RHEL	K15 $\pi 8$	K^+p and π^+p Differential Cross-Sections Tests for L/1 63	Data Setting up
Churchill Hospital Oxford/RHEL	$\pi 11$	Radiobiological Experiment	Data
Glasgow Univ/RHEL	$\pi 9$ P71	Polarisation Measurements in π^-p Charge Exchange Tests on Gas Cerenkov for RHEL/ISR Experiment	Setting up
Imperial College/ Southampton Univ	$\pi 7$	Studies of η ω and A2	Data

Social news continued

FOLK CLUB

No club on 3 November owing to the SRC Dance.

RECORD SOCIETY

Tuesday 7 November, 12.40 pm, Lecture Theatre.

Simon and Garfunkel - it is hoped to present one of their latest records but details are not available at time of going to press.

EXTERNAL EVENTS

NUCLEAR STRUCTURE SEMINAR
Monday 6 November
14.30
Nuclear Physics Lab, Oxford

Direct Capture Studies as a Tool in Nuclear Spectroscopy
Dr C Rolfs

THEORETICAL PHYSICS SEMINAR
Monday 6 November
16.15
Queen Mary College

Thermodynamics of the Two Level Laser Model
Professor Elliott H Lieb/MIT and Paris

PHYSICS AND GEOPHYSICS COLLOQUIUM
Monday 6 November
17.00
University of Bristol

Electron-Phonon Interactions in Transition Metals
Dr B L Gyorffy/Bristol

DARESBUURY LECTURE SERIES
Tuesday 7 November
14.00
Daresbury N P Laboratory

New Results in Inclusive Reactions and their Interpretation
Professor P Murphy/Manchester

THEORETICAL PHYSICS SEMINAR
Wednesday 8 November
14.30
University of Manchester

Physics at the Synchrotron Radiation Facility at Daresbury
Dr I H Munro/Manchester

OXFORD SOCIETY FOR SOCIAL RESPONSIBILITY IN SCIENCE
Wednesday 8 November
20.15
Rm C113, Psychology Bldg, Ox

Science Teaching in a Social Context
Dr Peter Chapman/Open University

ELEMENTARY PARTICLE PHYSICS SEMINAR
Thursday 9 November
14.15
Nuclear Physics Lab, Oxford

Small Angle Scattering of Pions and Protons from Nuclei at High Energies
Professor J Kirz/State University, NY and Oxford University

COLLOQUIUM
Friday 10 November, 14.15
Clarendon Laboratory, Oxford

Superflow
Mr S Harrison/Clarendon Laboratory

EVENTS AT AERE

THEORETICAL PHYSICS SEMINAR
Tuesday 7 November
14.00
Conference Room, Building 8.9

Electron Localisation in Disordered Systems
Professor D Thouless/University of Birmingham

NP DIVISION COLLOQUIUM
Thursday 9 November
15.30
Conference Room, Hangar 8

Nuclear Safeguards
Dr F Morgan/AWRE, Aldermaston

RUTHERFORD LABORATORY BULLETIN

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Editor: H F NORRIS

Deadline
for
Insertions

GENERAL & SOCIAL NEWS
Tuesday 1600

INTERNAL & EXTERNAL EVENTS
Wednesday 1200

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Chilton Didcot Berks
Abingdon 1900 Ext 484

**NATIONAL SAVING
CERTIFICATES - WEEKLY
CYCLE ENDING 11/11/72**

Certificates can be collected from the Cash Office R20 from 13 November onwards. New members wishing to join the scheme can obtain enrolment forms from the Cash Office. Forms must be returned not later than 15 November 1972.

FILM BADGE NOTICE

It is Period 12. Colour Strip - BROWN for 8y films and fast neutron packs. Please check that you are wearing the correct dosimeters and that all old ones are returned.

EX CALDER HALL MAN LEAVES

Mr Alan Meeks left the Laboratory on Friday 27 October to return to Morecambe, his home land. Alan's leisure time interests include car maintenance and driving techniques and he is at present taking MOT tests in order to qualify as a driving instructor. In 1959 he joined the UKAEA as shift chargehand on maintenance at Calder Hall moving to Harwell in 1964 engaged on the maintenance of site electrical services. Alan moved to the Rutherford Laboratory in February in 1968 and has been employed as a chargehand in the Nimrod Power Supplies and Ancillary Plant Group. On behalf of friends and colleagues Mr Brooks presented him with a wall clock and a cheque. In reply Alan expressed his thanks and said how much he had enjoyed working at The Laboratory. He extended an invitation to his friends and colleagues to visit him en route for the Lake District or after viewing the Blackpool illuminations.

FOUND

Four keys in Hydrogen Test Area, enquiries to Mrs C E Smith, RI, Ext 6693.

MISSING EQUIPMENT

The following items of equipment have been reported missing:-

Avometer Ser No 1515-163 : Avometer Ser No 123974-C-661
Westrex Tape Punch Ser No 671 : Westrex Tape Punch Ser No 11639
Tektronix plug in type L Ser No 101395

Information on the present whereabouts of these items to W M Evans, RI, Ext 213/6362.

Stopwatch Ser No 61/195

Information on the present whereabouts of this item to T G Walker, RI, Ext 6256.

OVERSEAS VISITS

Dr Thomas T Tso and Dr C J S Damerell, to CERN, 5 - 10 November for work on S120.
Mr P D Hey, to ILL Grenoble, 6 - 10 November, for discussions on equipment for neutron beam experiments.
Mr F Atchison, to CERN, 6 - 9 November, for discussion on beam for CERN 11 North area.
Mr I H Payne and Mr R M McClure, to CERN, 7 - 17 November, for modifications of power supply for high field pulsed magnet.
The Director, to Geneva, 8 - 9 November, to attend meeting of CERN Committee of Council.
Mr A T Gresham and Mr G Stapleton, to DESY, Hamburg, 8 - 9 November to examine and discuss concrete insulated quadrupole magnet.

SOCIAL NEWS

CHRISTIAN FELLOWSHIP

Friday 10 November. All welcome to come along to a Bible Study on the beatitude "Blessed are the poor in spirit: for theirs is the kingdom of heaven". Ken Potter will be leading and the meeting commences at 12.30 pm in the Conference Room Building R12.

**SEVEN-A-SIDE SOCCER
CHALLENGE TROPHY**

1 Nov 1972 GROUP 'A'								1 Nov 1972 GROUP 'B'							
TEAMS	P	W	L	D	F	A	Pts	TEAMS	P	W	L	D	F	A	Pts
AERE 351	4	4	0	0	11	2	8	Trans	4	3	0	1	20	2	7
R18	5	3	1	1	15	6	7	R25	5	3	1	1	16	6	7
C A Div	5	3	2	0	7	5	6	AERE Admin	5	2	1	2	15	4	6
AERE G O	5	1	2	2	11	12	4	AERE 220	5	2	2	1	14	10	5
Atlas	5	2	3	0	4	10	4	D O	4	2	2	0	9	12	4
R9	4	1	3	0	6	9	2	Casuals	5	1	3	1	7	23	3
Hall 3	4	0	3	1	4	14	1	Stores	4	0	4	0	2	25	0

FIXTURE LIST

Mon 6 Nov	Hall 3	v	R9	Mon 13 Nov	Trans	v	R25
Tues 7 Nov	DO	v	AERE Admin	Wed 16 Nov	Hall 3	v	C A Div
Wed 8 Nov	AERE 351	v	R18	Thur 17 Nov	R9	v	AERE 351
Fri 10 Nov	Atlas	v	AERE G O	Fri 17 Nov	AERE 220	v	Stores