



NEWSLETTER

No. 140

January 1973

THE ASTROPHYSICS RESEARCH DIVISION

On 1st January 1973 the Astrophysics Research Unit Culham was united with R.S.R.S. and became the Astrophysics Research Division of this Station. For administrative purposes the division falls within the group of divisions supervised by Mr. Dalziel, and Mr. D. B. Shenton has been appointed Officer-in-Charge at Culham.

The A.R.D. brings a new range of work and expertise into the Station which will not only diversify our own research programme, but also enable us to provide a more wide ranging support for the S.R.C.'s programme in Space Science carried out by the Universities of this country.

We warmly welcome into the Station our new colleagues at Culham, and sincerely hope that, after the inevitable disturbances created by such amalgamations have been overcome, they will find a satisfying future in the enlarged organisation.

J. A. Shenton

CLOSURE OF THE R.S.R.S. DATA ACQUISITION STATION IN THE FALKLAND ISLANDS

With the lapse in mid-December of the requirement for gathering measurements from Ariel 4, the decision was taken to close the R.S.R.S. data acquisition station at Stanley.

The station was planned originally to command and take data from topside sounder satellites, the first of which, S27, was due for launch in 1962. During 1961, however, it became apparent that it would also be necessary to use the station for the forthcoming UK-1 satellite, if only because certain revolutions of UK-1 would not be observable by other acquisition stations and consequently data stored on board would be lost if replay were not commanded from Stanley.

By early 1962, the station was ready for work. In the event the first operations were on UK-1 (named Ariel I when safely in orbit) right from its launch in April 1962. Then S27 (now named Alouette I) was launched in September and operations commenced forthwith on that satellite as well. In those days communication with Stanley was by public telegrams sent by hand-speed morse, the only means available. At launch times the h.f. radio circuit was kept open as long as the ionosphere would permit and our telegrams were given priority so that delays were kept to a minimum.

With the launch of Ariel I and Alouette I, Stanley was in the space business and, throughout the ensuing years, acquired data as a matter of routine from all satellites in the topside sounder and Ariel series. This work was occasionally supplemented by observations on others, the last example being on Prospero in support of a Birmingham University experiment. In all, about 7200 passes of the four Ariel satellites were observed, 10,900 of the five topside sounders and 700 passes of seven other satellites, making a grand total of some 19,000 passes. This contribution to space research, made in collaboration with Canadian and American laboratories as well as British, is one with which all, particularly those who have served at the R.S.R.S. Stanley data acquisition station, may be justly pleased.

The direct association of R.S.R.S. and Stanley remains, for the ESRO data acquisition station which R.S.R.S. mans and the R.S.R.S. ionospheric observatory continue to operate as in the past.

H. G. Hopkins

THE SKYLAB EXPERIMENT

Readers may be interested to learn something of the progress of this experiment as given in the following extract from a letter to Dr. Rishbeth from Professor Owen Garriott:

"Skylab is still on schedule. The first launch of the "workshop" which contains living quarters, large array of solar telescopes, medical experiments, food and other consumables is set for next April 30. On May 1 (24 hours later) the first manned launch is made. Three crewmen rendezvous in orbit and remain there 28 days and then come home. Two months later, on July 25 our crew is launched (Alan Bean (on the moon on Apollo 12), Jack Cousma and I). We rendezvous and will stay for 56 days. A third crew is also scheduled for 56 days after we return.

We all participate in almost all aspects of the experiments and operations, but I have principal responsibility for the solar and medical experiments."

Professor Garriott spent some time working at R.S.R.S. in the early '60s before returning to the U.S.A. to train as an astronaut. All of us here wish him good fortune in his coming role as a truly 'ionospheric' physicist.

STAFF NEWS

Congratulations to:

- Colin and Jenny Murphy on the birth of their daughter Cheryl on 18th January.
- Lawrence Harris on his marriage to Marion Lock on 29th December at Birmingham.
- Francis Goodall on his gaining an M. Sc. in the Physics of Electronic Devices.
- Fred Salter now P. & T.O. III

Welcome to:

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|--------------|---------------------------------|
| A. Levine | Vac. Worker |
| P. Landsberg | H.S.O. (G.S.F.C. U.S.A.) |
| P. J. Barker | S.P.S.O. (transfer from Culham) |

Resignations:

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| Miss B. O. Brown | S.O. |
| G.E. Woods | S.C.S. |
| R. G. Quiney | H.S.O. |
| A. C. Gordon-Smith | H.S.O. - (retirement) |
| E. D. Price | C.O. - (retirement) |
| G. N. Taylor | P.S.O. (Returning to R.R.E. after secondment) |

Other Changes

A. B. Lowe H. S.O. From Div. 3 Gp. 1 to Div. 2 Gp. 2.

STATION NEWS

The Director has been invited to give the 9th. Appleton Lecture at the Institution of Electrical Engineers in the 1973-74 Session. He has also been elected to the Presidency of the Radio Society of Great Britain for the year 1973, during which the Society celebrates the Diamond Jubilee of its foundation. Dr. Saxton was previously President of the R.S.G.B. in 1970.

Mr. Meadows, Dr. King and Dr. L. Thomas attended a Symposium on 'Utilisation of the Shuttle-borne Space Laboratory for Science and Applications', which was held at Frascati, Italy from 15th to 17th January. This Symposium formed part of the discussions on the post-Apollo programme.

The so-called 'Space Shuttle', a device capable of being launched into orbit of a few hundred miles, then returning to earth and being re-used, should not be confused with the 'Skylab' project due to be put into operation later this year.

A Colloquium on 'Implementing the George 3 Operating System in a Scientific Environment' will be held at the Station on February 27th.

Mr. M. P. M. Hall has been visiting CNET, Paris, for discussions on tropospheric propagation.

Dr. Croom visited the Royal Astronomical Observatory (formerly the Royal Observatory) Cape Town and the field site at Sutherland, 230 miles east of the Cape, for discussions with the Director, Sir Richard Woolley and the Vice-President of the South Africa C.S.I.R., Mr. F. Hewitt, about the possibility of locating a proposed U.K. Millimetre-wave radio astronomy Observatory at Sutherland.

SPORTS AND SOCIAL CLUB NEWS

Wine Circle

The 1972 Christmas Cheese and Wine Party was the most successful one held so far. Ninety people consumed 35 bottles of various wines and a large quantity of bread and cheese plus a few pickled onions. One imbibor was heard to remark that the wine in his glass tasted like vinegar, not surprising considering a "practical joker" had poured it from a bottle containing the vinegar from the onions! I am sure that all who attended the party will wish to join me in thanking all those who helped in the preparations in particular Barbara Jeremiah who arranged all the food and decorations.

F. Bennett
Chairman

Motor Club

The trolly jack is available to members once more.

Fresh supplies of oil have arrived but any special requirements should be notified so that these may be placed on order.

The list of firms offering discounts to R.S.R.S. Motor Club members is now a little out of date and it is also possible to buy items more cheaply in certain specialist motor shops. The best thing to do is to find out the actual price rather than rely on a percentage discount. Wide variations in the price of tyres has been noticed.

A service to members including radiators, bumpers, brakes and water-pumps is now available due to the efforts of one of our members.

P. Muzlish

Household Goods and Books Section

We now have Birthday and Anniversary Cards in stock.

The following books have been reduced in price:-

Italian Cook Book	90p to 60p
Hansel and Gretal	18p to 15p
Heidi	20p to 15p
Fairy Tale Time	30p to 25p
Pop Ups	38p to 30p

Ellen Scammell

R.S.R.S. Football Club

The football team have not managed to continue their winning streak started just before Christmas and, although coming close to winning once or twice, have still to collect their first point for 1973.

Egham Rangers	Away (Cup)	Lost 1-4	Scorer Len Kell
Kennedy Rangers	Away	Lost 0-9	
Windsor Works	Away	Lost 1-2	Scorer Steve Sayer
Langley Wanderers	Away	Lost 1-3	Scorer Joe Bains

Coming Fixtures:-

4.2.73	Windsor Garage	Home
11.2.73	Kennedy Rangers	Home
18.2.73	Sun Celtic	Away
25.2.73	Cooper Hill Sports Res.	Away
4.3.73	R.J. United	Away

Len Kell

TENNIS CLUB

Retirement of Mr. A. C. Gordon-Smith

Since Gus arrived at Slough in the mid-fifties he has been the sheet anchor of the tennis section, always available for matches, tournaments and club evenings with one exception - the second week of Wimbledon. With his wife Kitty, he won the mixed doubles cup at the first S.R.C. Sports Day at Chiswick and since then partnered by Arthur Roberts, he has brought back the men's doubles cup for the past three years. Last year he also had the pleasure of seeing his star pupil receive the mixed doubles cup.

Gus is a superb tactician and an equally good coach. We shall miss watching those lunchtime coaching sessions - often very colourful - when well-limbed young women were being given the Gus treatment. Each of his pupils seemed to drive with great confidence in a surprisingly short time and anyone, like myself, who has been at the receiving end of a Huggins' rocket, will vouch for the success of the maestro's method. For the tennis section, Gus's retirement is purely theoretical - in practice we shall see even more of him on our tennis evenings, and at Chiswick this year he will be defending his title with his usual zest and determination.

R. W. Smith

SAFETY COMMITTEE NOTICE

ARE YOU PASSING OUT?

.....or passing in to and from the huts? If so, you might like to know that there is a new ENTRANCE/EXIT available by the drinking fountain between Spurs B and C.

LETTER TO THE OUTSTATIONS

Dear Colleagues

This seems a suitable time and place to welcome our friends at Culham to the noble army of martyrs at whom, ostensibly, these outpourings are directed. Greetings then, and take heart. The fact is that, though it's not a bad idea to read most of the Newsletter for information, this bit at the back may be omitted if you so incline; you'll not feel any the worse for it, I promise.

The state of affairs at the Station is at present such that it seems a good idea to reassure all visitors that we are what we are, and not a shipyard, iron foundry, the siege of Badajoz, or a dry run for the Apocalypse. We are, as they say, just going through a phase and will be all right in a little while. In short, rebuilding and redecoration are under way.

On every hand sledge hammers smash walls. The dust of destruction billows down corridors; more than likely, somewhere, beetles are doing nameless things to wedges; the library wall has been breached and the hideous racket of some sort of drill keeps us awake over our well-bound volumes. After a brave last-ditch defence the Typing Office has fled, seeking what salvation they may. Moving through this, like stretcher bearers, come the painters dispensing comfort and eggshell-finish cleanliness, harbingers of coming calm when the master plan is fulfilled.

Emphatically not in the master plan, however, was the gushing of the waters near Spur A. These unwanted springs sprang with great force from the ground round and about a large buried broken watermain. Instant action on the part of our works staff held back the flood before RSRS, hammerings and all, sank beneath the wave in a grand finale by Wagner out of Poe.

Amid all these changes, another; a familiar figure has retired from the scene, to wit, Gus Gordon-Smith, after a career in physics lasting over forty-five years. His name, in company with that of Dr. Essen, is enshrined in Kaye and Laby and in the Science Museum. Doubtless he feels that this is a sufficient apprenticeship and he is now ripe to concentrate his skills on bridge and tennis. We all wish him good luck. Sport is seldom the concern of this column, but without doubt the talent visible at Gus's tennis coaching sessions has aroused the interest even of

Yours sincerely,
The Editor

List of Reprints - January 1973

D. M. Willis

"The boundary of the Magnetosphere: The Magnetopause". Cospar Symposium, 1972, 17-34.

A. J. Gibson, M.C.W. Sandford

"Daytime laser radar measurements of the atmospheric Sodium Layer", Nature, 1972, 239, 509-511.

P. A. Bradley, D. Eccles
and J. W. King

"Some effects of the equatorial ionosphere on terrestrial HF radiocommunication". I.T.U. Telecomm. Journal. 1972, 1-8.

G. Gustafsson, T. R. Larsen,
H. Pettesen, W. Riedler
G. Skovli, F. Søråas and
G. R. Thomas

"Particle precipitation and its effects at high latitudes in the 2 February 1969 event." Space Research XII-Akademic-Verlag Berlin, 1972, 1463-1470.

INTERNAL MEMORANDA

I.M. 357

Norbury J.
White W. J. K.
Harden B. N.

Rainfall records at the Radio and Space Research Station Slough 1971.