

Bulletin

of the Rutherford Appleton Laboratory

6 July 1987 No.9

30TH ANNIVERSARY OF THE INTERNATIONAL GEOPHYSICAL YEAR

Thirty years ago scientists all over the world participated in a major collaborative study which was intended to improve our understanding of the Earth - its interior, land surface, oceans, atmosphere and those parts of space near the Earth. This study was known as the International Geophysical Year (IGY).

To mark the anniversary RAL has prepared a display, on show in R1 foyer during the month of July. This illustrates the work of the World Data Centre C1 for Solar-Terrestrial Physics which was originally established as part of the UK contribution to the IGY. The Centre was first located at Slough as part of the Radio Research Station (later the Appleton Laboratory) and moved to the RAL site at Chilton in 1982.

The IGY had its origins in 1951 when the International Council of Scientific Unions (ICSU) adopted a proposal that a third effort, comparable to the First and Second International Polar Years (1882-83 and 1932-33), should be scheduled for the coming period of maximum solar activity in 1957-58. The plans for this study were soon extended to cover the whole

of the Earth and the atmosphere above it. Consequently, in October 1952, the title was changed to the International Geophysical Year. ICSU then established a Special Committee for the International Geophysical Year (CSAGI) to coordinate international planning for the IGY.

In the years before 1957, CSAGI undertook detailed work to coordinate the efforts of the 67 countries which took part in the IGY. It identified 13 disciplines to be studied during the IGY:

- | | |
|---------------------|--------------------------|
| * Geomagnetism | * Aurora & Airglow |
| * Ionosphere | * Solar Activity |
| * Cosmic Rays | * Rockets & Satellites |
| * Meteorology | * Longitudes & Latitudes |
| * Glaciology | * Oceanography |
| * Seismology | * Gravimetry |
| * Nuclear Radiation | |

CSAGI provided guidance on standard operating procedures, and on methods for data analysis and data exchange. As much geophysical research involved synoptic observations (i.e. regular periodic measurements), CSAGI established a systematic scheme for making such data available to the worldwide scientific community. This scheme was felt to be necessary since

(see over)



Professor Edward Appleton and Robert Naismith digging the foundation for the mast at Tromsø during the Second International Polar Year 1932.

The base at Halley Bay Antarctica 1957.



The Ionosonde hut at Raffles College, Singapore 1957.



IGY

(cont'd from p1)

there had been difficulties in disseminating the data obtained during the Second Polar Year. The result was the World Data Centre System - a network of centres which collected data from observers, held them in a secure archive and supplied them to other scientists on request.

World Data Centre

The WDC system continued to operate in the years following IGY and has now become a permanent feature of the world geophysical scene. The system retains the basic structure set up at the time of the IGY. Firstly, there are different centres to deal with different geophysical disciplines (e.g. Solid-Earth Geophysics, Oceanography, Meteorology, Rockets & Satellites). Then within each discipline there are usually four centres holding similar data. One centre (WDC-A) would be in the USA, another (WDC-B) in the USSR, the third (WDC-C1) in Europe and the fourth (WDC-C2) in Japan. This replication of data at different centres guards against the total loss of data through a catastrophic destruction of one centre, and meets the geographic convenience of scientists around the world.

At present there are thought to be 27 active World Data Centres: 9 'A' centres, 2 'B' centres and 8 'C2' centres. The World Data Centre at RAL is one of 8 active 'C1' centres. The others are: Brussels (Earth Tides, Sunspots), Cambridge (Glaciology), Copenhagen (Geomagnetism), Edinburgh (Geomagnetism), Paris (Solar Activity), Prague (Recent Crustal Movements).

The World Data Centre at RAL collects and holds a wide range of data from the discipline of Solar-Terrestrial Physics, including a very extensive collection of ionospheric data. The Centre provides a variety of services to meet the varied needs of its customers. In particular, increasing emphasis is being given to the provision of on-line computer-based services which can be accessed via JANET.

In addition to the display in R1 foyer, a special IGY celebration was held at RAL on Friday, 3 July, attended by many scientists who took part in the IGY. This event included a video, showing highlights of IGY activities and a talk by Sir Granville Beynon (University College of Wales, Aberystwyth), who was a member of CSAGI. There was also a demonstration of modern computer-based techniques now in use by the World Data Centre at RAL.

For further information about the IGY display, or the World Data Centre, please contact Cathy Doidge on extension 6579.



The next lecture in this series takes place on Tuesday 14 July (note change of day) at 3.15 pm in the R22 Lecture Theatre.

A DISCUSSION OF SPACE
LIFE SCIENCES : PAST & PRESENT
Opportunities, Challenges and Issues
by
Dr J C Sharp
Deputy Director, Space Research
NASA Ames Research Center

In his talk, Dr Sharp will present an overview of the findings and observations made on people and other living organisms during space flight.

He will also discuss some other aspects of space flight which are germane to the Life Sciences, e.g., exobiology, planetary quarantine, life support systems and human factors. With the possibility of some additional funding in the next budget for work in the microgravity environment, including the Life Sciences, this subject may be especially important and timely.

It seems appropriate to remind everyone about the Rutherford Appleton Lectures, presented monthly on a Thursday afternoon at 3:15pm.

This is a broad-based series of lectures on topics of wide general interest, given by speakers who are experts of national or international standing in their field. They have been asked to aim their presentations at non-specialists and, to their credit, the vast majority put considerable effort into doing just this. As a result they should all be comprehensible by anyone on site.

Topics scheduled for the rest of 1987 include Arms limitations negotiations, the US Space Programme, Supernovae, Vehicle Safety, Alcohol Addiction and a personal perspective on the development of Oxford Instruments.

Special notices are put up around the site about a week in advance, and on the day itself there are 'Today' notices as well as special placards at the Main Gate, the entrance to R25 from the car park and in the R22 restaurant. You really should not be able to claim you didn't know the talk was on!

The lectures should be an integral part of the cultural background of the Laboratory. If there's something you would like to hear about or a speaker you would strongly recommend, please let Ian Corbett (Ext: 6239) know: your suggestions will be followed up.

Library Notice

The 1986 compilation of 'Picked up for you This Week' is now available, upon request at the R61 Library Desk.

Watch it!

Road Safety.

Recently complaints about erratic driving have been received from people using the Chilton to Rowstock Road.

All drivers coming onto or leaving the site are reminded that not all users of the A4185 are aware of the density of traffic on what appears to be a country road.

Please, therefore use great care when joining or leaving the site approach roads at all times.

Bridge Club

The RAL Bridge Club is organising a tournament on the evening of Friday 7 July, which will be open to members and non-members. Further information and application forms can be obtained from Pam Peisley, R25, (Ext: 5121).

RAL Wives Club

Our July meeting will be a pub lunch at The Harrow, West Ilsley. Good food and a warm reception for children are assured. Come along at 12 noon on Tuesday 14th July.

Our September meeting will be at Kath Pearce's on September 23rd 1987, 10.30am till 12 noon, for coffee.

For further information, please contact:

Celia Lockwood	or	Kath Pearce
6 Long Barn		21 High Street
Sutton Courtenay		Culham

Abingdon 874266 Abingdon 23767

If you are not on our list but would like to be informed of events please send your name and husband's building number to Celia Lockwood c/o Mike Lockwood, R25.

Sales to Employees

During the month of July there will be no sales of scrap materials at RAL.

Re-introduction of sales will be announced in the *Bulletin*.

Film Badge Notice

Period 7 Colour strip GREEN begins on 8 July 1987.

Please be sure you are wearing the correct dosimeters and return all old ones to Jenny Coates, R12.

Goodbye Ron

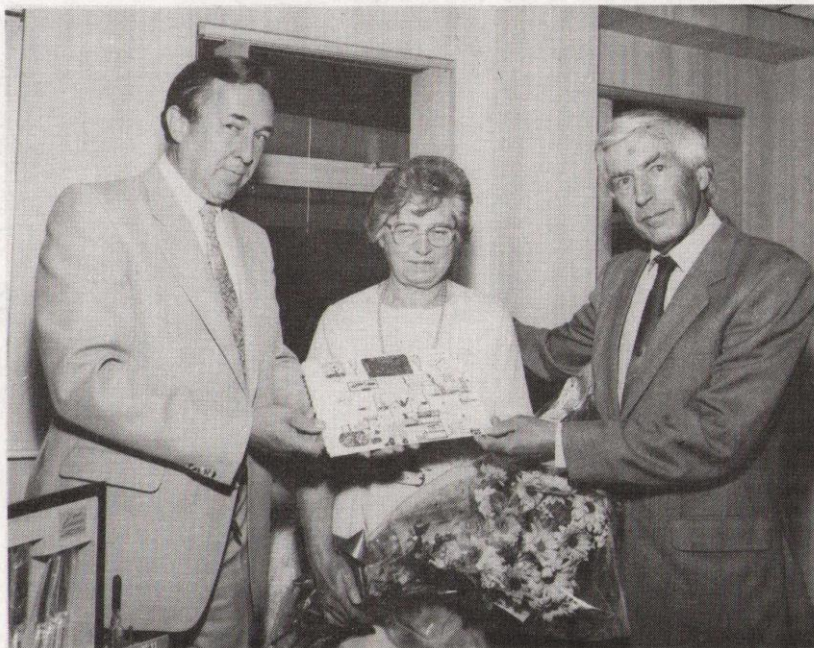
Ron Stovold, who retired from RAL on 2 July 1987, had the distinction of being the first SERC mechanical engineer to gain individual merit promotion to PPTO. As Student Engineer Counsellor since 1974 he had become greatly respected and difficult to replace, and in his specialist field of superconducting magnets will be very much missed.

Ron joined Nimrod in 1960 and quickly established himself as a good project engineer. Here he worked on RF cavities and target mechanisms, before joining Ron Newport's team on the High Field Bubble Chamber.

Bending magnets, quadrupoles, dipoles, hexapoles and wiggler magnets, all received his guiding hand. He was part of the James Clark Maxwell telescope team, Chairman of the Computer Aided Design working party and retired whilst still an active member of the DELPHI solenoid project team.

"Ron has been the epitome of a very professional engineer", said Ron Newport at Ron's farewell presentation ceremony. He had also indulged in a variety of adventurous extramural activities we learned. In his youth, he had been a motorcycle fanatic, and had built rocket powered model aeroplanes. He had also had an interest in the welfare and training of young people and for years had helped with the Scouts, taking parties to Wales on canoeing trips - sometimes in pretty awful weather.

"Ron we thank you for your long and very effective work in engineering design and development; your work



with students and your contribution to the work of the Division and to the Laboratory", said Ron Newport.

Gifts of a canteen of cutlery, a cheque, a Ray Roberts cartoon card, and a clamp with a section of superconductor mounted on a board (an 'in' joke this, hinging on Ron's insistence that things be clamped down safely) were presented. Mrs Stovold received flowers, with the wish that they would both enjoy a long and happy retirement.

Ron Stovold (right), Renee and Ron Newport proudly present the card.

In reply Ron thanked everyone for the gifts and for coming to see him off. He had thoroughly enjoyed his years at RAL. "I have been lucky in the people I have worked for and with and have enjoyed the friendly club-like atmosphere of the place" he said.

Sunday Football

RUNNERS-UP AND PROMOTION IN THE FIRST SEASON

The Sunday football club finished the season with a goal-less draw against the eventual league winners Stanford-in-the-Vale. The large crowd that turned out on a cold blustery day were not disappointed with this title decider. RAL knowing a win would ensure them the title, pushed forward from the start and Simon Lees went close after ten minutes. Twenty minutes later a move starting from full-back Ronnie Brumfitt saw Nick Moore hit the crossbar from fully thirty yards with the keeper beaten.

After the break Stanford came more into the game and were unlucky to have a goal disallowed. With a quarter of an hour to go and badly needing a goal, RAL brought on substitutes Duncan McClure and Steve Morley; the latter having the chance of the game with five minutes left. The goalkeeper lying helpless on the floor, Stephen picked his spot, but was unfortunate to see it stopped on

the line by one of the three defenders amassing the goal. The lads came off with their heads held high, because although we had lost the league title we had proved ourselves a club to be reckoned with in our first season.

On May 29th we held our Presentation Night at the A.E.R.E. Police Club, with sit-down meal and disco to follow. The trophies presented were as follows:-

Player of the year	- Ronnie Brumfitt
Player's Player	
of the year	- Shane Miller
Most Improved Player	
of the year	- Martin Purling
Top Goalscorer	- Simon Lees (23)

To cap our season we have now had a reserve team accepted for next season. They will play in Division Four while the first team will be in Division Three. So, all you budding footballers we are waiting for you. Come and join a club of the future.

K J Chapman (Secretary)

Thanks

Ron Stovold wishes to thank everyone for the really wonderful send-off given to him on the occasion of his retirement.

"The fine gift of the cutlery, obtained just in time for the presentation after great efforts by Bob Coombs will provide my wife and I with a reminder of my friendships at the RAL for many years. My wife also greatly appreciated the bouquet of flowers and enjoyed the opportunity to meet so many of you.

To those of you who I was unable to see before my departure I send my thanks for your friendship and help during the many years."

Pat Willis (late of Finance R20) also thanks friends and colleagues who gave so generously to her retirement present. She wishes to say goodbye to all those she was unable to see personally before she left.

Tony Short wishes to thank all those who contributed to his leaving present and wishes also to say "Cheerio" to those he was unable to see personally.

RAL RATs through to Finals

RAL's five-a-side indoor football team 'The Rats' moved one step nearer the Civil Service Sports Club National title on 7 June when at Alton, Hants they became Southern Region Champions.

Now, with Regional Cup and individual medals won, they eagerly await the announcement that tells them where and when they will fight the National Finals.

Mark Wheeler reports on the Alton victory.

We arrived at the Alton Sports Centre around noon to sample the atmosphere - at this stage just happy to be there.

The action was scheduled for a 3 p.m. start and RATs found themselves playing the first game of the day. The eight qualifying teams were formed into two groups, RAT's being placed in a group with HM Customs Reading, Southampton Customs and SRO/4 region.

Rats first game, against Reading Customs, was won 2-1 by Rats with goals from Mike Burton and Jackie Allen. Against Southampton they struggled one goal down for a while before Douglas brought them level to win a deserved point. Rats now had 3 points from two games and due to the way the other results had gone could afford to lose 1-0 against SRO/4 and still make the semi-finals on goal difference.

Rats started badly against SRO/4, conceding a goal early on and being two down before Jackie Allen scored a cracking drive to make the score 2-1. This would see the Rats through.

Then nightmare. Dave Rippington was judged to have encroached into his own area and SRO/4 region were awarded a penalty. The SRO/4 players hit the spot kick; Mark Wheeler in the RAT's goal went the wrong way but saved with his feet; from the rebound Mike Burton raced away and laid the ball square to Graham Douglas, who scored. The whistle went, 2-2, the Rats were safe.

The Telecoms team, RAT's met in the Semi-finals had, 2 years previously, been National Champions, so feelings about the outcome were mixed. Up to this stage the games had been of 9 minutes duration with no change of ends. From now on there would be two halves of 6 minutes with a change round.

Rats won the toss and kicked off. Neither team was giving anything away and some superb football was played in the early stages. Then came the break the Rats wanted, Graham Douglas hit a cracking shot, the Telecom's keeper got behind the line of the ball, but a

deflection off another Telecom player put the ball in the opposite corner of the net to give Rats the lead. Then Jackie Allen found himself in space on the edge of the box and drilled home number two.

In the second half with Ronnie Brumfitt providing a fresh pair of legs and the team firing on all cylinders, Rats played some brilliant football. Telecoms pulled a goal back with almost the last kick of the game but the Rats were through to the Finals, 2-1.

Southampton Customs had won their semi-final 4-2, but Rats had held them to a draw earlier in the day, so no-one was making predictions as to the outcome of this Final.

Rats won the toss and elected to change ends. Southampton kicked off and took the game to the RAL team. They had several changes but were thwarted each time. Just before half time Graham Douglas was injured and replaced by the versatile Dave Rippington.

In the second half Southampton turned on the pressure, peppering the Rats goal from all angles. Keeper, Mark Wheeler performed brilliantly making save after save. Then disaster struck. A shot parried by Wheeler, was gently played back to the keeper from the edge of the area by Dave Rippington under pressure from the Southampton striker. This the referee adjudged to have been played before the ball

left the area, and awarded Southampton a penalty. Protest was of no avail, the striker placed the ball, took a couple of paces back and struck. Wheeler guessed right and saved to the joy of his team. Justice was done. The referees whistle signalled the end of the game. So it would be decided on penalties.

Rats again won the toss, and Jackie Allen stepped up and slotted number one into the top corner of the goal for RAT's. Southampton missed. Mike Burton made it 2 for Rats. Southampton came back to make it 2-1. A very reluctant Dave Rippington stepped up and hammered the ball home to make it 3 out of 3 for RAT's and a superb save from Wheeler made the score 3-1. Ronnie Brumfitt had only to score from his penalty and Rats were champions. Ronnie sent the keeper the wrong way, but he still managed to save with his feet.

Southampton now had to score from both their remaining penalties to force sudden death. But their luck was out, Wheeler made a great save to his left and the Rats had done it. The title was theirs.

The Final will take place in September.



Top Row, Dave Rippington, Graham Douglas, Mike Burton and Tony Furnival.
Bottom Row, Jackie Allen, Mark Wheeler and Ronnie Brumfitt. (Photo: MW).

Bulletin

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