

## Euro spacecraft looks for life on Mars

The first European spacecraft ever to land on another planet will look for evidence of life on Mars when it lands on the red planet in 2003.

The Beagle 2 lander will have to operate in some of the harshest conditions ever encountered in space exploration. AEA Technology will use its expertise in space technology to ensure that the craft will be able to operate in the extreme environment.

Beagle 2 will travel to Mars aboard the European Space Agency's Mars Express spacecraft before descending to the planet's surface. It will have to survive the vibrations of take-off and landing and deal with night times which, even at the Martian equator, can be minus 70°C or below.

AEA Technology will supply lithium-ion batteries for both spacecraft. The company has been developing batteries for space applications for six years and currently



The Beagle 2 lander showing its solar panels outspread and its instrument arm being deployed.

**This month**  
Facilities contract

3

**Signs of Spring**

5

**Expert locksmith**

7

**New study**

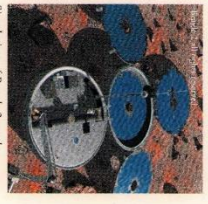
8

continued ... from page



Beagle 2 will then carry out a series of experiments centred on mass spectrometric samples of soil and rock samples collected using instruments on the robotic arm, nicknamed the Beagle's paw.

The Beagle 2 robotic arm deploys sampling tools such as the rock grinder and scientific instruments that must operate in the hostile environment. AEA Technology is regarded as the world leader in lubrication of space components. Traditional terrestrial oil-based lubricants cannot be used because they are likely to evaporate and disperse away from the equipment within the vacuum of space. This could potentially contaminate sensitive on board instrumentation. AEA Technology is evaluating the performance of alternative lubricants.



Simulation of Beagle 2 on the Martian surface.

AEA Technology is part of the Beagle 2 consortium led by Colin Pillinger, professor of planetary sciences at the Open University. For more information see [www.beagle2.com](http://www.beagle2.com)

## Report studies EMF link with cancer

After a wide-ranging review of scientific research, an independent advisory group to NRPB has concluded that the electromagnetic fields in most UK homes are not a cause of cancer. However some epidemiological studies do indicate a possible small risk of childhood leukaemia associated with exposure to unusually high levels of power frequency magnetic fields.

The Advisory Group on Non-ionising Radiation (AGNIR), chaired by Sir Richard Doll, published its report in March. Entitled 'ELF Electromagnetic Fields and the Risk of Cancer', the report looks at work published since the group's first major review of the topic in 1992 and supplementary reports in 1993 and 1994.

The main conclusions of the report are that, 'laboratory experiments have provided no good evidence that extremely low frequency electromagnetic fields are capable of producing cancer, nor do human epidemiological studies suggest that they cause cancer in general. There is, however, some epidemiological evidence that prolonged exposure to higher levels of power frequency magnetic fields is associated with a small risk of leukaemia in children.

In practice, such levels of exposure are seldom encountered by the general public in the UK. In the absence of clear evidence of a carcinogenic effect in adults, or of a plausible explanation from experiments on animals or isolated cells, the epidemiological evidence is currently not strong enough to justify a firm conclusion that such fields cause leukaemia in children.

'Unless, however, further research indicates that the finding is due to chance of some currently unrecognised artefact, the possibility remains that intense and prolonged exposures to magnetic fields can increase the risk of leukaemia in children.' The reports also recommends further research. NRPB issued a response at the time of publication. Details can be found on its website together with more information about the report, at: <http://www.nrb.gov.uk>

### SAFETY Update

There has been one reportable incident at Harwell and none at Culham since the last issue of Echo. A radiation exposure device was despatched from Harwell with more activity than declared. The DETR were informed.

### Scrambled eggs

The MRC Harwell Lecture took place on Wednesday 21 March in the Cockerell Hall. Harwell Lord Winston, professor of fertility studies, Imperial College School of Medicine, presented a lecture entitled 'Scrambled Eggs'. A report will be carried in the next issue of Echo.

### Risk it game

NRPB staged two events during National Science Week 16 - 25 March, organised by the British Association for the Advancement of Science (BAAS). One of the events was a locally staged lecture on lasers in Stamford in the Vale, the other was a more global event involving an internet based game.

The local lecture, 'The Laser - Tool and Entertainer', was given by Dr John O'Hagan of NRPB at St Deny's Church in Stamford in the Vale. It featured practical demonstrations of the scientific and entertainment application of lasers. There was no charge to attend the event but donations were made to a local charity, the Friends of Stamford School.

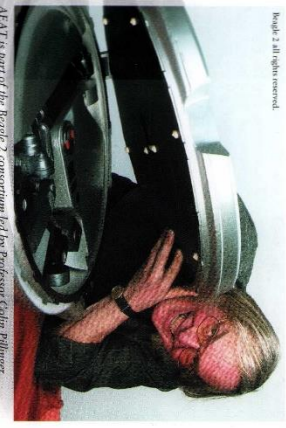
NRPB is also putting an internet game on risks at [www.riskit.org.uk](http://www.riskit.org.uk). Here, visitors can test their knowledge of risks and apply it to a group of people in "KU World". The aim is to keep the people in the KU World as healthy as possible by correctly advising them about the risks they take in life. Which is safer, riding a horse or a motorcycle? Is there a risk from mobile phones? See if you know - go on, risk it.

THE COPY DEADLINE FOR THE NEXT ISSUE IS: Thursday 19 April for publication on Wednesday 9 May 2001.



ECHO is published by UKAEA, 521 Harwell, Didcot, Oxon OX11 0RA.  
Editor: Valerie Judd, Tel: (01865) 331151 Fax: (01865) 331154.  
E-mail: [vjpr@johanne.co.uk](mailto:vjpr@johanne.co.uk)

Your contact is:  
Harwell PR manager: Nick Hance, 521 Harwell, Tel: (01235) 456909 Fax: (01235) 456899  
Designed and produced by:  
Darren Moores, Tel: (01235) 210269.



AEA's part of the Beagle 2 consortium led by Professor Colin Pillinger.

supplies a number of earth orbiting and inter-planetary craft before descending to the planet's surface. It will have to survive the vibrations of take-off and landing and deal with night times which, even at the Martian equator, can be minus 70°C or below.

AEA Technology will supply lithium-ion batteries for both spacecraft. The company has been developing batteries for space applications for six years and currently

AEA Technology is also helping to develop the instrument arm used to carry out some experiments on the surface, and a parachute mechanism for safe descent.

The Mars Express mission will be launched in June 2003. Beagle 2 will separate from Mars Express around Christmas 2003 and will descend to the surface of the planet by parachute.

Gas-filled bags that cushion the landing shocks will cause the lander to bounce several times on the Martian surface before coming to rest. The lid of the clamshell shaped lander that protects Beagle 2's valuable instruments will then unfold and the lander will transmit back to Earth a track by the rock group Blur that was specially composed for the mission. The lander's cameras will be calibrated using a target of coloured dots prepared by the artist Damien Hirst.

continued back page

# Insight

## Featuring companies at Harwell and Culham Innovation Centres

### Niche International Ltd

Niche International Limited is a specialist software development company at Harwell Innovation Centre. The company specialises in cost-effective EPOS (electronic point of sale) systems for independent retailers. These systems are both simple to set up and use yet offer powerful functionality.

"Having been involved with a variety of EPOS solutions for many years, and been disappointed with their cumbersome and complex routines, we decided to design and develop our own solution that offered a superior alternative," says MD Paul Rud. "Our solution is MinPOS, a fully integrated stock control and EPOS package that is ideal for all types of retailing, whether fashion, DIY, groceries or hotels and restaurants.

MinPOS is highly flexible and can be configured to suit the way any business is run. The user-

friendly Windows environment - previously only enjoyed by the major high street chains - is now available to all. The product has a number of advanced features specifically designed for modern retailing applications. The software manages stock control, sales promotions and special offers, purchase order processing, customer data management, financial reporting and branch integration.

Niche International has a partnership with the world's largest independent POS equipment distributor. Together they can offer

### Site Intelligence

Most companies make no use of the customer data available on their website, according to Site Intelligence, a specialist in website visitor intelligence, which has recently moved into the Harwell Innovation Centre.

Established in 2000 by John Woods and David Jackson, Site Intelligence provides businesses with sophisticated analysis of their website users' browsing and buying patterns - enabling organisations to shape their e-business strategies more effectively.

All website visitors leave an electronic record every time they visit a site. However, much of the data is difficult to analyse. Site Intelligence uses sophisticated software and expert statisticians, so businesses can find out as much as they require to help them understand the information, including:

- how many real customers visit their site (rather than employees or competitors)
- which promotions are most cost-effective
- how casual visitors turn into buyers
- the effect any redesign has on users' browsing patterns

John Woods, co-founder of Site Intelligence, sees the Innovation Centre as the ideal environment to develop his business. "The UK is entering a new era of e-business and to be in a centre for innovation is suitably apt for us. Site Intelligence aims to be at the forefront of this more professional approach to e-business and we look forward to growing our offices at Harwell."



John Woods, chief executive, and David Jackson, business development director, of Site Intelligence. Contact: john.woods@siteintelligence.co.uk, see www.siteintelligence.co.uk or tel 01235 838818.



customers a total solution including software, hardware and installation, training, support and on-site maintenance.

"The business was set up about four years ago but has really taken off recently," comments Paul. "We were looking at several properties in Abingdon but liked

### NobleTech Ltd

NobleTech Limited, based at Harwell Innovation Centre, is a software development company formed just over a year ago. The company divides into three business areas - consultancy, training and products. Consultancy has been the mainstay of the business with a gradual expansion into the other two areas. NobleTech clients range from small internet start-ups through medium size charities to large international corporations.

In its consultancy work, NobleTech focuses on three main areas, namely internet solutions, complex object-oriented software and custom information systems. Internet solutions covers everything from intelligent user-customisable sites through to full e-commerce solutions, and while the company is not a design specialists it can advise on general web site design. Information systems are database driven applications, often used for managing business processes.

A recent significant project involved the development of a software component for displaying ultrasonic data used in non-destructive testing. Data is updated on the screen in real-time during acquisition and can be viewed in a variety of modes. A current project of interest is the development of a database to synchronise contact details across multiple offices, some of which are based in third world countries without reliable network connections.

"We started looking for new offices last December after our original Oxford offices became too small," comments Nathan Phillips, director at NobleTech. "The move to serviced office space was an obvious choice, but we found it prohibitively expensive in Oxford. Of the sites outside in Oxford, Harwell won on three counts - cost, ease of access and the presence on site of one of our major clients,AEA Technology. NobleTech became an AEA1 approved supplier shortly after incorporation and we have carried out several jobs for them since then."

If you have a software development or training requirement, contact Nathan Phillips at NobleTech on 01235 831746 or via email enquiries@NobleTech.co.uk Alternatively view the web site at <http://www.NobleTech.co.uk>

## UKAEA awards new and some familiar ones

From 1 April there will be some new faces among the people providing UKAEA property management's facilities services at Harwell. New contracts have been let to

- Scion Estates for grounds maintenance;
- ICE for building and civil services;
- Scion Technical Services for mechanical and electrical services;
- ISS for cleaning, waste, post/despatch, main gate reception and site bus services; and
- Scion Technical Services, with the BAA Fire Service, for the site emergency response team.

But it isn't all change as many of the existing personnel will remain.

Stuart Cavannah is already based at Harwell where he will be Scion's divisional director with responsibility for their contracts, working out of B333 TL. Stuart clearly relishes his new role. "We at Scion are obviously delighted to have this chance to expand our activities at Harwell, where we already have a lot of experience. Our Harwell-based team combines long experience of the site with some fresh eyes from outside. This will let us build on existing strengths and also develop new approaches where these are beneficial."

Among Scion's team is Andy Hartley, seconded from the BAA Fire Service as station manager for the Emergency Response Team at Harwell. Andy also has previous experience on a licensed nuclear site. Prior to joining BAA Fire Service he started his fire service career with the Ministry of Defence Fire Service at AWE, Burghfield. "Working on a nuclear licensed site is not new to me," he said. "This was one of the contributing factors taken into account when filling the post. I have spent the last couple of months getting to know the site and many of the people here. There are strong parallels with the way the airport emergency teams operate and plenty of scope for exchanging best practice."

ICE too have experience at Harwell, particularly in nuclear operations areas. Richard Morgan, their managing director, is looking forward to seeing a new aspect of the site. "We are proud of our association with various nuclear operations activities at Harwell. This new contract is an

## facilities contract



(left) Lindsay Smith (contract supervisor, grounds), Rob Beep (contract manager), Melvyn Ambro Hartley (fire station commander), Tom Southall (MD), Stuart Cameron (divisional director), Steve Southall (area manager, estates)



Tom Barkham (site manager), Rob Goss (UKAEA account manager), and Richard Morgan (MD)

opportunity to support some of the more conventional needs of the site, which are equally essential, especially to the success of Harwell as a Business Centre. To this end, we have moved our whole operation to the site."

Another name familiar to Harwell is ISS, who looked after cleaning services on the site some four years ago. Phil Whicker has been appointed as their site facilities manager and will be based in B404. He previously led a team of specialists carrying out building surveys for the government's "Steps" projects and is enjoying the Harwell environment after the rigours of commuting to London. "Our customers are very visible to our customers at the main gate, and the cleaning services to the postal service. We know that these things matter to the people at Harwell and that it is important we provide a positive service."

All these contractors will be linked into UKAEA property management's helpdesk system (on extension 3000), which featured in the last edition of ECHO. Requests and queries about services provided by property management should be routed through the helpdesk in the first instance.

None of this means that Johnson Controls Ltd (JCL), who previously provided these services under the Harwell facilities management contract, will be disappearing. JCL are continuing to provide the facilities services required by AEA1 for their premises, among a number of other contracts at Harwell.

## Free legal advice for Harwell firms

**Do you have business law problems? If so you can attend a free business legal advice surgery at Harwell. New clients are offered an initial interview without charge.**

Davis & Co., founded in 1993, is probably the first virtual law firm in the world. It has access to the expertise of around 50 experienced lawyers, mostly solicitors who have worked for City firms, including Harwell-based Peter Groves. The firm can provide answers to all your business law problems, in such areas as:

- e-commerce
  - IT contracts
  - Distribution and agency
  - Data protection
  - Competition law
  - Employment
  - Consumer law
  - Consumer legislation
  - Partnership
  - Mergers and acquisitions
- Peter will be available for consultation over a cup of coffee on Monday 23 April and 7 May, from 10 am to 11 am in the small meeting room, Harwell Innovation Centre, Building 173, Care Avenue. Please telephone 01235 838515 or e-mail peter.groves@davisco.net to make an appointment. If this time is not convenient please contact him to arrange an alternative appointment for your no-charge initial interview.



# Welfare Fund celebrates its half century

It is 50 years since the inaugural meeting of the Harwell, Chilton and Culham Welfare Fund chaired by Sir John Cockcroft, director of Harwell at the time. The fund was established to give financial help to employees in need and was provided by the voluntary contributions of staff deducted from their salaries.

The very first case to receive help from the fund was a mechanic whose wife had died leaving him to care for four children including a two week old baby. He had lost wages while taking time off during this troubled period and was awarded a grant equivalent to a week's wages.

Another early recipient had lost most of his possessions, including his wage packet, when his house burnt down. He was

granted £5 which was also commensurate to his weekly wage.

Since then the committee has met every quarter unless an ad hoc meeting is called to respond to an emergency. Up to 1999, over £122,000 had been given in the form of 1,200 interest-free loans. In the same period over 1,800 grants totalling £62,000 were made. Together with this financial assistance, the fund offers support and guidance to help people to get back on their feet.

In addition to grants and loans, Christmas awards were made, initially in the form of vouchers from local shops. Later Christmas hampers were provided, usually to employees with families who been off sick for a long period or suffered financial hardship. Nowadays the fund remembers such people at Christmas with a small donation.

## OUT & ABOUT

### Two concerts

Stevenson Choral Society is performing two concerts in April. The first, on Sunday 8 April at 7pm in St Michael and All Angels Church, Stevenage, is in aid of the Team Youth Worker Project. Another will be held on Saturday 21 April at 7.30pm in St Mark's Church, Stevenage, in aid of the church organ fund.

Tickets for both concerts are £6 (including refreshments), with free admission for children under 12. Tickets are available from John Hunt on 01235 935588 or Stevenson Post Office. For more information about Stevenson Choral Society, see the website at [www.stevenson-choral.freezone.co.uk](http://www.stevenson-choral.freezone.co.uk).

### Foot and mouth precautions

In response to local authority guidance following the outbreak of foot and mouth disease, the Herdend Estate has temporarily closed the public rights of way across their land. This includes the Leitchfield Way which joins the Harwell site at the western boundary of the LETP (Liquid Effluent Treatment Plant). The Leitchfield Way is used by many cyclists who are requested to use alternative routes until the closure has been lifted. Until such time as the disease has been contained it would be appreciated if, where possible, the Harwell Estate was not used for walking dogs or any other purpose which may contribute towards spreading the disease.



Welfare fund committee members (from left): Stephen White, chairman; Iqbal Jackson, secretary; and Chilton Consulting representatives, Chris Keenan and Peter Mould (treasurer).

to get away together when the breadwinner had been ill for a while or on GP's advice.

"After fifty years, even though people's circumstances have changed enormously, there is still a need for the fund," comments Stephen White of UKAEA, the present fund chairman. "Timely and targeted help can make all the difference to people in need. The fund is very grateful for the salary contributions made and would like to encourage others to consider contributing."

### Who qualifies?

The fund is available to help retired, serving, or ex-employees of UKAEA at Harwell or Culham, and retired and serving employees of the Rutherford Appleton Laboratory or NRPB. Applications can be made by contacting the fund's administrators and counselling providers, Chilton Consulting, on 01235 433061. All cases are dealt with in total confidence.

## International visitor to Nirex

Dr Mohamed Elbaradei, director general of the International Atomic Energy Agency, visited this country to meet government ministers and members of the UK nuclear industry at first hand.

His schedule included Harwell where he met Nirex staff and discussed the company's activities pending the outcome of a forthcoming review into radioactive waste management. He learnt that despite there being no repository site selection programme in the UK, Nirex is very much involved with waste producers, advising them on waste packaging methodology.

Nirex is also working with all stakeholders, including the public, to discuss the long-term management of radioactive waste in the UK. Nirex is



From left: Jan Priest (UKAEA), Dr Alan Hooper (Nirex), Dr Elbaradei (IAEA director general), Chris Murray (Nirex MD), Susan Hand (DTI), John Freeman (UK Mission in Vienna), John Mathison (Nirex) and Adam Scott (DETR).

## Signs of Spring



In spite of the late arrival of Spring, welcome signs are now being reported at the Culham and Harwell sites.



Marmoth hole at H 521.

Most rooks, ejected by the marmoth clean-up at the Southern Storage Area, to the south of Harwell, are squabbling over handfuls of twigs and rudimentary nests in trees all over the campus. Kevin Nelson (AEAAT) reports that a blue tit has taken up residence in a window fan unit in B551. Species of flies have been seen over Culham and perching high up on the PLUTO reactor building. Woodpeckers are heard drilling into their favourite trees preserved for them on the B521 Mount.

Larger wildlife are out and about with a pair of miniforce deer taking up temporary residence in the garden behind B521. A herd of fallow deer, passing through the Herdend Estate, was spotted grazing near the reactor site fence by John McKeown, chief executive of UKAEA.

"I was delighted to see such a large herd of deer so close to Harwell and I immediately asked Eric Jenkins to come up and capture the country scene on camera. It shows that UKAEA is managing to keep our neighbourly relations on a very tight schedule. We had some very stimulating discussions on the UK situation and Dr Elbaradei made some interesting comparisons with other countries."

## Development partnership launched

An exciting 'partnership for new development' is set to change the face of Harwell International Business Centre. A landmark deal has been agreed between site owner, UKAEA, and Prologis Developments, the organisation that has managed the development of the new Gemini Building on Fermi Avenue.

A business briefing was held on 2nd April to mark the signing of the agreement and give visitors an opportunity to see the quality of the new development. Addresses were given by Robert Jackson MP and by Jason Dally, senior vice president, Prologis Developments Ltd.

Business leaders were also able to meet some of the other organisations who are working to make Harwell a favoured location for the science and technology enterprises.

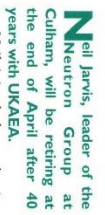
## Suits make perfect 'pierrots'



The suits were ideal for the purpose and made a striking impact, according to director, Tim Weststead.

Wallingford School gave special thanks to UKAEA Fusion at Culham for helping in a recent drama production. The school staged an ambitious production of Joan Littlewood's 'Oh What a Lovely War!'. One scene involved the entire cast on stage, dressed as pierrots. The costume manager, Sue Foster, was particularly delighted when UKAEA agreed to provide 125 disposable white protective suits to the school. She said, "I would like to thank you for your kind donation as it saved me a lot of sewing!"

## Neil Jarvis retires



Neil Jarvis retires after 40 years' service.

Neil Jarvis, leader of the Neutron Group at Culham, will be retiring at the end of April after 40 years with UKAEA. Neil joined the authority to work at Harwell in the Synchrotron group of the Nuclear Physics division.

He became group leader of the newly named Neutron Systems Group in 1982. The synchrotron was closed down in 1979. He was also able to time-share with several commercial projects including systems analysis work with Plessey and an involvement with the industrial physics group at Warrage Laboratory.

He transferred to the JET facility as leader of the Neutron Diagnostics Group.

