

Covers events between 1st March and 31st May 2006

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The launch of GOES-N from Cape Canaveral on a Delta IV rocket. It carries CCDs procured and tested by MSSL for Lockheed and is expected to be operational for 10 years. (Photo courtesy of Boeing)

General

On Wednesday 14th June we had a visit from Alan Kerridge who was a pupil here at Holmbury House some 40 years ago when it was a residential school for children with learning difficulties. He came along with a member of staff from the Pepenbury Community Trust who support people such as Alan to live independently in the community. It was an emotional time for Alan but he was absolutely delighted to have the opportunity to come back and walk around the house and grounds. Remarkably, he remembered the layout of the House well and found his dormitory in The Electronics Workshop on the first floor. Photographs were taken which will be sent to him as a memento of his trip.



Give me a sign... And they did. Eventually...



The more keen sighted members of staff may have noticed that MSSL is now sporting new signs at the north and south gates. Following many months of discussions between MSSL, UCL Estates and Facilities and the UCL Development & Corporate Communications Office, the new signs were installed on 9th June - just in time for the open evening....

New Staff Members

Dr Shashi Pandey has joined the Astrophysics Group to work on Swift science and operations.

Ms Sarah Kendrew is working in the Mechanical Design Office with Berend Winter.

Several summer students have joined MSSL for a few weeks - Zhipeng Li (Lidia/Lucie), Fuyan Bian (Dave Walton/ Graziella), Grace Thomson and Thomas Aumeyr (Andrew Coates).

Sharon Williams is a work experience placement working on Venus Express (Andrew Coates).

Visitors

Chris Harvey [CESR] visited the PEACE operations team where Cluster Active Archive development issues were discussed.

Appointments

Louise Harra and Kinwah Wu - promotion to Professor.

Dave Linder - promotion to Principal Research Fellow Grade III.

Mathew Page and Lidia van Driel-Gesztelyi - promotion to Reader.

Prizes and Awards

Len Culhane has been awarded a Leverhulme Emeritus Fellowship for work on Solar Flares and CMEs

using data from Solar-B, STEREO and other missions. Starting on 1st October 2006, the Fellowship will be for two years and will fund travel and meetings organization in support of the research programme.

PhDs Awarded

Steven George: United Kingdom Windspeed: Measurement, Climatology, Predictability and Link to Tropical Atlantic Variability, April 2006.

Robert Fear: Cluster Multi-Spacecraft Observations of Flux Transfer Events, March 2006.

Grants and Contracts awarded

Climate Extremes: £300k from July 2006 to June 2008 to further develop the Tropical Storm Risk project (www.tropicalstormrisk.com) with a view to commercialisation. Sponsored by Benfield, Royal&SunAlliance, Crawford & Company and UCL. Mark Saunders PI.

Climate Extremes: £42k from April to October 2006 to further develop the EuroTempest project (www.eurotempest.com) for commercialisation in October 2006. Sponsored by Benfield and Royal&SunAlliance. Mark Saunders PI.

£10,000 - PPARC Small Award for education related to International Heliophysical Year. Lucie Green.

£10,000 - PPARC Small Award for setting up two mobile workshops for local community youth space activity days and evenings. Tracey Poole and Ian Hepburn.

£130k - PPARC – hyperspectral camera system – CREST award.

Proposals Submitted

ExoMars PanCam (PPARC).

Mission Status and Developments

Aurora/ExoMars – Part B (management) of the Instrument Information Package submitted to ESA. PPARC panel presentation, May 10.

Cassini-Huygens – 3 more Titan encounters in this period. Papers were presented at EGU, Vienna. Talks by Hazel, Gethyn and Andrew were presented at the CAPS team meeting (Budapest, April).

Mars Express – Talks were presented at EGU and at the ASPERA team meeting, Kiruna, (Yasir Soobiah, Dhiren Kataria, Andrew Coates, March).

Solar-B EIS - successfully passed the spacecraft level thermal vacuum test, this was the last major hurdle in the spacecraft programme. Launch is still on track for 23rd September.

Smart X-ray Optics - The Smart X-ray Optics research programme had its kick off meeting at UCL on 14th March. This project, funded on a Research Council's UK basic technology grant, is hoping to push the resolution of X-ray optics to close to the diffraction limit. The programme involves teams from UCL, MSSL, Kings College London, Grays Cancer Institute, University of Birmingham, University of Leicester, CCLRC Daresbury and the Scottish Micro-Electronics Centre. Alan Smith is a Co-I and the whole programme is being managed by Ady James in the Technology Management Group.

Venus Express – Venus Express orbit insertion (11 April), reached its final orbit (May) and started science operations.

News from the Groups

High resolution X-ray spectroscopy workshop <http://www.mssl.ucl.ac.uk/~gbr/workshop2/>

On 27th and 28th March MSSL hosted an international workshop on high resolution astronomical X-ray spectroscopy, with a total of some 70 participants. This was a follow-up to a similar meeting in 2002: four years ago we were reviewing the very novel data returned by the spectrometers onboard XMM-

Newton and Chandra; the field was young and there was a feeling that we were still learning to handle a new type of observation, with huge investigative potential. This year's event has allowed experts in X-ray spectroscopy to take stock of what has been achieved, to review current understanding, consider how far we have got and how to build on it, especially in view of future opportunities, such as the ESA's X-ray Evolving Universe Spectroscopy (XEUS) mission and NASA's Constellation-X (Con-X).

Astronomers are now familiar with high resolution X-ray spectra provided by dispersive spectrometers. A whole new source parameter space has been opened up to investigation and exciting new insights have been revealed into the physics and energetics of X-ray emitters and absorbers. Soon further advances in this field will be provided by non-dispersive spectrometers, with similar high resolution to current instrumentation and with enhanced sensitivity.

We at MSSL are set to play an important part in their development, with our cryogenic programme, so organising the workshop was a good way 'to stamp our name on the map'!

Arvind Parmar, ESA's XEUS Study Scientist, discussed the mission. According to current plans XEUS will be a large free-flying X-ray observatory, consisting of two spacecraft (one carrying the mirror, the other carrying the detectors) in formation, flying 50 metres apart. It is designed to search for the first giant black holes that formed in the Universe over 10,000 million years ago. NASA's Con-X Project Scientist, Nick White, also provided an overview of the plans for the Con-X observatory; a combination of several X-ray satellites to orbit in close proximity to each other and work in unison to generate the observing power of one giant telescope. It is interesting to note that both Arvind and Nick are ex-MSSL students - clearly the Laboratory gave them a good grounding and prepared them to fly high in the world of space research.

These talks were among more than 30 given at the meeting, abstracts of which can be seen at the Website given above, together with some of the proceedings already submitted, and pictures of the occasion (one of which is included here).



Louisa Bradley reports on the successful launch of the GOES-N spacecraft.

On 24 May 2006 MSSL celebrated the successful launch of a satellite carrying CCDs that were procured and tested at MSSL. The satellite, called GOES-N (Geostationary Operational Environmental Satellite), is one of a series of satellites which monitors the Sun, Earth's climate and the near-Earth environment.

MSSL was responsible for the procurement of the CCDs, from e2v technologies, and their characterisation for the SXI instrument (Solar X-ray Imager) on behalf of Lockheed Martin. Over 40 CCDs were tested in the MSSL cleanroom by Dave Walton and Louisa Bradley before Lockheed made their selection for flight. The test system and electronics were designed by Dave and Phil Thomas and were built at MSSL. Tony Dibbens was responsible for the Product Assurance and Alan Smith was responsible for MSSL's overall role in the SXI programme.

In February 2006 MSSL was given a Superior Performance award by Lockheed in recognition for the outstanding work by MSSL staff on the SXI instrument (award can be seen on the wall outside the library).



Publications - Refereed

S & CP authors are shown in upper case

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Media Broadcasts and Features

Andrew Coates gave more than a dozen radio interviews covering Mars Reconnaissance Orbiter, Cassini Enceladus results, US space priorities, the total Solar eclipse and Venus Express.

Press Releases

PPARC press conference on Venus Express arrival (including talk by A.Coates), 11 April.

Outreach

National Science Week - As part of National Science week we ran an event on 15th-16th March at Sutton Grammar School. We reached 1020 students over the two days and provided a variety of talks ranging from the solar system to black holes and also space careers. Each student attended a workshop which covered the areas of the solar system, space engineering, telescopes and rockets. We had very positive feedback from the teachers and students who thoroughly enjoyed the event.

On 14th March an evening Space Show and exhibition for the general public was also held at Sutton Grammar School. The exhibition included fun activities for children such as making parachutes and sundials, and was opened early for over 60 cubs and scouts to attend.



A big thank you to everyone that helped at this event, it was a great success!!

On the launch pad - John Coker and who's this in the tin helmet?

Solar Eclipse Events - Lucie Green and Tracey Poole visited Cardinal Pole School in Hackney for the partial solar eclipse on 29th March. They ran a day of Solar eclipse

activities which included a Solar eclipse talk and several spectrometer workshops.

Glyn Collinson and Ken Phillips traveled to Libya for the Solar eclipse as part of an event run by the British Council. They ran several scientific experiments during the eclipse and gave talks locally.

On 13th March Tracey Poole attended the 2006 Martian Clock competition at the National Maritime Museum as a member of one of the judging panels. The competition was run by the Young Engineers and the Worshipful Company of Clockmakers and sponsored by Seiko.

As part of National Science Week Andrew Coates spoke at the National Maritime Museum about 'Exploring Mars and comets; looking for life and making an impact' on 18th March.

On the 20th March Alice Breeveld and Tracey Poole visited St. Roberts Southwell School for a Space Day where the children were shown what a comet was made of and also spent the day making and testing Mars Landers.

Tracey Poole attended a day's preparation meeting on 28th March at the Girl Guiding UK headquarters in London to help produce and advise on activities that will be produced as part of a National Guiding Space resource called 'Go For It! Space' that will be in print in September.

Lucie Green travelled to Bratislava on 22nd April to take part in an event with the British Council on 'What use is space?'. On the 2nd May she organised a set of talks on the research and engineering at MSSL and a tour of the department for members of Delft University of Technology.

School talks/demonstrations were also given by:- Elizabeth Auden (Riverside Primary School & Wallace Fields School, West Ewell), Andrew Coates (The Ashcombe, Dorking; Collyer's College, Horsham; Woodcote House School, Windlesham), Alan Smith (Victoria Dock Primary School, Hull), Lucie Green (Busbridge Primary School, Godalming), Tracey Poole (Sutton Coldfield Girls School, Birmingham) Dave Walton (Collyer's College, Horsham).

We have reached over 3000 members of the public through these events.

If you are interested in getting involved with "outreach" please contact Lucie Green or Tracey Poole.

Other News

The TSR (Tropical Storm Risk) project has been shortlisted (final 4) for the British Insurance Award 2006 for Risk Management. This is for their advances in hurricane modelling and forecasting. (Mark Saunders, Adam Lea, Peter Yuen and Ben Lloyd-Hughes).

Mark Saunders presented a lecture 'Hurricanes and global warming' to the UCL Chemical and Physical Society on 7th March 2006.

Claire Foullon, Ilya Alexeev, Paul Henderson, Andrew Walsh, Hina Khan, Branislav Mihaljcic and Iryna Rozum participated in the MIST Young Scientist Meeting, 3rd May. Future of the STP society has been discussed.

Next Issue

The next issue of the Department of Space and Climate Physics Newsletter (Volume 4, Issue 2) will be published in September 2006. This will cover activities from 1 June 2006 to 31 August 2006.