NOTICEBOARD

RAL Notices:

RAL Lectures
25 April 3pm
Pickavance Lecture Theatre
Microbes and mathematics
Sir Robert May FRS, Chief Scientific Adviser to the Government and Head of the Office of Science and Technology.

Bridge players
Why not exercise your grey cells! Join us for bridge during the lunch hour on Tuesdays and/or Wednesdays. We would be pleased to hear from you. On Tuesdays we play social rubber bridge (guidance is given to 'new' players) and on Wednesdays we play a Chicago competition. We meet in CR3, R61 between 12.30pm and 1.30pm. Call Allan Ridgeley on RAL ext 5558.

Working Parents Network Group
Apologies for the last-minute cancellation of the meeting on 5 March. Fortunately we have arranged another on Wednesday 24 April, 12.30pm in CR1, R1. In case you've forgotten, this is an informal meeting to discuss the possibility of setting up a working parents network at RAL for mutual support and information. If you are unable to attend the meeting but are interested in joining the network, please contact Monica Brown on RAL ext 5484.

Rec Soc Quiz Evening
Eight teams entered the Rec Soc Quiz on 8 March. After five rounds only two-and-a-half points separated the first three teams: Press & PR plus (R Bishop, A Kurzfeld +2) = 46 points (1st prize £20); Dadd's Army (R Dadds, J Brown +2) = 44.5 points (2nd prize £10); Compos Corner (K Lewis, J Mackerness +2) = 43.5 points (3rd prize £5).

RAL Tennis Club - New Season 1996
Open to all members of the Rec Soc.
Annual membership fee: single £3, family £5.
For an application form please contact David McPhail, R66, RAL ext 5212, e-mail D.J.McPhail@RL.AC.UK

Missing
Two SOLEX 3000 multimeters, RAL Nos R40357 & R40358, are missing from the R2 G6 detector laboratory. They may have been left in the ISIS R55 area. If anybody knows their whereabouts please contact Nigel Rhodes on RAL ext 5491.

CLRC NOTICES

Library Loan Requests
Use the new MEGAPHONE ICON to place requests for loans direct from the library catalogue. You can also use it to send suggestions and comments to the library. You will need first to be registered as a library user - if you have not already done so, contact the library for a registration card on DL ext 3397 (email library@dl.ac.uk) or RAL ext 5384 (email library@rl.ac.uk).

Non residential management training
Recognising that some staff are unable to attend the JTS residential management courses, a programme of non residential courses has been arranged. Details are shown below. All RAL courses will be held at The Cosener's House and all DL courses will be held at a hotel local to Daresbury. Staff interested in attending any of these courses should contact their local Training Section, on ext 3600 at DL, ext 6285 or 6018 at RAL.

Course	Date	Location
Key Skills in Management (formerly Management 1)	17-21 June 1-5 July	RAL DL
Group Management and Teamwork (formerly Management 2)	15-19 July 23-27 December	RAL DL
Managing Organisational Change (formerly Management 3)	20-24 May 9-13 December	RAL DL
Development for Non Managerial Grades	24-27 June	RAL

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Correspondent: Lesley Welbourne (Tel: DL ext 3519, e-mail L.A.Welbourne@DL.AC.UK)

Articles, ideas and letters are very welcome!

Articles to the Editor or Correspondent by 20th of the month.

CLRC LABNEWS
A Monthly Newsletter for Council Staff APRIL 1996

Science Minister visits RAL and opens new space test facility

Mr Ian Taylor, Minister of State for Science and Technology, took time out of his busy ministerial schedule to visit RAL on 12 March. Accompanied by Sir John Cadogan, Director General of the Research Councils, the Minister met senior staff and then went on to tour the Central Microstructure Facility, ISIS and Space Science Department where he opened the new Space Test Facility.

Commenting after his visit, Mr Taylor said "I have never visited RAL before and I am very impressed by the high quality of the work, the enthusiasm of the staff and the efforts that are being made to keep UK space and other science activities at the forefront in world terms."

Dressed in regulation clean room clothing Mr Taylor (right) is shown the new Space Test Facility by SSD's Mike Sandford. The test facility will be used to test and calibrate space science instruments in conditions which simulate those that they will encounter in space (96RC1837)

INSIDE

Sir John Cadogan at DL

On 14 February, Daresbury was host to Sir John Cadogan. His visit included a trip around the site, a number of presentations and a lunch break with some DL staff members and TU representatives.

After a private meeting with Ron Newport and Paul Williams, Sir John had an extensive tour of the SRS, stopping at many of the experimental stations en route . At station 16.1 he was able to discuss the process engineering work carried out by Tony Ryan and his colleagues. He also visited researchers at a number of other experimental stations, including Jeff Thornton from the Liverpool-Manchester IRC in Surface Science. Richard Nelmes described the high pressure work carried out by his research group, Peter Lindley described protein crystallography activities and Neville Greaves spoke with Sir John about surface science at DL. No trip to the SRS is complete without an introduction to LIGA and Sir John viewed the LIGA station and received an overview by Tom Aitken. He also visited RUSTI, where he met David Clark, and MEIS, where he spoke with Kevin Connell.

Sir John Cadogan (centre) in station 16.1 with Tony Ryan (left) and Ian Munro (96RC1474)

A well earned break for lunch followed with DL senior staff members and TU representatives, after which Martyn Guest and Richard Blake were able to present details of the Collaborative Computational Programmes and High Performance Computing Initiatives. Sir John's questioning curiosity certainly kept everyone he spoke with on their toes. He said at the time how impressed he was and that he had enjoyed the visit enormously - a message he later reinforced in a letter of thanks to Ron Newport.

First shot from Titania

Titania, the new high power krypton fluoride laser at RAL, fired its first shot (a little reluctantly!) at a ceremony on 2 April. Although Titania was itself raring to go, a hiccup in the networked computer system that controls the firing of the laser meant that the signal to fire didn't reach it at the first attempt. However, after a few minutes' work by the operations crew, Dr Paul Williams was able to initiate the process which set the laser up, started the sirens (which sound while the capacitor banks are charged) and, to a great cheer from those gathered, fired its first shot.

Titania is physically a large machine. As befits its international standing, it will be the most powerful ultraviolet laser in the world. It will deliver up to 400 joules to target and can generate pulses as short as 300 femtoseconds (where a femtosecond is a millionth of a billionth of a second). There are already users scheduled to use its unique properties to study fundamental plasma physics and the generation of very bright X-ray pulses. Further studies will include aspects of inertial confinement fusion and X-ray laser developments.

Jim Lister of the CLF and Dr Williams checking on the progress of the first shot from Titania (96RC2181)

Professor Colin Webb of Oxford Lasers and the Clarendon Laboratory inspects the Titania optics (96RC2190)

Professor Mike Key, Head of the Central Laser Facility, is delighted with the prospect of the new laser which will be "unique in the world and will give its users an important competitive edge in their fields of research". Dr Williams was keen to point out that the project to build Titania was "on time and within budget - a credit to everyone involved".

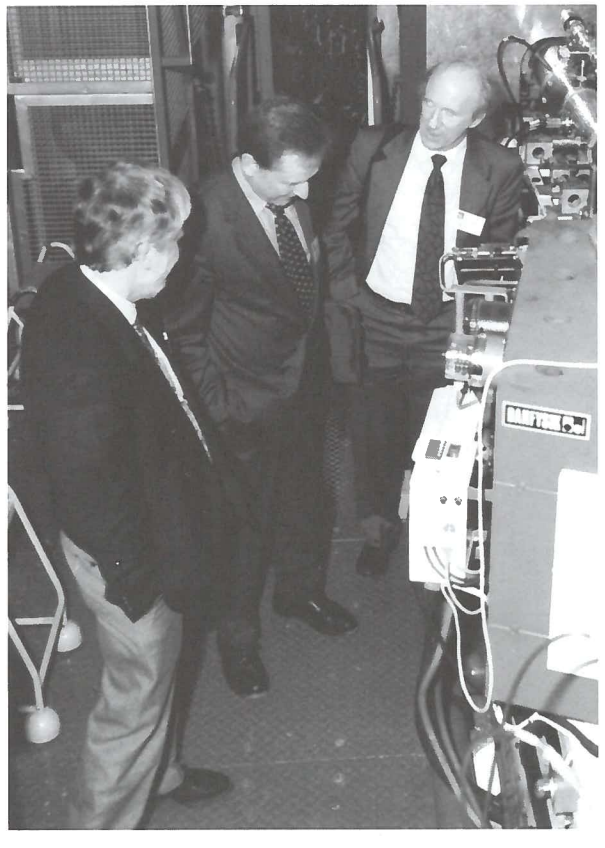
MEIS facility inaugurated

On 1 April, Professor Richard Brook OBE, Chief Executive of EPSRC, inaugurated the Medium Energy Ion Source (MEIS) facility at Daresbury Laboratory. In a short speech Professor Brook praised the scientific persistence and innovation that had led to the development of MEIS. He unveiled a brass plaque in the facility that commemorates the inauguration.

MEIS allows scientists to probe the surface layers of solids with a beam of ions - the energy and angle of reflected ions providing information about the atomic structure and composition of the sample. The facility was built following a joint proposal to SERC by Warwick and Salford Universities and Daresbury Laboratory - research groups from Warwick and Salford are performing the first experiments.

The inauguration ceremony was followed by a workshop in the Merrison Lecture Theatre chaired by Dr Ron Newport. Paul Bailey gave an introduction to the MEIS facility. The research perspective was given by Professor J F van der Veen (FOM Institute for Atomic and Molecular Physics), Professor T Gustafsson (New Jersey), Professor D G Armour (Salford) and Professor D P Woodruff (Warwick).

Dr Paul Williams thanks Professor Brook for unveiling the plaque at the MEIS inauguration (96/228/19)



Professors Woodruff, Brook and Armour at the MEIS facility (96/228/17)

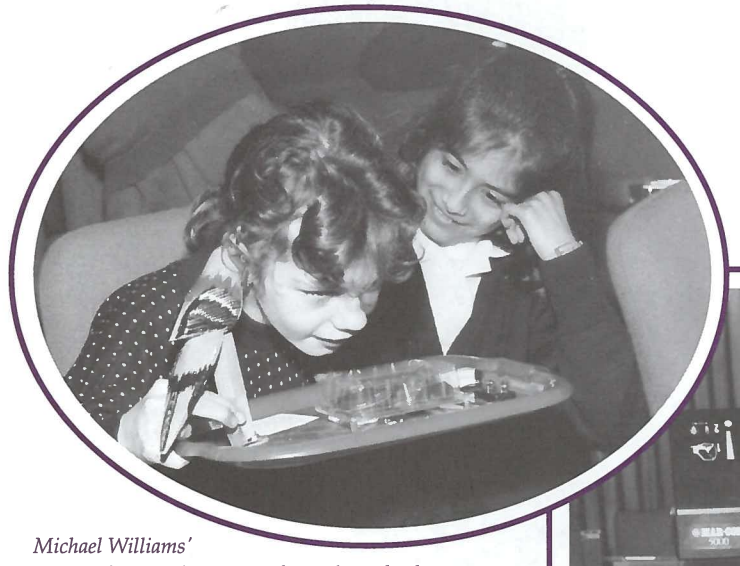
CLRC celebrates SET in style

It was a very good year for SET96 at CLRC. Designed to raise the public awareness of science, engineering and technology, the third science and technology week attracted a record 2,600 visitors to Daresbury and RAL.

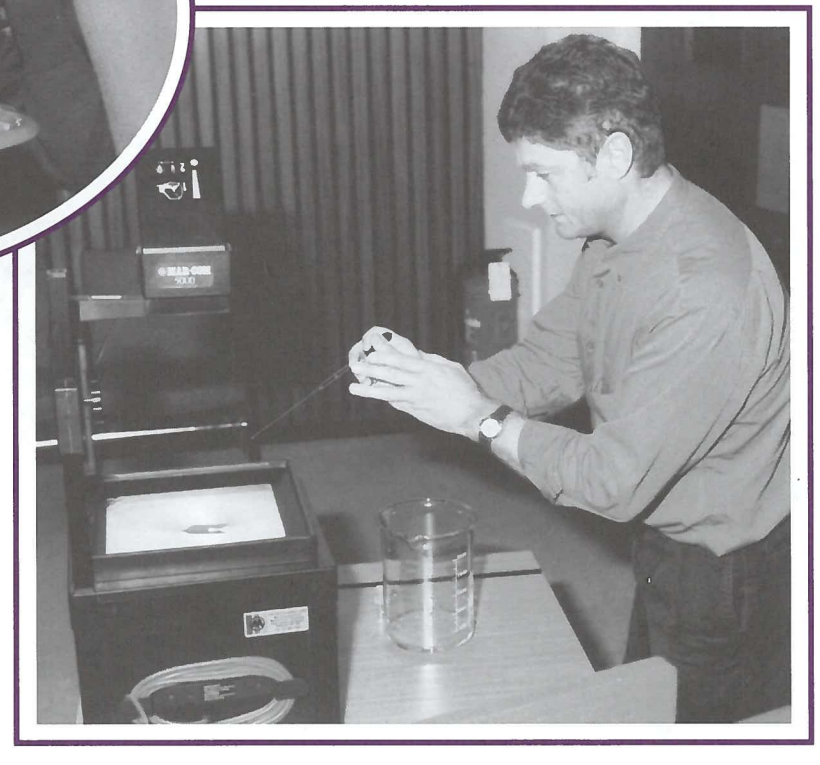
At DL schoolchildren were treated to a series of entertaining science lectures, including things that glow in the dark with 'Fluorescence' by Gareth Jones and, going out with a bang, 'The Chemistry of Fireworks' by Tom Smith from Kimbolton Fireworks. Other speakers were Neville Greaves (DL), Tony Parker (RAL), Peter Lindley (DL), Louise Johnston (Oxford), Dave Hewkins (Aberdeen) and Joan Bordas (Liverpool), who between them covered areas as diverse as laser physics and the story of Frankenstein!

RAL opened its doors to the South Oxfordshire, Wiltshire, Berkshire and Buckinghamshire communities as the host for a non-stop, action-packed programme of visits, lectures and workshops, conducted by some of the best scientists and engineers in the field. Many of the lecture-demonstrations included an insight into 'leading-edge' and 21st century science, engineering and technology including new materials, virtual reality and technology foresight for teachers. The programme also included, amongst others, lectures on the science of Making Ice Cream (Kathy Sykes, Bristol University) Sparks, Arcs and Microscopes (Bryson Gore, Royal Institution) and Comets, Dinosaurs and the Future of Life on Earth (Professor Sir Arnold Wolfendale, Durham University, President of the Institute of Physics) which, not surprisingly, were a great hit with younger audiences.

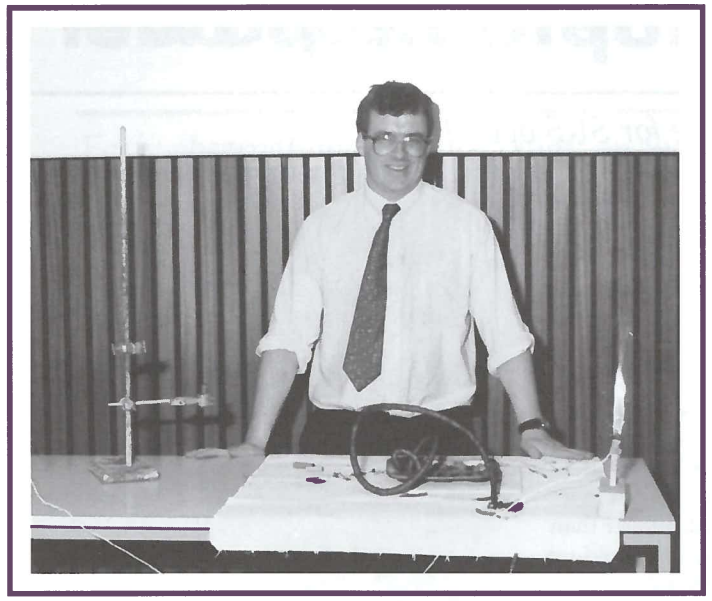
We think that our pictures capture the essence of the fun and excitement generated by the SET week.



Michael Williams' parrot whispers the secrets of sound to school children during his presentation on the basics of light and sound (96RC1879)



"Fluorescence" - Gareth Jones (96/219/18)



The chemistry of fireworks - Tom Smith (96/219/21)

Experiencing the magic of virtual reality at Professor Bob Stone's lecture (96RC2231)

A young member of the audience is enthralled by the antics of a 'slinky' watched by Dr Mike Gluyas during his lecture which explored the physics of sounds and music (96RC1962)

SRS gets uninterruptable power

New power supply system will 'buy' more time for SRS operation

A project to install uninterruptable power supplies on all of the medium voltage distribution of the SRS and its beamlines has recently been completed. This protects all of the electronics, computer systems and vacuum systems on the entire facility against interruptions and damage from mains transients. Mains 'drops' can cause chaos - the SRS beam is inevitably lost and a sudden unscheduled 'spike' or a loss of power can leave many parts of the system in a state of flux - not least for the operations crew who have to get the SRS up and running again as soon as possible.

At the heart of the system are two Chloride Power Electronics 300kVA uninterruptable power supplies of the continuous on-line type. They can supply the load from banks of lead acid batteries for a minimum of six minutes if there is total mains failure. The scheme also includes two 400kVA Dale Power Systems diesel generator sets, which have been on site for many years but very little used. They switch in if any mains failure lasts longer than 30 seconds and extend the hold-up time to several hours.

The uninterruptable power available is not sufficient to retain the stored beam - that would require at least another two megawatts. It will, however, allow the SRS hardware and instrumentation to be reset in a controlled way, reducing the down time caused by mains interruptions from, typically, several hours to the time required for a routine refill, about 45 minutes.

The uninterruptable power supply team from left: Steve Griffiths, Jim Cartledge, John Towers, Bob Rogers, Barry Intin, Paul Dickenson, Steve Arnold and David Poole (96/218/1)

David Poole, DL

Technology transfer success marked by royalty cheques

The success of CCLRC's technology transfer agreements with Vacuum Generators (VG) and Biosym-Molecular Simulations (MSI) was celebrated with the payment of the first royalties on sales of the Daresbury Double-Crystal X-ray Monochromator and Cerius2-EXAFS software at the annual SRS Commercial User's meeting on 15 February. The cheques, presented by Nick Campbell, VG's synchrotron projects manager, and Steve Maginn of MSI, total almost £70,000.

VG have won orders for eight Daresbury Double-Crystal monochromators, including five from groups working on two of the world's newest synchrotron light sources: the Advanced Photon Source (APS) at Argonne National Laboratory, Chicago, and the European Synchrotron Radiation Facility (ESRF) in Grenoble.

MSI has sold over 20 copies of the Cerius2-EXAFS software to academic and industrial research groups around the world. EXCURVE, which forms the basis of the Cerius2-EXAFS product, takes raw experimental data from EXAFS spectroscopy experiments and converts this directly into information about the atomic structure of the material that is being studied. EXCURVE and Cerius2-EXAFS work on the UNIX platforms most commonly used for this type of scientific data analysis.

Vacuum Generators present their royalty payment to DL staff. From left: Neil Bliss, Bill Smith, Barry Dobson, Ian Munro, Richard Thomson (VG) and Nick Campbell (VG) (96RC1465)

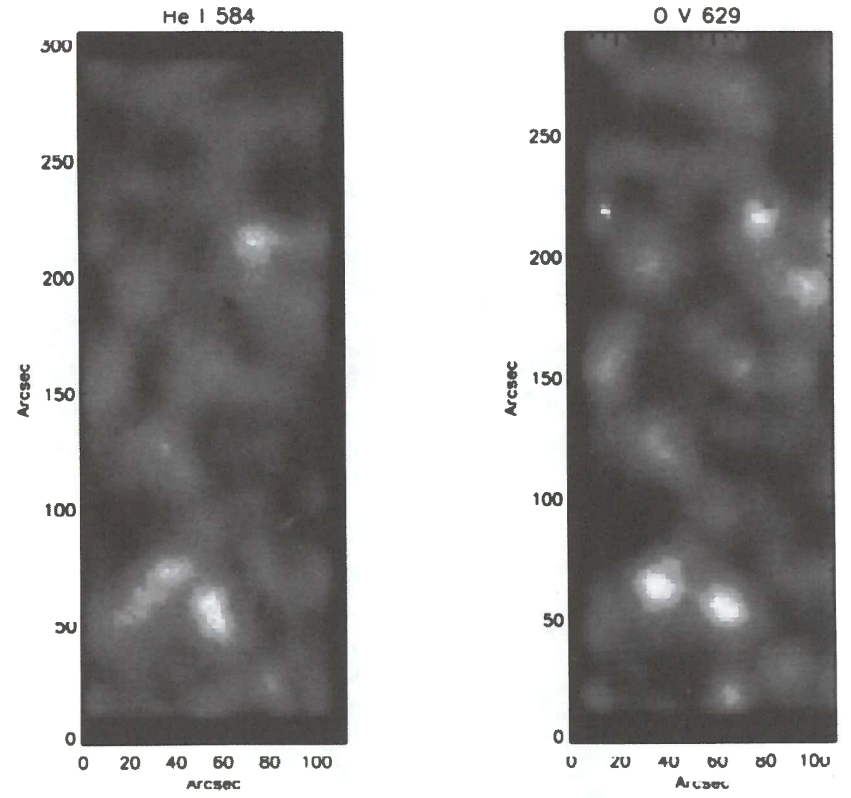
CDS sees first light

Early observations shed new light on Sun's atmosphere.

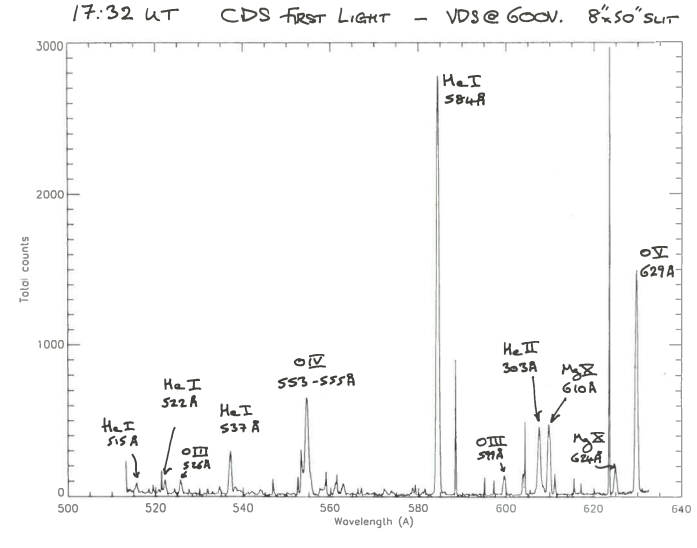
RAL's Coronal Diagnostic Spectrometer (CDS) which was launched aboard the ESA/NASA Solar and Heliospheric Observatory (SOHO) on 2 December 1995 reached a major milestone on 5 February when, after two months commissioning, its doors were opened and sunlight was detected for the first time.

The instrument is designed to detect extreme ultraviolet radiation from the Sun to enable us to investigate the nature of the Sun's atmosphere - in particular to understand those features of the Sun's atmosphere which influence the Earth. The radiation which CDS is detecting has been poorly observed in the past, so the observations are already a major boost to solar physicists.

The accompanying images show regions of the Sun's atmosphere observed in radiation emitted by helium (left) and oxygen (right) ions in the Sun's atmosphere - these resulting from very different layers within the atmosphere. They show a granulation pattern which is driven by convection currents in the body of the Sun. Also shown (below) is a spectrum, whose spikes indicate the presence of helium, oxygen, magnesium and other trace elements in the Sun's atmosphere.



(96RC1620)



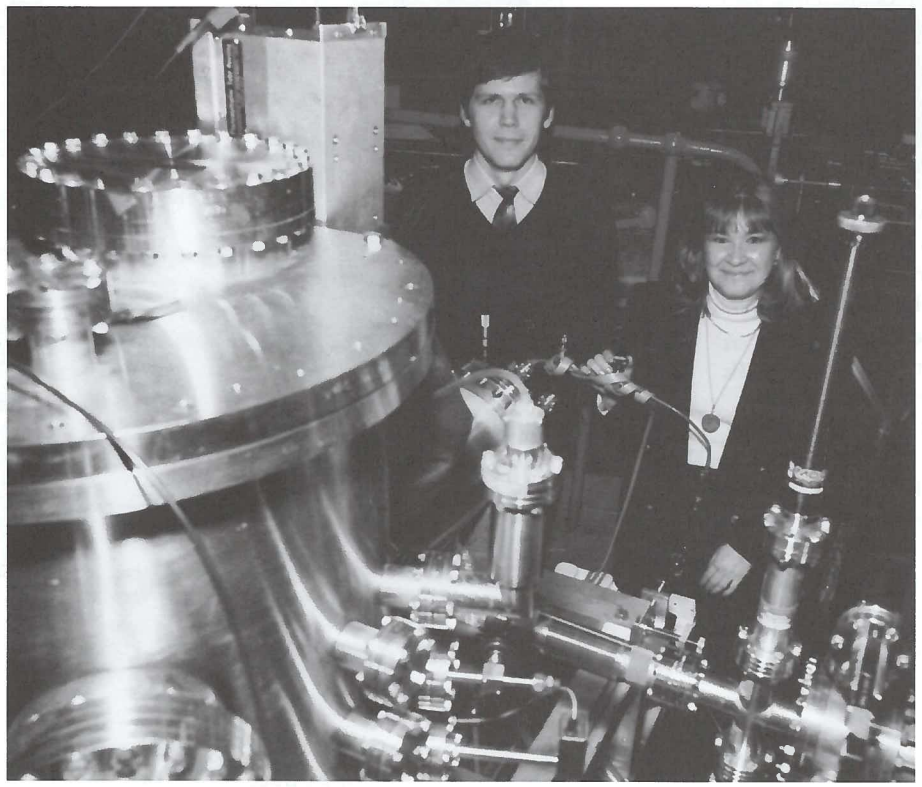
These emission lines will be used to determine densities, temperatures, gas flows and gas composition throughout the Sun's atmosphere. With such data RAL scientists hope to literally take the Sun's atmosphere to pieces in order to understand how it works.

Observations taken so far indicate that the instrument is working very well which is a credit to the many RAL staff and their collaborators who worked on the project for the last eight years.

Richard Harrison, RAL

A Royal Society double for the SRS

In October 1995 Drs Igor and Larisa Shpinkov arrived at Daresbury Laboratory to work in the Synchrotron Radiation Department. They almost simultaneously obtained post-doctoral fellowships from the Royal Society to work for one year in the UK. Both Igor and Larisa come from Moscow State University with which Daresbury Laboratory has a close connection - Professor Ian Munro, head of Synchrotron Radiation Department and Professor Vitaly Mikhailin of Moscow have a joint research programme spanning 25 years.



Igor and Larisa Shpinkov on SRS beamline 3.2 (96/201/5)

Larisa Shpinkov graduated from Moscow State University in 1983. She is a specialist in the application of nuclear spectroscopy methods to the study of hyperfine interactions on intermetallic compounds, such as the so-called Laves phases cubic stabilised oxides, high temperature superconductors and biological materials such as live cells and radio pharmaceuticals. The research team in which she works is the only group in the former Soviet Union using such rare and sophisticated methods. Their work has yielded a number of interesting results, including the existence of a localised magnetic moment of the tantalum atom, previously thought to be non-magnetic.

Igor Shpinkov is from the Synchrotron Radiation Laboratory at Moscow State University, where the main activity is the spectroscopic study of phosphors and scintillators in the XUV and VUV regions. He has carried out investigations on many materials, resulting in the development of a model of genetic recombination that enables common features seen in all luminescence spectra to be explained. He has also been involved in the development and commissioning of experimental stations on Siberia-2, the storage ring at the Kurchatov Institute in Moscow.

During their time at Daresbury, Larisa will participate in experiments studying the de-excitation in molecular ions, using her expertise in these studies to develop computer software to analyse the often very complex experimental data. Igor will carry out further investigations on the fast processes in insulators following UV excitation. Some of the materials he will study will have important practical applications as heavy scintillators for nuclear physics and as phosphors for dosimeters and storage screens.

All in all 1996 is likely to be a very busy year for Igor and Larisa and their young son, Slava.

Ian Munro, DL

Retirements

Ron Newport bids farewell to Bill (96/169/1)

Bye bye Bill

One of Daresbury's longest serving electricians, Bill Hunt, has retired after more than 25 years' service.

He will be remembered not only as a highly respected electrician but for his input to the various committees on which he served, ranging from membership of the Laboratory Safety Committee to the Staff Benevolent Committee. He also took in his stride many duties associated with Trade Union business.

Most of all Bill will be remembered for the help and encouragement he gave to many apprentices who passed his way during his time at Daresbury. There will be many electricians and technicians at DL and who have moved on who owe much to Bill for his help and guidance in years gone by.

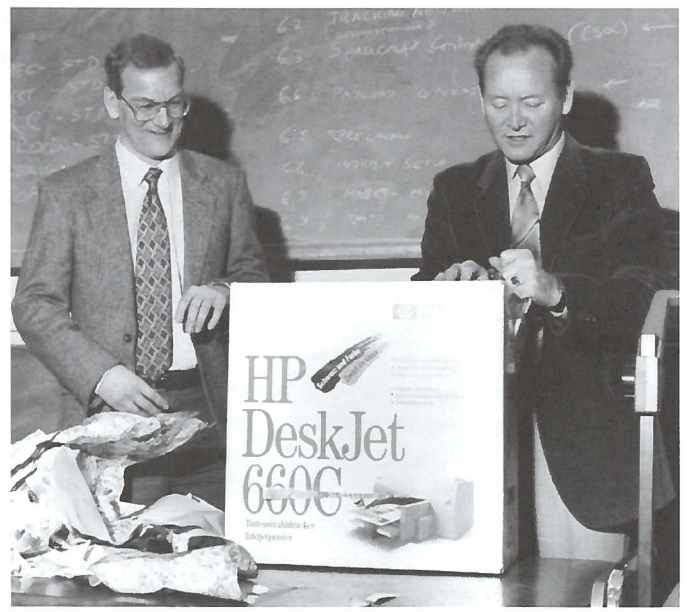
In recognition for all his work both at Daresbury and outside, Bill was awarded the BEM in 1989, a well deserved honour. We all thank Bill for his help and friendship over many years, and wish him future health and happiness in his retirement, doing what he knows best – helping others.

Tom Hinde, DL

Priceless!

It's out! David Price isn't Welsh, well, he is but having been born in Kingston-upon-Thames, there are grounds for dispute! This was just one of many facts revealed by Peter Gear about David during his retirement presentation on 8 March after nearly 34 years at RAL, 33 of them spent in Science Department.

What isn't a matter for debate is the importance of David's contribution to the work of the Laboratory; as a shop steward and site convenor in the 1960s, '70s and '80s, as a surveyor during the construction phase of ISIS (the list of work is impressive but too long to mention here), and more recently as prime mover in the introduction and operation of a new database system in the ISIS store and the development of another used in the planning and progressing of ISIS shutdowns. As Peter said, "If you wanted to know anything about baselining, rescheduling, resourcing, linking and consolidating, Dave was your man."



Peter Gear presents David with his leaving gifts: a colour printer for his PC and a framed daily work schedule for retirement (96RC1994)

David will be kept busy in his retirement with his many hobbies: fishing, photography, personal computing, DIY and travelling with his wife, Gwen.

SNIPPETS

Witec scientists
Congratulations to Helen Walker (Space Science Department) and Debbie Thomas (Computer and Information Systems Department) at RAL for being chosen as two of the 1347 experts in a new book listing the top women scientists in Europe. Witec (women in technology) was commissioned by the European Commission's Equal Opportunities Unit to produce this handbook of women experts in science, engineering and technology to raise the profile of women scientists in Europe.

Committee visit
The Science and Technology Committee of the House of Commons, as part of its study on the work of PPARC, visited RAL recently. Members were introduced to the Laboratory's work and heard about its role in coordinating particle physics research in the UK and its involvement in several space missions supporting astronomy research.

Hungarian award
Karoly Osvay, a Hungarian scientist working in Central Laser Facility, has won one of ten Hungarian scientific postdoctoral scholarships which are awarded annually by the Hungarian Ministry for Education. Karoly, currently working at RAL under a European Union scheme, is delighted with this prestigious award. He had to submit an application to a panel of scientists (most of whom are from the Hungarian Academy of Science) and then convince them of the importance of his proposed research in an interview. The year-long scholarship will take place at Jate University in Szaged where he will continue his research in lasers and optics. However, don't be surprised to see Karoly back at RAL in the future! Since 1992 he has worked in the CLF on five different occasions, each visit being from two weeks to 12 months long. "Scientifically, this is a very interesting place to work, and I have made many friends here", he said.

Congratulations ...
... to Keith Jeffery, Head of Systems Engineering Division at RAL on his appointment as Honorary Professor in the Department of Computer Science at the University of Wales College of Cardiff. Keith is also a Visiting Professor at Heriot Watt University and Senior Visiting Fellow at the University of Birmingham.

and
... to Martin Green who, competing in the 90 kg (14st 3lbs) class, won a gold medal at the British Under 23 Powerlifting Championships in Scotland recently. Martin, who works in Finance at RAL, has been picked to represent Great Britain in the European Under 23 championships in Prague in June and the World championships in Finland in August. Martin secured the title by some impressive lifting - 364lbs in the bench press, 507lbs in the squat and 573lbs in the dead lift, but is nevertheless surprised by his success, "My lifts were actually down by 10% on what I've lifted before. Splitting my powerlifting suit in the warm-up room didn't help either!" Martin is looking for sponsorship to help in his bid to compete in the European and World championships. If you would like to help, contact Martin on RAL ext 5695.

DRAL Annual Report wins award
The 1994-95 DRAL Annual Report - rather different from its predecessors - has been awarded a certificate of merit from the British Association of Communicators in Business. Entries were judged on the balance and standard of their content as well as more general impressions about the design and use of illustration and headlines. The award will be presented as part of the three day British Association of Communicators in Business Conference in early May.

RAL nursery named
The winner of our name the nursery competition is Averil Compton of Bookham Technology Ltd for her suggestion "Little Stars". Averil wins £30 worth of vouchers for the Oxford Apollo Theatre which were generously donated by Kinderquest Limited, operators of the workplace nursery. The judges chose the name because it is positive, has lots of themes on which children can develop, and children can visualise and relate to stars.

Oops!
Our article "Record run at the SRS for astronomy users" in last month's Labnews should have read "The low current beams - currents of a microamp or less compared with the usual 250 **milliamps** ... and about 40 **milliamps** in single bunch". We apologise for the error.

Letters to the Editor

Dear Editor
My thanks to all my friends for their generous contributions towards my retirement gifts. To all those I was unable to see, cheerio and best wishes. I hope to see many of you again in future times.

Yours sincerely
Gilly Keats

Dear Editor
Your quote from Ernest Rutherford ("RAL declares victory in first inter-site quiz" - March edition) may be correct but he certainly didn't make the statement in 1950 - he died in October 1937!

Yours sincerely
Phil Duke

Clearly a case of a voice from the grave! - Ed

Dear Editor
In reporting the inter-site quiz (March edition) you erred to mock! RAL did not "fail all the astronomy questions". We knew that the cosmic background temperature is ~3K (the only kosher astronomy question!) The others were: "Name the suggested dark companion star to the sun" and "Name the ancient Greek who first went on record suggesting that the Earth rotates and revolves around the sun". Nether team knew these; would you? Incidentally we had no astronomer in either team.

Answers: Nemesis and Aristarchus of Samos (aka 'Arry Starkers and not 'Arrys Toffy Knees or 'Arrys Tottle).

Yours sincerely
Paul Dickinson

Dear Editor
My thanks to Dr Newport for a happy sendoff and presentation. Thanks too to friends and colleagues for their contributions towards my gifts on the occasion of my retirement from electrical services on 22 February. I have enjoyed my 26-year stay at Daresbury Laboratory. Best wishes and I hope to see you all again soon.

Yours sincerely
Bill Hunt

"We are sorry that due to a shortage of space in this month's Labnews we are unable to include our regular Staff news. Full details of March and April staff changes will appear in May's issue. - Ed.

NOTICEBOARD

DL Notices:

Wednesday Wanderers
'Eccleston to Chester' - Six to seven miles of level walking alongside the river Dee from Eccleston Village Church to Chester via Heron Bridge House and through the city's ancient meadows. Returning via the Duke's Drive, which is not now part of the Eaton Hall estate. The lunch stop will be at Handbridge in Chester where we can a) buy sandwiches or soup at the popular sandwich shop and picnic on the green opposite (the site of the Roman Minerva Shrine), or eat them in the Grosvenor Arms pub which is foodless (but does have toilets) or b) try the Jolly Miller Cafe which is quite new and seems to offer a reasonable menu.

When: Wednesday 1 May
Start: 11am
Meet: Park outside Eccleston Church
Map ref: 413627
Maps: Landranger sheet 117/Pathfinder sheet 774
How to get there: From the A55 take the A483 to Wrexham. Turn left at the first island, after 100 metres left again into Rake Lane for Eccleston Village in 1.5 miles.