



The Newsletter - Volume 6, Issue 2

6th October 2008

Covers events between 1st June 2008 and 31st August 2008

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General

We are pleased to welcome four new STFC-funded, PhD research students. Missagh Mehdipour, Awat Rahimi and Katherine Tugwell will join the Astrophysics Group whilst Ehsan Pedram will become a member of the Solar and Stellar Physics Group.

Congratulations to Jenny Barnes who was married in August.

The annual MSSL croquet tournament, which has been running throughout the summer, was won by the “Planetary A-team” after a hard fought final match against “Climate Extremes”.

The picture shows Gethyn Lewis and Neville Shane – The Planetary A-Team

New Staff Members

Nicholas Seymour started as a post-doc at MSSL after many years abroad working in Paris and Los Angeles. His research interests concern galaxy evolution and obscured AGN at high redshift.

Caroline Parr joined MSSL in June to work part-time on the Gaia DPAC software development project.

Visitors

Dr Benoit Lavraud, from CESR, Toulouse, France, visited the Plasma Group for collaborative work and, as part of the Plasma Group Seminar Series, gave a seminar on 'The altered solar wind - magnetosphere interaction at low Mach numbers: Coronal Mass Ejections' (21 July).

The planetary group were visited by Patricia Schippers (CESR, Europlanet grant; seminar 24 June), Dr Cesar Bertucci (Imperial/Argentina, 6 August, seminar), Prof Roger Yelle (University of Arizona) Dr Veronique Vuitton (U.Arizona and LPG Grenoble) Dr Panayotis Lavvas (LPG Grenoble).

During the summer MSSL was host to 4 summer students, 1 Nuffield Foundation student and 8 work experience students.

Prizes and Awards

On 17 June, Professors Len Culhane, FRS and Chris Rapley, CBE were awarded UCL Fellowships. This award is for former UCL students who have attained distinction in the arts, literature, science or public life. Len is currently Emeritus Professor in Space & Climate Physics (MSSL) Chris is the Director of the Science Museum, London and was formerly Director, British Antarctic Survey.

Jenny Rourke (nee Barnes) was the 2008 winner of "I'm a Scientist Get Me Out of Here!" (see later section on Outreach).

Roberto Soria was seconded to Tsinghua University (Beijing) from August 1 to October 1, to complete a UK-China Fellowship grant.

Promotions

Chris Owen has been promoted to Professor of Physics.

Ken Phillips has been made a visiting professor at MSSL.

Appointments (e.g. Editorial Boards or Committees)

Chris Owen was reappointed to the RAS Library Committee for a second 3-year term.

Proposals

Several of MSSL staff attended the Projects Peer Review Panel meeting in Glasgow on 24-26 June in order to defend the numerous Cosmic Vision grant applications to STFC with which the Laboratory is involved. An updated version of our bids for the Laplace/Tandem mission was submitted to STFC on 6 August.

ESA have also asked for further clarifications/updates of our Cosmic Vision instrument proposals, which have required some staff effort over the summer.

Graziella Branduardi-Raymont is Co-I of a funding bid submitted to the Leverhulme Trust for Exoplanet research (in collaboration with the Physics and Astronomy Department, UCL).

A proposal for Reprocessing of ERS Altimeter data "Reaper" has been submitted to ESA (Steve Baker).

Grants and Contracts Awarded.

- STFC - 'science in society' grant (£750) for a schools outreach project based on gravitational waves. Laura Pickard, with help from Lucie Green, has been working on this. The grant will cover materials to construct two pieces of demo equipment (currently being built by John Rose), and travel costs to 10 schools.
- STFC - a 'bridging' grant to continue studies on the particle instrumentation for Cross-Scale (an ESA Cosmic Visions candidate mission) as the full proposal is still to be considered by STFC/PPAN (PI Chris Owen).
- STFC - ExoMars PanCam 2008-9.
- STFC - interim funding grants for Marco Polo and Laplace/TANDEM.
- ESA - Sentinel 3 IPF2 - currently in pre-Kickoff negotiations (PI S.Baker).

Telescope/Satellite Time Awards

Roberto Soria, Doug Swartz (MSFC) and Allyn Tennant (MSFC) have been awarded 76 ks of Chandra time for the project "The Most Luminous ULXs".

Mission Status and Developments

Cassini - CAPS is working well. Cassini started its extended mission (Equinox) on 1 July 2008. This will include several additional Enceladus and Titan flybys. A Cassini-CAPS team meeting in Aberystwyth was attended by Andrew Coates, Chris Arridge Gethyn Lewis, Geraint Jones, Sheila Kanani. Many science meetings and presentations.

Cluster - The PEACE instruments on all four Cluster spacecraft are functioning well and collecting data.

Cosmic Visions - Significant activity on payload definition for Laplace, Tandem and Marco Polo. Andrew Coates attended JSDT meetings on Tandem/TSSM.

Cross-Scale - Chris Owen is on the ESA Science Study Team for Cross-Scale. The group met on 2 and 3 June to finalise the latest issues of the Science Requirements Document and Payload Definition Document for the ESA-sponsored industrial studies which began on 1 June. STFC has extended our bridging funding for studies of the particle instrumentation for Cross-Scale (PI - Chris Owen) until the end of the year - despite having presented the case to PPRP in Glasgow on 26 June, PPAN will not consider the UK Cosmic Vision proposals until November. MSSL also responded to an ESA call for 'Declarations of Interest' in Cross-Scale Instrumentation with a leading role in the electron spectrometers (PI - Andrew Fazakerley) and participating roles in the ion spectrometers and the common payload processor.

Cryostat-2 - launch scheduled officially for "2009" - probably Autumn. The figure shows CryoSat-2 undergoing "mass property data acquisition" as part of the ground testing.



Double Star - TC-2 continues to operate.

ExoMars - Successful PanCam pre-PDR meeting and ExoMars mast meetings held at MSSL, 15-17 July. Recosting submitted to STFC. Andrew Coates and Andrew Griffiths attended ExoMars UK meeting at Imperial 10 June. PanCam team and a test camera setup (wide angle and high resolution cameras) participated in AMASE 2008 in Svalbard in August.

Solar Orbiter - We continue to wait on news of our proposals for the Solar Orbiter Solar Wind Analyser Consortium (PI Chris Owen). The STFC PPRP Visiting Panel for Solar Orbiter met on 20 June 20 and has subsequently sent its final report to PPAN. It appears that announcements on both the STFC and ESA proposals are now being delayed due to the recent uncertainty in the financial status of the ESA science program. Chris Owen attended a 'PI interview' with the Solar Orbiter Project Manager, his deputy and the Solar Orbiter Project Scientist at ESTEC on 1 July to informally discuss various issues relating to our proposal.

Venus Express - ASPERA-4 working well. Periapsis lowering over the summer - no problems for ELS. Operations grant proposal in preparation. Scientific analysis underway.

Publications - Refereed

A. Published

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Invited Talks and Conferences

Graziella Branduardi-Raymont was invited speaker on 'Astronomy from Space' at the annual London International Youth Science Forum on 1 August. A group of international students attending the Forum also visited MSSL on 29 July.

Andrew Coates talked on, 'What can Venus, Mars and Titan tell us about Earth', at UCL Science Club, 19 June.

Lucie Green and Laura Pickard both attended the Lindau conference of Nobel laureates from 29 June - 4 July. Their interviews with some of the Laureates will be published later.

Laura Pickard gave lectures at this year's International Conference of Physics Students in Krakow and at the Peruvian Simposio Nacional de Estudiantes de Física in Lima, Peru. She talked about gravitational waves in general and presented a number of results. A grant to cover some of the costs of her trip to Peru was awarded by the Institute of Physics' C R Barber Trust.

Roberto Soria gave a seminar at Birmingham University, June 12.

Conference and Workshop Presentations

Naval Research Laboratory, Washington, DC.

Bernhard Kliem gave two seminars on flux rope instabilities in solar eruptions.

Cumberland Lodge, 'Exploration of the Solar System', 7-9 July Talks were given by:

- Graziella Branduardi-Raymont - X-ray views of the Solar System.
- Claire Foullon - Evolution of Kelvin-Helmholtz Activity on the Dusk Flank Magnetopause.

Asia-Pacific Region IAU Meeting, Kunming (China), August.

- Roberto Soria gave a talk entitled, "Search for the brightest high-energy pulsars".

Titan Aeronomy workshop, ISSI, 2-4 June 2008.

Andrew Coates and Anne Wellbrock attended.

- Coates, A.J., G.R. Lewis, D.T. Young, J.H. Waite Jr. F.J. Crary, A. Wellbrock, Negative ions at Titan: update from CAPS ELS.

Titan after Cassini-Huygens symposium, Corpus Christi, Texas, 6-11 July 2008.

Andrew Coates and Anne Wellbrock attended the Titan book symposium and presented 2 papers; planetary group representation on 4 other papers and 2 book chapters. Andrew Coates is co-author on one of the book's chapters.

- COATES, A.J., G.R. LEWIS, A. WELLBROCK, D.T. Young, F.J. Crary, J.H. Waite Jr., Heavy negative ions in Titan's ionosphere: altitude and latitude dependence.
- WELLBROCK A., A.J. COATES, G.R. LEWIS, B. Magee, K. Mandt, J. Westlake, F.J. Crary, D.T. Young, J.H. Waite Jr., E.C. Sittler, G.H. JONES, Scale heights of negative ions in Titan's ionosphere.

Asteroids Comets Meteors 2008, Baltimore, USA, 13-18 July 2008.

Geraint Jones attended.

- JONES, G. H., J. S. Morrill, K. Battams, M. J. Owens, R. A. Howard, G. A. Stenborg, C. M. Lisse, Comet C/2006 P1 (McNaught): Observations of dust and neutral species by the STEREO and SOHO spacecraft, presented at JONES, G. H., T. Witchalls, interplanetary field enhancements: the solar wind signatures of cometary dust trails.
- Rees, A., G. H. JONES, A. Balogh, in situ Ulysses spacecraft observations of cometary ion tails' magnetic field structure.

COSPAR scientific assembly, Montreal, Canada, 13-20 July.

Anne Wellbrock attended and presented a paper. Planetary group representation on 5 other papers.

- Crary, F., A.J. COATES, J.H. Waite, D.T. Young, T.E. Cravens, Heavy and negative ions at Titan measured by Cassini CAPS.
- WELLBROCK A., A.J. COATES, G.R. LEWIS, B. Magee, K. Mandt, J. Westlake, F.J. Crary, D.T. Young, J.H. Waite Jr., E.C. Sittler, G.H. JONES, Scale heights of negative ions in Titan's ionosphere.

Saturn After Cassini-Huygens Symposium, Imperial College London, 28 July – 1 August.

Andrew Coates, Chris Arridge, Geraint Jones and Sheila Kanani attended "Saturn after Cassini" book symposium presenting 4 papers: planetary group representation on 5 others. Andrew Coates, Chris Arridge, and Geraint Jones will be co-authors on three of the book's chapters.

- C.S. ARRIDGE, N. André, A.J. COATES, M.K. Dougherty, C.M. Jackman, K.K. Khurana, H.J. McAndrews, C.T. Russell, E.C. Sittler, Periodicities in Saturn's magnetotail: Plasma sheet motion, phase relationships, and spiral origins.
- SHEILA KANANI, C.S. ARRIDGE, G.H. JONES, A.N. FAZAKERLEY, H.J. McAndrews, S.M. Krimigis, N. Sergis, M.K. Dougherty, A.J. COATES, D.T. Young, Modeling the size and shape of Saturn's magnetopause using dynamic pressure balance.
- A.J. COATES, G.R. LEWIS, G.H. JONES, A. WELLBROCK, F.J. Crary, D.T. Young, R.E. Johnson and T.A. Cassidy, Negative Ions in the Enceladus Plumes.
- G. H. JONES, A. J. COATES, S. KANANI, C. S. ARRIDGE, D. Young, F. Crary, The structure of Enceladus's plume as observed by Cassini CAPS-ELS.
- Graziella presented a poster.

Mapping Magnetospheric Regions at Saturn: A Mini Jovian Analogue?, ISSI Bern 18-22 August.

Chris Arridge was co-organizer of this workshop meeting, coordinating several discussions that will lead to a publication.

Media Broadcasts and Features

Laura Pickard, with colleagues from the International Association of Physics Students, interviewed Sir Patrick Moore. Their interview is available to read at <http://www.iaps.info/media/jiaps-2008-2.pdf>.

Andrew Coates quoted in Chemistry World, on Phoenix at Mars, August.

Outreach

Andrew Coates talk on Exploring Mars, and presentation of Brunel engineering awards, at Sackville School, East Grinstead, 3 July.

Sheila Kanani gave a talk entitled "From Earth To Saturn Onboard the Cassini Spacecraft": at St. Philomena's Girls School, Cheam; Hollyfield School, Surbiton; Sandhurst School, Farnborough.

Sheila also taught for 2 weeks at a residential summer camp called Space School UK (www.spaceschooluk.org). She taught children about microgravity and about Saturn but also looked after them during the fortnight.

Jenny Rourke (nee Barnes) was the 2008 winner of "I'm a Scientist Get Me Out of Here!", which was an online public outreach project with up to 40 schools across the country. "I'm a Scientist" runs through an interactive website where schools can choose to sign up and have a 2 week period to "meet" the scientists, submit questions, take part in online chats and ultimately to vote for who they want to win the prize of £500 to promote their work. Jenny was up against 4 other scientists from mainly biomedical backgrounds - but the students found the climate change debates extremely interesting and this helped to secure votes over the other scientists. "I'm a Scientist" will hopefully be running again next year - if you are interested in getting involved (from PhD to Professor) please contact Gallomanor for information on next year's plans.

Roberto Soria gave a talk at a career orientation day at Collyer's school, Horsham.

Other News Items/Activities

'Summer Student Lectures', 1 August, UCL – oral presentation given by Nick Wardle, Nuffield and RAS summer student supervised by Claire Foulon.

Next Issue

The next issue of The Newsletter (Volume 6, Issue 3) will be published in December 2008. This will cover activities from 1 September 2008 to 30 November 2008.