

# Bulletin

of the Rutherford Appleton Laboratory

22 Mar 1982 No.5

## The Last of the Ariels

*ARIEL VI, the last in the Science and Engineering Research Council's programme of "UK/ARIEL" scientific satellites was finally switched off at 1200 hours GMT on Wednesday 24 February 1982, marking the end of an era which began in 1962 with the launch of ARIEL I.*

The ceremony, held in the Control Centre in RL, was attended by many of the RAL staff who were involved in the project, both past and present, as well as visitors from the manufacturer of the spacecraft, Marconi Space and Defence Systems, Portsmouth.

The initiation of the command to switch off the on-board telemetry transmitter was carried out some five minutes after acquisition of signal by Dave Eccles, who was one of the original Control Centre team when the project was based at Ditton Park. At noon precisely the command was transmitted and data terminated from ARIEL VI.

The satellite was launched on a NASA Scout launch vehicle from Wallops Island, Virginia, USA, on 2 June 1979. It carries three scientific experiments from the Universities of Bristol, Leicester, and Birmingham, as well as University College London's Mullard Space Science Laboratory. In addition it carries technology experiments provided by the Royal Aircraft Establishment, Farnborough.

The scientific achievements by ARIEL VI have been made in face of a number of technical problems but, in spite of these difficulties, the satellite has been kept operational largely by the concentrated effort of all concerned in overcoming the problems and by the use of additional ground stations throughout the world. Now, after 2 years 8 months and 14,800 orbits of the earth, we say farewell to ARIEL VI.



Dave Eccles switches-off. 82RB1641



'Ariel' team members, past and present, re-united to celebrate 20 years of scientific achievement by the Ariel series of satellites.

82RB1646



# INTERNAL Events

## HEP SEMINARS

R61 CONF. RM. - 1100 hrs

24 Mar Andre Martin/CERN  
"Heavy Quarks"

31 Mar Dr L J Reinders/RAL  
"QCD Sum Rules"

## HEP TECHNIQUES SEMINAR

R12 CONF. RM. - 1400 hrs

29 Mar S Biagi/QMC  
"Solid State Vertex  
Detectors"

## RAL LECTURE

LECTURE THEATRE - 1515 hrs

15 Apr Professor J F Davidson/  
Cambridge  
"Fluidised Combustion"

## CONDENSED MATTER SCIENCE SEMINARS

R3 CONF. RM. - 0930 hrs

30 Mar E Rastelli/Parma  
"Elementary Excitations in  
Metamagnets with Computing  
Interaction"

## REMOTE SOUNDING GROUP

R61 CONF. RM. - 1530 hrs

23 Mar Dr P H Moffat/RAL  
"Results from the LIMS  
Experiment on NIMBUS-7"

## WHAT'S NEW

LECTURE THEATRE - 1515 hrs

1 Apr Dr Mike Cruise/MSSL  
'The Hipparcos Project'

## CHRISTIAN FELLOWSHIP

LECTURE THEATRE - 1230 hrs

25 Mar "Anybody"  
an Australian film  
re-showing, by popular  
request.

# EXTERNAL Events

## THEORY GROUP SEMINARS

DARESBURY - 1400 hrs

29 Mar Dr G M Stocks/Daresbury  
"Electronic Structure of  
Random Alloys: from the  
Schrödinger Equation to the  
Rolling Mill"

## THEO. PHYS. SEMINARS

TPD - HARWELL - 1400 hrs

23 Mar Dr B J Hiley/Birkbeck  
"Bell's Inequality and  
Quantum Mechanics"

30 Mar Mr K A Cliffe/Harwell  
"Problems in the Prediction  
of Simple Flow Patterns".

## SHEP SEMINAR

SOUTHAMPTON - 1430 hrs

26 Mar D V Nanopoulos/CERN  
"A Natural Solution to the  
Monopole Problem in  
Supersymmetric Grand  
Unified Theories"

## NPD COLLOQUIUM

CONF. RM. H8 - HARWELL - 1530 hrs

25 Mar Dr C Isenberg/Kent  
"The Physics of Soap Bubbles  
and Soap Films"

6 Apr Dr M H Wood/Harwell  
"The PFR/TREAT and CABRI  
Fast Reactor Safety Projects"

## WHAT'S NEW?

### THE HIPPARCOS PROJECT

by  
Dr Mike Cruise

Mullard Space Science Laboratory

Lecture Theatre 3.15 pm  
Thursday 1 April

The Spring programme of lectures will bring news of some exciting projects, starting with "The Hipparcos project - charting the sky from space".

Their ambitious objective is to redraw the atlas of the Universe with a hundred-fold greater accuracy than has so far been achieved. The implications for astronomy are very significant.

## RAL Lectures

### FLUIDISED BED COMBUSTION

by

Prof J F Davidson, FRS  
University of Cambridge

Lecture Theatre - Thursday 15 April  
3.15 pm

The fluidised bed combustor is a relatively new way of burning coal, oil or gas with a high output per unit volume. The low combustion temperature facilitates control of SO<sub>2</sub> and NO<sub>x</sub> emissions. Achievements in research and the way in which they can influence design will be discussed, with particular reference to distributor design, heat transfer, bed expansion, combustion efficiency and elutriation of fine particles. The relevance of the new 20 bar combustor at the Rutherford Appleton Laboratory will be discussed.



## Minister Visits RAL



82 RB 1824.

Mr Kenneth Baker, Minister of State for Industry and Information Technology being shown a pre-demonstration of Project UNIVERSE by Drs Geoff Manning and David Thomas during his tour of RAL on Thursday 11 March. Data is being sent from the terminal on the left hand side of the picture via a 'Cambridge Ring' Local Area Network to the earth terminal on the roof of the Atlas Centre. From there it is transmitted to the Orbital Test Satellite and received back at the earth terminal before being reinjected into the Cambridge Ring and displayed on the right hand terminal, arriving one quarter of a second later after an 80,000 kilometre trip! When Project UNIVERSE is fully operational in June 1982 information will be able to be sent in this way to six other sites in the UK at a 1 Megabit per second rate.

1982 has been designated Information Technology Year (IT82) and Mr Baker was shown the computing and microelectronics facilities at RAL and told of future work on earth resources satellites which is included within this field.

Also pictured are John Burren, Professor Peter Kirstein (UCL), Bob Hopgood, Jed Brown and Chris Adams.

## Suggestions Awards

The following awards were approved at a meeting of the Local Suggestions Award Committee on 10 December 1981.

|                   |       |      |
|-------------------|-------|------|
| Mr R W Richardson | EBW   | £10  |
| Mr K P Robbins    | "     | £10  |
| Mr D Thomas       | "     | £25  |
| Mr G Adair        | Ins   | £10  |
| Mr E Capocci      | "     | £30  |
| Mr G Render       | Laser | £15  |
| Mr B E Patchett   | S & A | £10  |
| Mr D Forsyth      | SNS   | £30  |
| Mr P E Gear       | "     | £15  |
| Mr N R Goddard    | " )   | £5   |
|                   | )     | £5   |
| Mr C Greenhalgh   | "     | £30  |
| Mr A R Inchley    | " )   | £130 |
|                   | )     | £20  |
| Mr R Jones        | "     | £20  |
| Mr P Kendall      | "     | £15  |
| Mr J Purling      | "     | £15  |
| Mr A Smith        | " )   | £10  |
|                   | )     | £30  |

Keep them coming!

## ERSU Lecture

A REVIEW OF ENERGY DEVELOPMENT  
AND USE IN SCOTLAND  
by

Dr J Twidell

Leader of the University of Strathclyde  
Energy Group

Lecture Theatre - 3.15 pm  
Tuesday 23 March

Dr Twidell has been carrying out research in energy both in the UK and abroad. He is the organiser of the "Inverness Energy Conference" which has been a great success. He has built up a good working relationship with Scottish island communities and small industry and is, therefore, in an excellent position to discuss the developments in the energy scene and the future prospects and potential in Scotland.

This is an occasional lecture sponsored by ERSU.

Refreshments will be available from the R22 Coffee lounge from 2.45 pm.

## Film Badge Notice

It is Period 3, colour strip GREEN. Please check that you are wearing the correct badge and that all old ones are returned to Jenny Coates.

Next Film Change

Mon. 29 March.

## Missing

A convector heater with the No. SRC 14/58/59 which was on temporary loan to an office in the Atlas Centre, has disappeared. Will anyone who has any information as to the whereabouts of this heater please contact the Atlas Centre Admin. Office, Ext 6289.

George Lack of R12 Electrical Workshop used to own a 500v WEE Megger No. 965487. He'd like it returned, please!

## For John, read Henry

On 1 March John Litt left RAL on a year's secondment for the "corridors of power" at Central Office, hastened on his way by a little bribery from Scientific Admin - a party and a couple of framed prints of Abingdon as a token of our esteem. So far he has only been back once since then so it must be working!

In return Central Office has lent us Henry Vinall, their Press Officer since 1979. Henry has a wealth of experience as journalist, editor and Press Officer and can be found in John's old office in R20, where he is ready and willing to perform all those esoteric little tasks that formerly fell to his predecessor.



Henry Vinall, our new Press Officer.



## Prize Possession

The invention of a caption to a photograph and the answers to six simple questions, won this moped for Peter White of Instrumentation Division, pictured here with Henry Hedges, General Sales Manager of Norman Frizzell Motor and General Ltd, who made the presentation in Conference Room 3 on 15 February.

Peter was the winner of a competition run by the magazine "Civil Service Motoring" in conjunction with Norman Frizzell, who provided the prize and a set of driving lessons for the lucky winner.

The answers to the six questions could be gleaned from a careful reading of the magazine and the caption fitted to a photograph of a motor cyclist being timed on a trial run.

Unfortunately this is the last opportunity we shall have to see Peter in action on the moped. His daughter is delighted with it.

The caption was, "I just passed the Teddy Bears' Picnic. I don't know who was most surprised". Well, we didn't see the photo!



82RB1567

## Model Railway Exhibition

Anyone imagining that the RAL Model Railway Club is just a collection of guys playing with trains, couldn't be further from the truth.

The ingenuity used in making the layouts from all sorts of scrap is amazing and the research done into making not only the rolling stock and track authentic but placing them in the correct landscapes, getting both geology and botany right, is detailed and painstaking.

Some of our members are exhibiting at the Abingdon & District Model Railway Exhibition on Saturday 27 March at St. Nicholas Church Hall, Abingdon from 10.30 am to 5.30 pm. Why not come along; chat to the modellers - you may even wish to join!

## Cricket

The Laboratory Cricket Club is holding its AGM on Wednesday 24 March in R3 Conference Room. Old and new members please attend.

## Barn Dance

RAL Rec.Soc. will be holding a Barn Dance in the Restaurant on Friday, 16 April, from 8 pm until 11.30 pm, with Rip Pippingale and Natterer's Bat. The dance will include a long-sword display by Test Longsword, and song spots. A bar will be available. Tickets to include a Ploughman's Buffet are available from Mike Courthold, R12 Ext 6462 or other Rec.Soc.Committee Members.

## Darts Team Win

Last Friday evening (5 March) the RAL darts team played and won the Civil Service Sports Association southern regional finals. The team of A Forster, R Wyatt, K Biles, P Angell and T Morgan now go on to the next round, the All England National Competition.

The finals on Friday were played on the round-robin principle, RAL winning all three of their games, though it was a hard struggle. In the National competition it is hoped that they will play even better and bring home another trophy.

## Indoor Sports Transport

Your editor made a lovely mess of this in the last issue - so here goes again.

The bus leaves RAL for Aston Villa at 8 a.m. From Aston Villa the early bus leaves at 7.30 p.m. and the late bus at 12.30 a.m, that is, half past midnight.

## Christian Fellowship

The RAL Christian Fellowship is an interdenominational group which meets each Thursday lunchtime at 12.30 - 13.15 in the conference room in Building R2.

Activities throughout the year include short films, discussions on current topics, visiting speakers, and monthly prayer meetings and Bible studies.

In the Lecture Theatre on 25 March: By popular request, return of the Australian film "Anybody", shown here in 1981.

Do join us - new members are welcomed.

For further information please contact Val Jackman on Ext. 6576.

Editor: Jean Banford  
Building R20  
Rutherford Appleton Laboratory  
Chilton, Didcot, Oxon OX11 0QX  
Abingdon (0235) 21900 ext 484

Deadline for insertions:

# Bulletin