



The Newsletter - Volume 8, Issue 1
28th June 2010

Covers events between 1st March 2010 and 31st May 2010

List of Contents

General.....	- 1 -
New Staff Members.....	- 1 -
Visitors.....	- 1 -
Prizes and Awards.....	- 2 -
Appointments (e.g. Editorial Boards or Committees).....	- 2 -
Grants Awarded.....	- 2 -
Proposals Submitted.....	- 2 -
Telescope/Satellite Time Awards/Proposals.....	- 2 -
Mission Status and Developments.....	- 2 -
Publications – Refereed.....	- 3 -
Publications Non-refereed.....	- 5 -
Invited Talks and Conferences.....	- 5 -
Media Broadcasts and Features.....	- 7 -
Teaching.....	- 7 -
Outreach.....	- 7 -
Press Releases.....	- 7 -
Social Club.....	- 8 -
Next Issue.....	- 8 -

General

MSSL is holding an Open Day on Saturday September 4 from 14.00 to 17.00. Free tickets are available from ead @ mssl ucl ac uk or 01483-204100. There will also be an evening event where like-minded business people can find out about the space science being carried out at MSSL and shape our work in the local community.

New Staff Members

We have been joined by Gerardo Saldana who will work with Peter Muller and George Seabroke who will work with Mark Cropper.

Visitors

Dr. John Podesta (LANL) visited the Space Plasma Physics Group to work with Andrew Fazakerley on parallel propagating whistler modes in the solar wind. During his visit he gave a seminar entitled “Detection of whistler mode waves in the solar wind using Cluster”.

Wendy Tseng, Meredith Elrod (U.Virginia), Patricia Schippers (U.Iowa) and Abi Rymer (JHU-APL) visited the MSSL Planetary Science Group in the days following the CAPS team meeting.

Prizes and Awards

Robert Bedington was awarded a bursary from the Worshipful Company of Scientific Instrument Makers. Robert was also accepted onto the International School of Advanced Instrumentation; a six month programme run by the Instituto de Astrofísica de Canarias involving courses on Tenerife, work on the Large Millimeter Telescope in Mexico and remotely supervised design work at MSSL.

Lucie Green has been awarded a highly sought after Leverhulme Early Career Research Fellowship. Early Career Fellowships are for researchers at a relatively early stage of their academic careers but with a proven record of research. Lucie will start this Fellowship in September 2010.

Ken Phillips was awarded the Copernicus Medal from the Polish Academy of Sciences on May 11 in a ceremony at the Staszij Palace in the centre of Warsaw. The medal is the highest award of the Academy, and is given annually to both Polish scientists and those outside Poland, of any scientific discipline. The medal was presented by Professor Michal Kleiber, President of the Academy. The award citation mentioned the collaborative work Ken has done with the Space Research Centre in Wroclaw, where he has analyzed data from Janusz Sylwester's RESIK and SphinX instruments on Russian spacecraft. A number of papers has resulted, particularly in the field of solar coronal element abundances.



Awat Rahimi won the MSSL Poster Competition which was held in advance of the UCL Graduate School Poster Competition on 4th March.

Appointments (e.g. Editorial Boards or Committees)

Andrew Coates:

- Scientific organizing committee member for 9th

International Astrophysics Conference: Pickup ions in the heliosphere and beyond, Maui, Hawaii, 14-19 March.

- Science organizing committee member for EJSM science meeting, ESTEC, 17-19.

Grants Awarded

Cassini CAPS ELS post launch support continuation, STFC, £92,435.

Europa-Jupiter System Mission (EJSM) study phase, STFC, £50,195.

EPSRC grant - Miniature Milli-Kelvin Cryo-Cooler, £505,612 - PI Dr I. Hepburn.

STFC grant - IXO: L Class Mission Extension to Assessment phase, £44,699; PI: Dr I. Hepburn, Co-I: Dr M. Page.

Proposals Submitted

Panoramic Camera (PanCam) for ExoMars, funding to Mar 2013, STFC.

Telescope/Satellite Time Awards/Proposals

Roberto Soria was awarded 36 hours at the Australia Telescope Compact Array (Narrabri, NSW), to study a microquasar jet and lobes. Observations scheduled for June 27-30.

Roberto is also involved in the following proposals:

- PI of a Chandra proposal to observe a microquasar jet in the galaxy NGC 7793. Co-I in other Chandra proposals for observations of the galaxies LMC, M83, M31, M104 and the M81 group;
- PI of an ESO VLT proposal to observe the optical counterpart of the intermediate-mass black hole candidate HLX1;
- Co-I of an ESO VLT proposal to observe the ionized bubble around the microquasar S26 (with M W Pakull and C Motch).

Mission Status and Developments

Cassini - Continues to produce excellent data with flybys of Rhea, Dione, Enceladus (2) and Titan (2). MSSL continues to provide important efforts on CAPS ELS operations and science. Many papers and conference talks (invited and contributed) in the period. MSSL-UCL hosted the 40th Cassini CAPS team meeting at Cumberland Lodge, Windsor Great Park, 24-25 May. 39 international attendees had 2 days of discussion on CAPS operations and scientific results. Talks were given by Lin Gilbert, Gethyn Lewis, Geraint Jones, Chris Arridge (2), Andrew Coates, Annie Wellbrock, Adam Masters and Sheila Kanani.

Cluster - The four spacecraft continue to perform well. A mission science operations planning meeting (SOWG) and an SWT were held in May in parallel with the 19th Cluster Workshop in Romania. The workshop focused on the Auroral Acceleration Region and Magnetosphere-Ionosphere Coupling. The Cluster Active Archive recently had its 1000th user sign up.

Double-Star - Further preparatory work for archiving Double-Star PEACE data at the Cluster Active Archive has been ongoing. File production software and Interface Control Document have been updated. A quality assessment of reprocessed raw data from China has been performed.

EJSM - JuMMP team meeting hosted at MSSL, 12-14 May. Successful review of study, and preparations for study report and proposal. EJSM science meeting at ESTEC, 17-19 May, attended by Andrew Coates.

ExoMars - Funding proposal for next 3 years submitted to STFC after much work by Craig Leff and others. Interface meeting with DLR hosted at MSSL, 10-11 May. PanCam development continues to go well with a new optical bench design one of the items discussed at the meeting. Andrew Griffiths supported field trials, Aberystwyth, 26 May.

Solar Orbiter - MSSL continues to be active as the PI institution for the Solar Orbiter Solar Wind Analyser Suite (SWA). Regular telecons with our international partners and the ESA project office are occurring. The team participated in an 'Interface Definition' meeting (6/7 May) in Toulouse with ESA and Astrium. Chris Owen attended a meeting of the 'In Situ Working Group' at ESTEC (19/20 May) in which the coordinated operation of that group of Solar Orbiter instruments was discussed. On the funding front, the MSSL SWA team attended 2 meetings of the STFC PPRP to present the case for UK funding over the next 18 month definition phase. In late May we received word that we would be funded by the UKSA for this work – details to follow once they are confirmed.

Venus Express and Mars Express - Continue to operate well. Analysis of Phobos encounter data with D.Winningham and R.Frahm (SwRI) took place while at MSSL.

Publications – Refereed

Balmaceda, L. Vargas Domínguez, S., Palacios, J., Cabello, I., & Domingo, V. Evidence of small-scale magnetic concentrations dragged by vortex motion of the solar photosphere, *Astronomy & Astrophysics*, Volume 553, L6.

- Clarke, K.E., D.J. Andrews, A. J. Coates, S.W.H. Cowley, and A. Masters Magnetospheric Period Oscillations of Saturn's Bow Shock, *J. Geophys. Res.*, 115, A05202, doi:10.1029/2009JA015164, May 2010.
- Coates, A.J., G.H. Jones, G.R. Lewis, A. Wellbrock, D.T. Young, F.J. Cray, R.E. Johnson, T.A. Cassidy, T.W. Hill, Negative Ions in the Enceladus Plume, *Icarus*, 206, 618–622, doi:10.1016/j.icarus.2009.07.013, Apr 2010.
- Curtis, J., Harra, L., Zarnecki, J. & Grady, M. Reviewing UK Space exploration, *Space policy*, 2010, 26- 113-116.
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- Frahm, R.A., J. R. Sharber, J. D. Winningham, R. Link, M. W. Liemohn, J. U. Kozyra, A. J. Coates, D. R. Linder, S. Barabash, R. Lundin, A. Fedorov, Estimation of the escape of electrons from Mars in 2004 Liberated by the Ionization of Carbon Dioxide and Atomic Oxygen, *Icarus*, Volume 206, Issue 1, p. 50-63, doi 10.1016/j.icarus.2009.03.024, Mar 2010.
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- Kopf, A.J., D.A. Gurnett, J.D. Menietti, P. Schippers, C.S. Arridge, G.B. Hospodarsky, W.S. Kurth, S. Grimald, N. André, A.J. Coates, and M.K. Dougherty, Electron beams as the source of whistler-mode auroral hiss at Saturn, *Geophys. Res. Lett.*, 37, L09102.doi:10.1029/2010GL042980, May 2010.
- Lewis, G.R., C.S. Arridge, D.R. Linder, L.K. Gilbert, D.O. Kataria, A.J. Coates, A. Persoon, G.A. Collinson, N. André, P. Schippers, J. Wahlund, M. Morooka, G.H. Jones, A.M. Rymer, D.T. Young, D.G. Mitchell, A. Lagg and S.A. Livi, The calibration of the Cassini-Huygens CAPS Electron Spectrometer, *Planet. Space Sci.*, 58(3), 427-436, doi:10.1016/j.pss.2009.11.008, 2010.
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- Murray, M.J, Baker, D., Van Driel-Gesztelyi, L & Sun, J., Outflows at the edges of an active

region in a coronal hole: a signature of active region expansion?, *Solar Physics*, Volume 261, Issue 2, pp.253-269.

Phillips, K. J. H., Aggarwal, K., Landi, E., Keenan, F. P. Highly ionized sodium X-ray line emission from the solar corona and the abundance of sodium. *Astronomy and Astrophysics* in press. http://arxiv.org/PS_cache/arxiv/pdf/1005/1005.4375v1.pdf.

Roussos, E., N. Krupp, C. P. Paranicas, D. G. Mitchell, A. L. Müller, P. Kollmann, Z. Bebesi, S.M. Krimigis, and A. J. Coates (2010), Energetic electron microsignatures as tracers of radial flows and dynamics in Saturn's innermost magnetosphere, *J. Geophys. Res.*, Volume 115, Issue A3, CitelID A03202, doi:10.1029/2009JA014808, Mar 2010.

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Published

In press

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Clarke, K. E., D. J. Andrews, C.S. Arridge, A. J. Coates, and S.W.H. Cowley (2010), Magnetopause Oscillations Near the Planetary Period at Saturn: Occurrence, Phase, and Amplitude, *J. Geophys. Res.*, doi:10.1029/2009JA014745, in press, Dec 2009.

Coates, A.J., A. Wellbrock, G.R. Lewis, G.H. Jones, D.T. Young, F.J. Cray, J.H. Waite, R.E. Johnson, T.W. Hill, E.C. Sittler Jr., Negative ions at Titan and Enceladus: recent results, *Faraday Discuss.*, in press, 2010 Dartnell, Lewis R., Stephanie J. Hunter, Keith V. Lovell, Andrew J. Coates, John M. Ward, Low-temperature ionising radiation resistance of *Deinococcus radiodurans* and Antarctic Dry Valley bacteria, *Astrobiology*, in press, Mar 2010.

Foullon, C., Hannah, I., Verwichte, E., Cecconi, B., Fletcher, L., Nakariakov, V., Phillips, K. J. H., Tan, B. L. From large-scale loops to the sites of dense flaring loops: preferential conditions for long-period pulsations in solar flares. *Astrophysical Journal*, in press.

Galand, M., R. Yelle, J. Cui, J.-E. Wahlund, V. Vuitton, A. Wellbrock, A. Coates, Ionization

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Jackman, C.M., C.S. Arridge, J.A. Slavin, S.E. Milan, L. Lamy, M.K. Dougherty and A.J. Coates, In situ observations of the effect of a solar wind compression on Saturn's magnetotail, *J. Geophys. Res.*, doi:10.1029/2010JA015312, in press, accepted 25 May 2010.

Kanani, S.J., C.S. Arridge, G.H. Jones, A.N. Fazakerley, H.J. McAndrews, N. Sergis, S.M. Krimigis, M.K. Dougherty, A.J. Coates, D.T. Young, K.C. Hansen, and N. Krupp, A new form of Saturn's magnetopause using a dynamic pressure balance model, based on in-situ, multi-instrument Cassini measurements, *J. Geophys. Res.*, doi:10.1029/2009JA014262, in press, Jan 2010.

Kellett, S., C.S. Arridge, E.J. Bunce, A.J. Coates, S.W.H. Cowley, M.K. Dougherty, A.M. Persoon, and N. Sergis, Nature of the ring current in Saturn's dayside magnetosphere, *J. Geophys. Res.*, doi:10.1029/2009JA015146, in press, Mar 2010.

Lamy, L., P. Schippers, P. Zarka, B. Cecconi, C. Arridge, M.K. Dougherty, P. Louarn, N. André, W.S. Kurth, R.L. Mutel, D.A. Gurnett, A.J. Coates, Properties of Saturn Kilometric Radiation measured within its source region, *Geophys. Res. Lett.*, in press, 2010.

Masters, A., N. Achilleos, M. G. Kivelson, N. Sergis, M. K. Dougherty, M. F. Thomsen, C. S. Arridge, S. M. Krimigis, H. J. McAndrews, S. J. Kanani, N. Krupp, and A. J. Coates, Cassini observations of a Kelvin-Helmholtz vortex in Saturn's outer magnetosphere, *J. Geophys. Res.*, doi:10.1029/2010JA015351, in press, Mar 2010.

Roussos, E., N. Krupp, H. Krueger, G. H. Jones, Surface charging of Saturn's plasma absorbing moons, *J. Geophys. Res.*, in press.

Toeroek, T, Berger, M. A. & Kliem B., The writhe of helical structures in the solar corona, *Astronomy & Astrophysics*. May 2010.

Valori, G., Kliem B., Toeroek, T & Titov, V. S., Testing magnetofrictional extrapolation with the Titov-Demoulin model of solar active regions, *Astronomy & Astrophysics*. May 2010.

Vargas Domínguez, S., de Vicente, A, Bonet, J. A., & Martínez Pillet, V. Characterization of horizontal flows around solar pores from high-resolution time series of images, *Astronomy & Astrophysics*.

Whittaker, I., G. Guymer, M. Grande, B. Pintér, S. Barabash, A. Fedorov, C. Mazelle, J.A. Sauvaud, R. Lundin, C.T. Russell, Y. Futaana, M. Fränz, T. L. Zhang, H. Andersson, A.

Grigoriev, M. Holmström, M. Yamauchi, K. Asamura, W. Baumjohann, H. Lammer, A. J. Coates, D. O. Kataria, D. R. Linder, C. C. Curtis, K. C. Hsieh, H. E. J. Koskinen, E. Kallio, P. Riihelä, W. Schmidt, J. Kozyra, S. McKenna-Lawlor, J.J. Thocaven, S. Orsini, R. Cerulli-Irelli, A. Mura, A. Milillo, M. Maggi, E. Roelof, P. Brandt, R. A. Frahm, J. R. Sharber, P. Wurz & P. Bochsler, The Venusian Bow Shock as Seen by the ASPERA-4 Ion Instrument on Venus Express, *J. Geophys. Res.*, doi:10.1029/2009JA014826, in press, Apr 2010.

Publications - Non-refereed

Published

J. Ambroz, K. Radziszewski, P. Rudawy, J. Rybak, K. J. H. Phillips. The SECIS instrument on the Lomnický Peak Observatory. *Contributions, Astronomical Observatory Skalnete Pleso*, vol. 40, p. 1.
http://arxiv.org/PS_cache/arxiv/pdf/1004/1004.3454v1.pdf

Invited Talks and Conferences

41st Lunar and Planetary Science Conference (2010), Texas, 1-5 March, 2010.

Li, R., W. Wang, M. Tang, P. Tang, A. Coates, J. P. Muller, A. Griffiths, G. Paar, and J. Oberst, ESA ExoMars Rover Localization and Topographic Mapping: Pre-Launch PanCam Modeling and Error Analysis.

9th International Astrophysics Conference: Pickup ions in the heliosphere and beyond, Maui, Hawaii, 14-19 March.

Attended by Andrew Coates, Geraint Jones and Annie Wellbrock who presented invited talks: Coates, A.J., Ion pickup at comets: comparison with other unmagnetised objects.

Jones, G.H., R.J.Forsyth and A.J.Coates, The structure of comets' induced magnetotails: remote and in-situ observations.

Wellbrock, A., A.J.Coates, G.H.Jones, C.S.Arridge, F.J.Crary, D.T.Young, Electron heating regions at and near Titan's ionospheric pile-up boundary.

Tokar, R.L., M.F.Thomsen, R.E.Johnson, G.H.Jones, A.J.Coates, D.T.Young, F.J.Crary, T.W.Hill, R.J.Wilson, D.B.Reisenfeld and E.C.Sittler, Pick-up ions observed by Cassini near Enceladus and Rhea.

Cassini/MAPS Workshop, Paris, 7-9 April and Cassini/MIMI team meeting, Paris, April 9-10.

Members of the Planetary Group attended and seven presentations were given.

ISSI International Team meeting on Comparative studies on induced magnetospheres, Mar 29-Apr 1, 2010. Attended by Andrew Coates and Annie Wellbrock both of whom gave invited talks.

Coates, A.J., Plasma observations at comets.

Wellbrock A., A.J. Coates, G.H. Jones, C. S.

Arridge, F. J. Crary, E.C. Sittler and D. T.

Young, CAPS-ELS observations at Titan.

NAM/UKSP/MIST meeting, Glasgow, 2010 April 12–16. This meeting was attended by members of the Planetary Science group, the Solar and Stellar Physics group, Plasma Physics group and Astrophysics group.

Santiago Vargas Domínguez was awarded the 1st poster prize (UKSP/MIST) for his poster entitled "Convective plasma around solar pores".

Planetary Science group - Geraint Jones, Chris Arridge, Adam Masters and Sheila Kanani attended. Chris Arridge co-convended session P13 - Magnetospheres and Ionospheres throughout the Universe and gave an invited talk, "Giant planet magnetospheres: Jupiter and Saturn". Other members of the group gave oral presentations.

Space Plasma Physics group - Colin Forsyth, Andrew Fazakerley, Kimberley Steed and Andrew Walsh were involved in organising a number of sessions at the meeting (10 Years of Cluster [CF, ANF, APW], General MIST [ANF], UKSP/MIST Missions Forum [CF], Sun-Earth Connections [KS]). Colin Forsyth, Roger Duthie and Andrew Walsh gave oral presentations at the meeting and Kimberley Steed presented a poster.

Solar & Stellar Physics group - Sessions were organized by Alison Wallace: (New views of solar active regions from Hinode and STEREO), David Williams, Louise Harra and Colin Forsyth: (UKSP/MIST missions forum), Kimberley Steed: (Solar influences in the heliosphere). Several oral presentations and posters were also presented.

EGU, Vienna, 3-7 May 2010. Attended by Andrew Coates – 2 invited talks and more than 11 contributed presentations. Chris Arridge co-convended session PS5.3 – Outer planet magnetotails.

Coates, A., A. Wellbrock, G. Lewis, G. Jones, D. Young, F. Crary, H. Waite, R. Johnson, and T. Hill, Negative ions at Titan and Enceladus: recent results (solicited) Plasma in the Water Plume of Enceladus.

Coates, A., S. Tsang, A. Wellbrock, R. Frahm, D. Winningham, S. Barabash, R. Lundin, D. Young,

and F. Crary, Ionospheric photoelectrons: comparing Venus, Earth, Mars and Titan (solicited).

EJSM science meeting, ESTEC, 17-19 May 2010. Attended by A. Coates, 1 invited talk and 3 other presentations

Coates A. and the Europa Surface Element working group (A. Coradini, B. Bills, R. Lorenz, A. Coates, K. Hand, O. Prieto-Ballesteros, H. Hussmann, C. Sotin, O. Grasset, L. Prockter), R. Gowen and the penetrator consortium, Europa surface element (invited).

CAPS Team Meeting, Cumberland Lodge, 24-25 May. Attended by A. J. Coates, G. H. Jones, C. S. Arridge, S. J. Kanani, A. Wellbrock, L. K. Gilbert, G. R. Lewis, and A. Masters. A number of talks were given:

The Space Plasma Physics group hosted the PEACE Team Meeting at MSSL in March. The meeting brought together the PEACE Co-I's as well as interested scientists to discuss the status of and latest science from the Cluster PEACE instruments. Natasha Doss, Colin Forsyth, Andrew Fazakerley, Branislav Mihaljic, Iryna Rozum and Andrew Walsh gave presentations.

Colin Forsyth and Andrew Walsh attended the 10th International Conference on Substorms in San Luis Obispo, California. Both Andrew and Colin gave oral presentations.

Natasha Doss and Andrew Fazakerley attended and gave presentations at the 11th Cluster Cross-Calibration Workshop in Goslar, Germany.

Natasha Doss and Andrew Fazakerley attended the 19th Cluster Workshop in Poiana Brasov, Romania. Andrew presented a poster and gave an invited talk on behalf of Colin Forsyth.

Andrew Fazakerley attended the *16th SPINE* (Space Plasma Interactions Network in Europe) meeting at ESA HQ, France in March and gave a presentation on Cluster studies of spacecraft-plasma interactions.

Conference on "Ultraluminous X-ray sources and middleweight black holes", European Space Astronomy Centre, near Madrid (May 24-26). Roberto Soria Member of the SOC and invited speaker.

Roberto also gave 1 invited talk (plenary session) and 1 contributed talk (parallel session) at the *Chinese Academy of Sciences 2010 symposium* (April 25) and a seminar at Tsinghua University (Beijing) on ultraluminous X-ray sources.

Bernhard Kliem gave an invited seminar "Flux Rope Instabilities in Coronal Mass Ejections" at the University of Exeter, School of Engineering, Computing and Mathematics, on 29 March.

Louise Harra gave a talk in Moscow at the Lebedev Institute of the Russian Academy of Sciences entitled "EUV spectroscopy from Hinode". Louise also spoke in Hamburg at the Hansa Gymnasium entitled "Solar Physics and a career in space science".

The Flux Emergence Workshop organized by Lucie Green, Louise Harra and David Williams was held at MSSL from 22 to 26 March. 21 participants discussed and analyzed data in order to progress our understanding of the physics of flux emergence from the theoretical and observational points of view.

From the Astrophysics Group, Graziella Branduardi-Raymont and Missagh Mehdipour attended the conference on '*High-resolution X-ray spectroscopy: past, present, and future*' held in Utrecht on March 15-17, to celebrate 10 years of operations of Chandra and XMM-Newton and the synergy between high resolution X-ray and UV spectroscopy, especially with the recent incorporation of the Cosmic Origins Spectrograph (COS) into HST. Graziella gave a talk on X-ray views of Jupiter, and Missagh two posters on his work on the variability of the warm absorber in the Seyfert galaxy NGC3516 and on XMM-Newton OM observations of Mrk 509. The conference venue was the historic Aula of the Academy Building of Utrecht University (see attached picture, and spot the MSSL participants!).

Mat Page and Graziella attended an IXO science meeting in Paris at the end of



April where they gave talks on the potential of IXO for the study of outflows from quasars and for the study of solar system objects, respectively.

Media Broadcasts and Features

Lucie Green:

- Interview for Al Jazeera TV (English language channel) on the science and importance of the Solar Dynamics Observatory.
- Filmed a programme for Teachers TV about the Sun and Hinode and the work being done at MSSL.
- Recorded a podcast for Astronomy FM about solar science at MSSL.

Andrew Coates:

- Interview on BBC Surrey about MSSL activities, planetary projects and space in Surrey, 26 March.
- Info for Chemistry world on ALH84001 and Mars magnetic field, appeared 16 April.

Geraint Jones:

- SPACE.com - "Stunning Comet's Size Shocks Scientists".
- Sciencedaily.com - "Biggest comet measured to date: Comet McNaught".
- Astronomynow.com - "The shocking size of Comet McNaught".
- Universetoday.com - "Does McNaught Take Title for Biggest Comet Ever?".
- Nationalgeographic.com - "Biggest" Comet Measured".

Teaching

We are re-developing our Space-related MSc programme to make it more attractive to potential students and to adhere to the European Credit Transfer Scheme, which makes it easier to compare degree programmes across national boundaries. We are awaiting for UCL approval, after having obtained that of the Faculty. As part of this we are also creating a new module titled 'Space data systems and processing' covering various topics of the 'downstream' aspects of space research, i.e. the gathering, processing and exploitation of space data, with scientific and everyday life applications.

Outreach

Andrew Coates:

- Recent results from Cassini, presented at South Downs Astronomical Society, Chichester, 5 March.
- MSSL Past (from 1980s), present and future, presented at UK Space 2010, Charterhouse,

26 March.

- Recent results from Cassini, presented at Guildford Astronomical Society, 1 April.
- Recent results from Cassini, presented at Croydon Astronomical Society, 14 May.

Lucie Green:

- Talk about science being done with Hinode to Croydon Astronomical Society and Knowle astronomical society.
- Teacher training session with the Prince's Trust telling teachers about solar science and how to bring it into the classroom.
- Public talk at the Royal Observatory, Greenwich as part of their Solar Season.
- Talk at the Royal Society about the public engagement work being carried out at MSSL.
- Public lecture, together with Prof. John Brown (Astronomer Royal for Scotland), entitled "The magic of the Sun and stars" as part of the events during the NAM 2010 in Glasgow. The talk explored the wonders of our own Sun and countless other stars throughout the universe.

Ian Hepburn:

- Erith Primary School 2/ 3 March, Whole school space and science activities and talks.
- Loxwood Primary School, 18 and 25 March, yr4 and yr5 space days.
- Horsell Scout group space day at MSSL, 20 March.
- 1st Royal Kingston Scout group space day at MSSL, 22 May.

Sheila Kanani:

- 'Mission to Mars' workshop at Furzedown Primary School.
- Science Fair at Addington Palace, Croydon.
- Filmed for an astronomy program to be shown on Teachers' TV at the end of July.
- Talked about Enceladus at 'Bright Club' in London.

Roberto Soria:

- Public talk at WOLAS (West of London Astronomical Society), on radiation and jet emission from black holes, April.

Press Releases

Several press releases were made at the National Astronomy Week in April:

- Sheila Kanani, 'Overview of low energy electron features in the vicinity of Saturn's moon Enceladus'
- Geraint Jones, The shocking size of comet McNaught.
- Colin Forsyth on his work studying the auroral

acceleration processes using Cluster. This press release was picked up by a number of news outlets, including The Scotsman and ScienceDaily.

- Lucie Green contributed a press release on “Magnetic ropes tie down solar eruptions”. This was about her work identifying magnetic flux ropes in the solar atmosphere which is important for our understanding of trigger of solar eruptions.

Social Club

This is the first of what will hopefully become a regular feature of the MSSL Newsletter where you can keep up to date with past and future events involving the social club.

As the summer is fast approaching most of the Club’s attention has been turned to the swimming pool. A huge effort has been made this year to improve the pool and the area around it and lunch-time parties of volunteers have been hard at work pulling weeds, hedge trimming, raking, sweeping and generally tidying up the area. Hopefully by the time you read this, the pool will be newly painted with a fresh coat of blue paint and full of water again ready for use.

Thank you to everyone who got involved in the pool refurbishment; hopefully you can now find the time to enjoy the fruits of your labour!

Please keep in mind that use of the swimming pool is restricted to social club members and their families. The pool is a major expense and the membership fee is the only way we can afford to keep it open.

Thanks also go to Rob Bedington and the Scout group he is involved with, for clearing all the rubbish out of the social club building.

We are always trying to find new activities and events to run so if you have a suggestion please email [ckt @ mssl ucl ac uk](mailto:ckt@mssl.ucl.ac.uk) and if you would like to become a member of the social club please contact Craig Theobald or Sheila Kanani.

Next Issue

The next issue of The Newsletter (Volume 8, Issue 2) will be published in September 2010. This will cover activities from 1 June to 31 August 2010.