



The Newsletter - Volume 7, Issue 1

2nd July 2009

Covers events between 1st March 2009 and 31st May 2009

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New Staff Members

Asha Jhummu has joined the Department as assistant administrator in Taviton Street.

The Solar Group has been joined by Sergii Zharkov and Santiago Vargas Dominquez; David Williams has returned from Japan.

Mikako Matsuura recently joined UCL's Institute of Origins as a post-doctoral associate within P&A and S&CP.

Craig Leff has joined the Planetary Science group as the new ExoMars project manager. Andrew Griffiths will continue to work on ExoMars in the instrument scientist role.

Visitors

Prof. Sam Finn from Pennsylvania State University gave a series of five lectures on Gravitational Wave science and its relation to the more traditional astrophysical research in the electromagnetic regime (3-6 Feb). The series was especially targeted at MSSL PhD students, although quite a number of MSSL staff showed interest as well. Copies of the lectures can be accessed at

http://www.mssl.ucl.ac.uk/~gbr/GW/GW_astrophysics.html

James Slavin (NASA/GSFC) visited the Space Plasma group for two days, ahead of participating in the MSSL review on April 6. He gave a seminar entitled, "MESSENGER Observations of Magnetic

Reconnection in Mercury's Magnetosphere" and had scientific discussions with members of the Plasma Physics group.

Members of the Institute of Physics visited on 29 April; they were very interested in hearing of and seeing some of the past and present MSSL endeavours.

Frank Cray visited the Planetary Science group.

Prizes and Awards

Congratulations to Alison Wallace who won a UCL Graduate School Bursary to attend the Cheltenham Science Festival in June.

Sheila Kanani was awarded £450 by the RAS to attend "Magnetospheres of the Outer Planets" meeting in July 2009.

Sharon Tsang was awarded ESA/STFC funding to go to the combined ESLAB and ASPERA meeting.

Appointments (e.g. Editorial Boards or Committees)

Allende Prieto has been appointed to the Science Organising Committee (SOC) of IAU Commission 36 (Theory of stellar atmospheres), and to the SOC of the IAU General Assembly Joint Discussion No. 10: 3D views on Cool Stellar Atmospheres (<http://jd10.obspm.fr/>).

Colin Forsyth was elected to the MIST Council. MIST aims to promote the interest of UK scientists investigating Sun-Planetary systems and the MIST council organises these activities as well as the bi-annual MIST meetings.

Grants and Contracts Awarded

STFC grants:

- "PPRP funding for MSSL principal investigator involvement in the Solar Orbiter solar wind analyser suite during the cosmic visions assessment phase" (Principal Investigator: Professor C.J. Owen) to cover a 10 month period from 1 Feb 2009.
- "UCL/MSSL involvement in studies for Cross-Scale (Cosmic Visions)" (Principal Investigator: Professor C.J. Owen) to cover a 3 month period from 1 April 2009.

Telescope/Satellite Time proposals/awards

C. Allende Prieto is PI on an ESO VLT Observing Proposal, H-Band High-Resolution Spectroscopy of Neutron-Capture Enhanced Stars, Period 84A

(40hr).

Roberto Soria is PI or co-I in several Chandra proposals (outcome known in late July): X-ray populations and hot gas in the M83 galaxy; colliding galaxies NGC7714/15; monitoring of M31; spectroscopic follow-up of select ULXs; circum-nuclear star formation in the galaxy NGC2903; a microquasar in the galaxy NGC7793; proper motion of Chandra sources (archival).

Roberto is also PI for an Australia Telescope Compact Array proposal, to study the microquasar jet in NGC7793 (outcome known in July).

Mission Status and Developments

Cassini - CAPS still performing well. CAPS team meeting in Toulouse attended by CSA, GRL and AJC.

Cluster – All the PEACE instruments are functioning well and collecting data. The constellation was reconfigured to make the first multi-spacecraft measurements in the auroral acceleration region.

Cosmic Visions - EJSM – MSSL submitted declarations of interest for plasma instrumentation and for penetrators. A technology workshop was held in Noodwijkerhout (AJC, DOK, RAG, TEK attended). AJC attended an EJSM JSDT meeting in Paris.

Cross-Scale – Members of the laboratory continue to be engaged with a number of technical activities on Cross-Scale as part of the assessment phase for Cosmic Visions. Work continues on the definition phase of the mission (Andrew Fazakerley leads the proto-consortia for the electron spectrometer instruments). They are engaged with the preparation of the ESA 'yellow book' assessment report for Cosmic Vision.

Double Star – No science data had been received from TC-2 in this newsletter period. The spacecraft is experiencing power difficulties in relation to its uncontrolled spin axis tilt but the project has not yet declared the mission to be at an end.

EJSM - Some members of the Plasma group supported preparation of a Declaration of Interest document for the ESA L-Class EJSM mission, led by Andrew Coates.

ExoMars - Andrew Coates, Andrew Griffiths, Barry Hancock and Peter Yuen attended the PanCam 3D vision workshop at Aberystwyth University, 18-20 May. AJC was invited to represent ExoMars PanCam at the Mars Express SWT in ESOC, Darmstadt, 26-27 May. The second payload confirmation review was held and PanCam is

confirmed in the selection. The new mission is due for launch in 2016 with a reduced payload, with ESA/NASA life and network science missions to follow in 2018 and 2020.

Kua-fu – No developments to report.

Solar Orbiter - ESA announced the selection of the payload for Solar Orbiter in March. MSSL was selected as the PI-Institute for the Solar Wind Analyser consortium (PI – Chris Owen, consortium PM – Chris Brockley Blatt, consortium instrument scientist – Dhiren Kataria, consortium system engineer – Barry Hancock). A first meeting of the SWT was held on April 16-17, and a second as a follow up to the Solar Orbiter workshop held in Sorrento, May 25-29. We continue to work with SWA partners as part of the definition phase of the mission, and are engaged with the preparation of the ESA 'yellow book' assessment report for Cosmic Vision.

Venus Express - ASPERA and ESLAB (Venus/Mars/Earth comparison) meetings held at ESTEC. AJC and SMEW attended.

Publications - Refereed

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Publications - Non-refereed

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PhDs awarded

Rebecca Smith had her PhD viva on 4 March. She passed with flying colours, with only a few corrections to be made to her thesis (which she

completed soon after).

Invited Talks and Conferences

Andrew Coates, Shocks at comets and beyond (invited), presented at 8th International Astrophysics Conference: Shock waves in space and astrophysical environments, May 1 2007, Kona, Hawaii.

Ken Phillips gave a course of lectures at the University of Graz on solar spectroscopy in May. The PowerPoint files for the lectures (in English) are on

http://www.mssl.ucl.ac.uk/~kjh/GRAZ_LECTURE_S/

Bernhard Kleim - Modelling Coronal Mass Ejections - Where Do We Stand? Univ Cambridge, DAMTP Astrophysics Seminar, 18 May 2009.

Roberto Soria attended a conference on intermediate-mass black holes at the University of California, Irvine (March 24-27), and gave a presentation on their accretion states.

All talks now available online as PDF files, <http://www.physics.uci.edu/IMBH/agenda.html>

Roberto visited Tsinghua University (Beijing) in April, where he gave a seminar to the astrophysics group.

Chris Owen attended the Solar Orbiter workshop in Sorrento, Italy, May 25-29, and gave an invited presentation on the selected Solar Wind Analyser suite for the mission.

Chris Owen participated in a meeting of an ISSI forum in Bern, 24-25 March 2009 to debate the current status and potential future evolution of the physics of Earth's magnetosphere after 50 years of intense research activity. Twenty-four scientists from 12 different countries were invited.

Andrew Fazakerley and Sandrine Grimald attended the EGU General Assembly in Vienna. Andrew presented a talk on our studies for electron spectrometers for Cross-Scale.

Chris Owen, Colin Forsyth, Andrew Walsh, Kimberley Steed and Robert Bedington attended the Spring MIST meeting as part of JENAM in Hatfield. Talks were given on current and future magnetospheric missions, modeling multi-spacecraft analysis techniques, a case study of substorm onset and magnetic clouds in the solar wind.

Chris Owen, Andrew Fazakerley, Colin Forsyth, Sandrine Grimald, Natasha Doss and Segheen Beyene attended the 17th Cluster Workshop in Uppsala, 12-15 May. Andrew presented a detailed

case study on substorm onset, work which was led by Andrew Walsh and Segheen presented a case study of a magnetic flux rope in Earth's magnetotail. Sandrine gave a talk on magneto-seismology using Cluster.

Chris Owen, Andrew Fazakerley and Andrew Walsh attended the Cross-Scale workshop in Calabria, Italy, March 9-11.

Sandrine Grimald gave seminars on her recent work at LPC2E (Orléans) and CESR (Toulouse) in March and April.

Chris Arridge attended the MAPS workshop, San Antonio, 1-2 April. MSSL authors were involved in 10 presentations.

The NAM/JENAM/MIST meeting in Hertfordshire, 20-23 April, was attended by seven members of the Planetary Science Group who were involved in 9 presentations.

The EGU meeting in Vienna, 19-24 April, was attended by Annie Wellbrock and Sandrine Grimald with MSSL staff involved in 11 presentations.

The ESLAB symposium on comparative planetology: Venus, Mars, Earth, ESTEC, 11-15 May was attended by Andrew Coates and Sharon Tsang with 3 papers presented.

Media Broadcasts and Features

- Teachers' TV program made about Sheila Kanani - an insight into doing science outreach plus a section on comet making at a school. The programme will be aired in November.
- Sheila gave an interview for the movie, "We Are Astronomers"; a planetarium show which will be shown in 7 planetaria in the UK for the International Year of Astronomy.
- Teachers TV filmed Robert Bedington using the thermal vacuum chamber in room G11 for a item on what real scientists do.
- Andrew Coates gave several interviews on the Kepler launch - Sky News Radio, BBC News, BBC World Service The World Today, BBC R4 Today Programme and The Sunday Times. He also had a discussion on BBC R5 Live Breakfast on space exploration with Colin Pillinger.

Outreach

Sheila Kanani gave talks at The Tiffin Girls School (on careers); Hollyfield School and Norbury Manor (on Cassini science and Saturn) and has a

Researchers in Residence placement at Sutton High School, starting in September 2009.

Robert Bedington, Sheila Kanani, Nick Seymour, Sharon Tsang and Robert Bedington presented talks at UK Space Conference on 3 April on Cassini, Herschel, Venus Express and Miniaturised plasma instruments respectively.

Robert Bedington ran an evening of Rockets and explosions for Loki Scout Network at MSSL on 27 May.

Roberto Soria gave a public lecture entitled "Are black holes really black?" at UCL Science Centre, on May 27.

Andrew Coates gave a National Science Week talk at St Johns School, Northwood, on Exploring the solar system, 10 March. He also gave a talk on, "Mars exploration: Europe's next step" to Mole Valley Geological Society, 9 April.

Other News Items/Activities

A High Resolution X-ray Spectroscopy School and Workshop were held at MSSL, on 17-18 March and 19-20 March 2009 respectively (Graziella organised them, with much help from Alex Blustin, now in Cambridge, and very dedicated support by the MSSL Office, catering and computing).

The School aimed at introducing PhD students and young postdocs to the subtleties of analysing high resolution, mainly grating, spectra of cosmic sources, and was a first for MSSL; it comprised both lectures and hands-on exercises with the spectral fitting code SPEX; the Workshop was the third in a series hosted by MSSL, typically every two years, and provided a review of the current standing of high resolution research, with an eye to future mission opportunities.

Both were well attended and successful, with 30 participants to the School and about 70 to the Workshop. Details, copies of the presentations and photos can be seen at <http://www.mssl.ucl.ac.uk/~ajb/workshop3/>.

The Russian solar Coronas-Photon spacecraft that was launched on January 30 is working well, and the SphinX instrument (Ken Phillips, Co-I, Janusz Sylwester PI) is doing a great job in picking up X-ray emission even in the quietest periods of this deep solar minimum.

Next Issue

The next issue of The Newsletter (Volume 7, Issue 2) will be published in September 2009. This will cover activities from 1 June to 31 August 2009.