The Newsletter

Volume 5, Issue 3

23rd January 2008

Covers events between 1st September and 30th November 2007

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General

MSSL celebrated its 40th anniversary last year following its formal opening on May 3rd 1967. During the last 40 years MSSL has contributed to over 250 rocket and satellite projects in collaboration with all the major space agencies around the world. Highlights include Giotto, the European probe that encountered Comet Halley in 1986; SoHO, the ESA/NASA mission which revolutionised studies of the Sun; NASA's Swift satellite, which is currently producing many new discoveries about Gamma-Ray Bursts; the notorious Beagle 2 mission to Mars; a long series of X-ray astronomy missions, including ESA's present XMM-Newton observatory; and the NASA/ESA Cassini probe which is now returning spectacular data from Saturn and its moons.

To mark the anniversary an open day was held at the laboratory on 16 Sept. 2007 and current staff, alumni and local residents were invited. Alan Smith, Andrew Coates and Mark Cropper discussed the past achievements and future plans of the laboratory with the visitors, and the new building was also open for people to view the new facilities. The younger visitors were kept busy in the children's tent where they could build rockets, make solar system bracelets and start the treasure hunt.

The day was a huge success with just under 300 people attending. Even Patrick Moore and the Sky at Night Crew came along to take part in the celebrations. Alex Blustin and Lucie Green would like to say a huge thank you to all those whose efforts made this a very special day.

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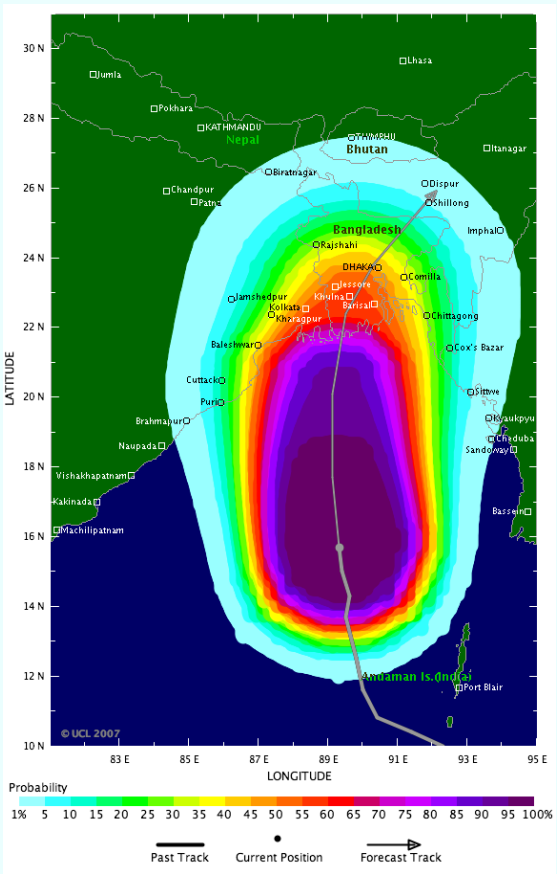
The Department's award-winning tropical-storm tracker (http://tsr.mssl.ucl.ac.uk) helped to save many lives from cyclone Sidr's devastating impact on Bangladesh in November.

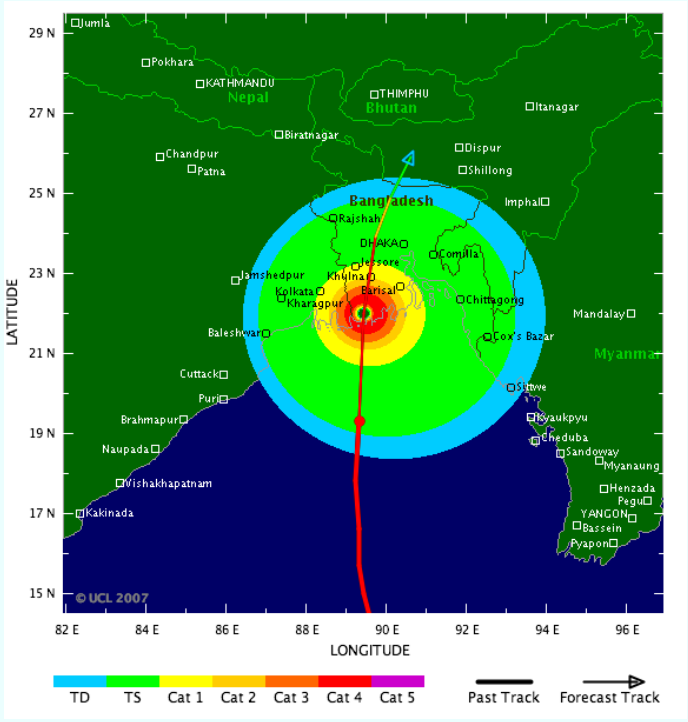
A UCL news article "Bangladesh cyclone: UCL warnings saved many lives" provides details.

The article includes quotes from a number of Bangladeshi humanitarian and government organisations who used our Department's warnings to issue evacuations which resulted in countless lives being saved. Examples of UCL/TSR forecasts which contibuted to this success are shown below:

The probabilities (in percent) of Bangladesh experiencing 1-min sustained wind speeds of at least tropical storm strength (39mph) from cyclone Sidr when the storm was still thirty hours from landfall are shown in the figure on the left.



The forecast windfield, issued by the UCL/TSR tropical storm tracker at 09:00GMT on the 15 Nov. for the landfall of the cyclone in Bangladesh, is shown below. Colour distinguishes the forecast peak wind with yellow and red indicating 1-min sustained winds of at least 74mph and 131mph respectively.



Prizes and Awards

Andrew Coates has been appointed honorary professor at Aberystwyth University.

Christopher Copperwheat (supervised by Mark Cropper) and Paul Henderson (supervised by Chris Owen) were both successful in defending their PhD theses.

Len Culhane has been elected a Fellow of University College London. He will be formally admitted to the Fellowship in June.

Roberto Soria was awarded a Research Fellowship from the UK Dept. of Innovation, Universities and Skills, to conduct a four-month research project, later in 2008, at Tsinghua University (Beijing), with Prof Shuang-Nan Zhang. He was also awarded a Sydney University Visiting Grant, to spend 3 months (Dec 07-Feb 08) at their School of Physics, collaborating with Dr Zdenka Kuncic on accretion studies.

MSSL prize giving was held on 20th Nov. Patricia Schady won the Alan Johnstone Award for outstanding scientific achievement by a research student; Alex Blustin won the Elizabeth Puchnarewicz Award for outstanding contribution to public outreach; Khalid al Janabi won the John Raymont Award for outstanding commitment to MSSL's technology progrmme and Roberto Mignani was awarded the Robert Boyd Award for outstanding scientific achievement.

New Staff Members

We welcome the following staff to MSSL: Ignacio Ferreras (Astrophysics); Sandrine Grimald (Space Plasma Physics and Planetary Science); Shih-Yuan Lin (Imaging); Michelle Murray (Solar); Paul Prior (Computing); Martin Still (Astrophysics) and Matt West (PEACE operations group - Space Plasma Physics).

Visitors

Prof. Mark Lester from Leicester University visited and gave a seminar entitled "Multi-point measurements in space plasmas: the role of the Super Dual Auroral Radar Network (SuperDARN)", 15 Oct. 2007.

Prof. Michael Balikhin from University of Sheffield visited and gave a seminar entitled "Experimental studies of nonlinear processes in space physics", 5 Nov. 2007.

Michael Storrie-Lombardi visited Peter Muller/Andrew Coates on 5-6 Nov. 2007 and gave a seminar on Astrobiology Instruments, Methods, & Missions in the Next Decade.

Appointments (e.g. Editorial Boards or Committees)

Silvia Zane has been selected to participate in the new pan European MEP-Scientist Pairing Scheme. This is a cooperative venture between STOA and the European Commission which brings scientists and MEPs together to spread mutual understanding. The MEP with which Silvia has been paired, On. Pier Antonio Panzeri, will visit MSSL on 28 Jan.

The role of STOA is the **A**ssessment of **S**cientific and **T**echnological policy **O**ptions for the European Parliament. Further details are available at http://royalsociety.org/news.asp?id=7149.

Telescope/Satellite time awards/proposals

Roberto Soria

Co-I - Spitzer (mid-infrared) proposal to observe jets in a sample of neutron star and black hole X-ray binaries in the Galaxy and the LMC.

Co-I - XMM proposal to observe a sample of submm-bright (SCUBA) galaxies at redshift ~ 2-3, to test the relation between star-formation and nuclear activity (PI: Sukanya Chakrabarti).

Co-I - XMM proposal to study star formation in the nearby galaxy M83 (PI: Roy Kilgard).

Grants and Contracts Awarded

The Planetary Science group was successful in a bid for personnel exchange visits under the European Commission-funded Europlanet network. The funding will support a visit by Chris Arridge to

the University of Michigan, and visits by Nicolas Andre (ESTEC) and Elias Roussos (MPS, Germany) to MSSL.

CryoSat-2 ground segment software (IPF-2) awarded from ESA-ESRIN. Value is €230k (FEC) from now to Sept 09. PI- Steve Baker.

Mission Status and Developments

Cassini – the instrument is working well. 2 first author papers this period.

Cluster – all four PEACE instruments are in good condition and returning good data.

Cosmic Visions - Planetary Science group involvements in the proposals (selected for further study) – TANDEM (Titan/Enceladus), Laplace (Jupiter/Europa), Marco Polo (Asteroid sample return).

Cross-Scale – has been selected by ESA's Space Science Advisory Panel to proceed to the Assessment Phase which started in Nov. 2007. This consists of an initial study by the ESA internal Concurrent Design Facility, followed by an industrial Invitation to Tender for two parallel studies to be completed toward the end of 2009.

CryoSat-2 - launch scheduled for Mar 09

Double Star – the Double Star TC1 ended its mission in Oct. 2007. Connection to the Double Star TC2 satellite has been recovered again.

ExoMars – Andrew Coates/Andrew Griffiths organised a PanCam team meeting at ESTEC in association with EMSEC conference. Additional interactions with ESTEC project team. Contract with Space-X, Switzerland started.

Hinode - (Solar-B) EIS is one year old and performing well: The EIS passed its first year in orbit and continues to return high quality data. Thanks go to the EIS team without whose effort and dedication this would not have been possible.

Kua-fu - MSSL is provisionally going to provide some instruments for the spacecraft in the solar wind and for the one spacecraft in the magnetosphere. Some work on the Kua-fu is continuing. In China this mission concept has passed a few stages and is waiting for approval.

Mars Express - instrument working well. EMSEC conference in ESTEC. Glyn Collinson represented us at ASPERA team meeting, Toulouse, Nov 7-8.

Solar Orbiter – the plasma group is involved in writing the case for building some instruments for the mission in response to the AO from ESA. Chris Owen will be a PI on this proposal.

Venus Express – ASPERA team meeting and first results paper in Nature.

Publications - Refereed

S & CP authors are shown in upper case.

A. Published

Barabash, S., Fedorov, A., Sauvaud, J.A., Lundin, R., Russell, C.T., Futaana, Y., Zhang, T.L., Andrersson, H., Brinkfeldt, K., Grigoriev, A., Holmstrom, M., Yamauchi, M., Asamura, K., Baumjohann, W., Lammer, H., COATES, A.J., KATARIA, D.O., LINDER, D.R., Curtis, C.C., Hsieh, K.C., Sandel, B.R., Grande, M., Gunell, H., Koskinen, H.E.J., Kallio, E., Riihela, P., Sales, T., Schmidt, W., Kozyra, J., Krupp, N., Franz, M., Woch, J., Luhmann, J., McKenna-Lawlor, S., Mazelle, C., Thocaven, J.-J., Orsini, S., Cerulli-Irelli, R., Mura, M., Milillo, M., Maggi, M., Roelof, E., Brandt, P., Szego, K., Winningham, J.D., Frahm, R.A., Scherrer, J., Sharber, J.R., Wurz, P. & Bochsler, P., The loss of ions from Venus through the plasma wake, Nature, 450, 650-653, 2007. 10.1038/nature06434

Barabash, S., Sauvaud, J.-A., Gunell, H., Andersson, H., Grigoriev, A., Brinkfeldt, K., Holmstrom, M., Lundin, R., Yamauchi, M., Asamura, K., Baumjohann, W., Zhang, T., COATES, A.J., LINDER, D.R., KATARIA, D.O., Curtis, C.C., Hsieh, K.C., Sandel, B.R., Fedorov, A., Mazelle, C., Thocaven, J.-J., Grande, M., Koskinen, H.E.J., Kallio, E., Sales, T., Riihela, P., Kozyra, J., Krupp, N., Woch, J., Luhmann, J., McKenna-Lawlor, S., Orsini, S., Cerulli-Irelli, R., Mura, M., Milillo, M., Maggi, M., Roelof, E., Brandt, P., Russell, C.T., Szego, K., Winningham, J.D., Frahm, R.A., Scherrer, J., Sharber, J.R., Wurz, P. & Bochsler, P., The Analyser of Space Plasmas and Energetic Atoms (ASPERA-4) for the Venus Express mission, Planet. Space Sci., 55, iss.12, 1772-1792, 2007.

Bertucci, C., Neubauer, F.M., Szego, K., Wahlung, J.-E., COATES, A., Dougherty, M.K., Young, D. & Kurth, W., Structure of Titan's mid-range magnetic tail. Cassini magnetometer observations during the T9 flyby, Geophys. Res. Let., 34, 2007. 10.1029/2007GL030865

Chaston, C.C., Wilber, M., Mozer, F.S., Fujimoto, M., Goldstein, M.L., Acuna, M., Reme, H. & FAZAKERLEY, A., Mode conversion and anomalous transport in Kelvin-Helmholtz vortices and kinetic Alfvén waves at the Earth's magnetopause, Physical Review Letters, 99, iss.17, 2007. 10.1103/PhysRevLett.99.175004

COATES, A.J., Crary, F.J., LEWIS, G.R., Young, D.T., Waite, Jr, J.H & Sittler, Jr, E.C., Discovery of heavy negative ions in Titan's ionosphere, Geophys. Res. Let., 34, 2007. 10.1029/2007GL030978

COATES, A.J., Crary, F., Young, D.T., Szego, K., ARRIDGE, C.S., Bebesi, Z., Sittler, E.C., Hartle, R.E. & Hill, T.W., Ionospheric electrons in Titan's tail: plasma structure during the Cassini T9 encounter, Geophysical Research Letters, 34, iss. L24S065, 2007. 10.1029/2007GL030919

Lefebvre, B., Schwartz, S.J. & FAZALERLEY, A., Electron dynamics and cross-shock potential at the quasi-perpendicular Earth's bow shock, J. Geophys. Res., 112, A9, iss. A09212, 2007. 10.1029/2007JA012277

Modolo, R., Wahlund, J.-E., Boström, R., Canu, P., Kurth, W.S., Gurnett, D., LEWIS, G.R. & COATES, A.J., Far plasma wake of Titan from the RPWS observations - a case study, Geophys. Res. Let., 34, 2007. 10.1029/2007GL030482

Pellegrini, S., Baldi, S., Kim, D.W., Fabianno, G., SORIA, R., Siemiginowska, A. & Elvis, M., A deep Chandra look at hte Low-LB elliptical NGC821, Astrophys. J., 667, 2, 731-748, 2007. 10.1086/520710

Pellegrini, S., Siemiginowska, A., Fabbiano, G., Elvis, M., Greenhill, L., SORIA, R., Baldi, A. & Kim, D.W., A deep Chandra, very large array, and Spitzer infrared array camera study of the very low luminosity nucleus of the elliptical NGC821, Astrophys. J., 667, 2, 749-759, 2007. 10.1086/520711

Sittler, E.C., André, N., Blanc, M., Burger, M., Johnson, R.E., COATES, A.J., Rymer, A., Reisenfeld, D., Thomsen, M.F., Persoon, A., Dougherty, M., Smith, H.T., Baragiola, R.A., Hartle, R.E., Chornay, d., Shappirio, M.D., Simpson, D., McComas, D.J. & Young, D.T., Ion and neutral sources and sinks within Saturn's inner magnetosphere: Cassini results, Planet. Space Sci., 56, 1, 2008. 10.1016/j.pss.2007.06.006

SORIA, R., Bridging the gap between stellar-mass black holes and ultraluminous X-ray sources, Astrophys. Sp. Sci., 313, 1-3, 213-222, 2007. 10.1007/s10509-007-9599-0

SORIA, R., Baldi, A., Risaliti, G., Fabbiano, G., King, A.R., LaParola, V. & Zezas, A., New flaring of an ultraluminous X-ray source in NGC 1365, Mon. Not. R. astr. Soc., 379, 4, 1313-1324, 2007. Study of an accreting black hole in the galaxy NGC1365, which became one of the brightest of its class then faded sharply within one week, possibly when the accreting gas was blown away in an outflow. We discuss the mass and the accretion state of this black hole. 10.1111/j.1365-2966.2007.12031.x

Stenberg, G.T., Oscarsson, M., André, A., Vaivads, M., Backrud-Ivgren, Y., Khotyaintsev, L., Rosenqvist, F., Sahraoui, N., Cornilleau-Wehrlin, A., FAZAKERLEY, A., Lundin, R. & Décréau, P.M.E., Internal structure and spatial dimensions of whistler wave regions in the magnetopause boundary layer, Ann. Geophysicae, 2439-2451, 2007.

Szego, K., Bebesi, Z., Bertucci, C., COATES, A.J., Crary, F., Erdos, G., Hartle, R., Sittler, E.C. & Young, D.T., The charged particle environment of Titan during the T9 flyby, Geophys. Res. Let., 34, 2007. 10.1029/2007GL030677

Taylor, M.G.G.T., Lavraud, B., Escoubet, C.P., Milan, S.E., Dunlop, M.W., Nykyri, K., Davies, J.A., Friedel, R.H.W., Frey, H., BOGDANOVA, Y.V., Asnes, A., Laakso, H., Trávnícek, P., Masson, A., Opgenoorth, H., Vallat, C., FAZAKERLEY, A.N., LAHIFF, A.D., OWEN, C.J., Pitout, F., Pu, Z., Shen, C., Zong, Q.G., Reme, H., Scudder, J. & Zhang, T.L., The plasma sheet and boundary layers under northward IMF: a multi-point and multi-instrument perspective, Adv. Space Res., 2007. 10.1016/j.asr.2007.10.013

Wei, X.H., Cao, J.B., Zhou, G.C., Santolík, O., Reme, H., Dandouras, I., Cornilleau-Wehrlin, N., Lucek, E., Carr, C.M. & FAZAKERLEY, A., Cluster observations of waves in the Whistler frequency range associated with magnetic reconnection in the Earth's magnetotail., J. Geophys. Res., 112, A10225, 2007. 10.1029/2006JA011771

Yingjuan, M., Nagy, A.F., Toth, G., Cravens, T.E., Russell, C.T., Wahlund, J.-E., Crary, F.J., COATES, A.J., Bertucci, C.L. & Neubauer, F.M., 3D global multi-species Hall-MHD simulation of the Cassini T9 flyby, Geophys. Res. Let., 34, 2007. 10.1029/2007GL031627

Yukita, M., Swartz, D.A., SORIA, R. & Tennant, A.F., Discovery of a transient X-ray source in the compact stellar nucleus of NGC2403, Astrophys. J., 664, iss.1, 277-283, 2007. 10.1086/518237

B. In Press

ARRIDGE, C.S., Russell, C.T., Khurana, K.K., Achilleos, N., Cowley, S.W.H., Dougherty, M.K. & Bunce, E.J., Saturn's magnetodisc current sheet, J. Geophys. Res., 2008.

Bunce, E.J., ARRIDGE, C.S., Cowley, S.W.H. & Dougherty, M.K., Magnetic field structure of Saturn's dayside magnetosphere and its mapping to the ionosphere: Results from ring current modeling, J. Geophys. Res. - Space Physics, 2007.

DARTNELL, L.R., Desorgher, L., Ward, J.M. & COATES, A.J., Martian sub-surface ioinising radiation: biosignatures and geology, Biogeosciences, 2007.

Esposito, P., Mereghetti, S., Tiengo, A., ZANE, S., TUROLLA, R., Gotz, D., Rea, N., Kaway, N., Ueno, M., Israel, G.L., Stella, L.,. & Feroci, M., SGR 1806-20 about two years after the giant flare: Suzaku, XMM-Newton and INTEGRAL observations, Astron. & Astrophys., 2007.

Israel, G.L., Gotz, D., ZANE, S., Dall'Osso, S., Rea, N. & Stella, L., Linking the X-ray timing and spectral properties of the glitching AXP 1RXS J170849-400910, Astron. & Astrophys., 2008.

Masters, A., ARRIDGE, C.S., Dougherty, M.K., Bertucci, C., Billingham, L., Schwartz, S.J., Jackman, C.M., Bebesi, Z., COATES, A.J. & Thomsen, M.F., Cassini encounters with hot flow anomaly-like phenomena at Saturn's bow shock, J. Geophys. Res., 2008.

Rea, N., Nichelli, E., Israel, G.L., Perna, R., Oosterbroek, T., Parmar, A.N., TUROLLA, R., Campana, S., Stella, L., ZANE, S. & Angelini, L., Very deep X-ray observations of the Anomalous X-ray Pulsar 4U 0142+614, Mon. Not. R. astr. Soc., 2008.

SAUNDERS, M.A. & LEA, A.S., Large contribution of sea surface warming to recent increase in Atlantic hurricane activity, Nature, 2008. The study is the first to quantify how much of the recent increase in North Atlantic hurricane activity/frequency is due to warming sea surface temperatures. The current sensitivity of hurricane activity to sea surface warming is large with a 0.5 degree C increase in sea surface temperature being associated with a ~40% increase in activity.

Zhang, Q.-H., Liu, R.-Y., Huang, J.-Y., Dunlop, M.W., Hu, H.-G., Shen, C. & BOGDANOVA, Y.V., Characteristics of the magnetic flux transfer events on 1 April 2004, Chinese Journal of Polar Research, 2007.

Publications - Non-refereed

A. Published

SORIA, R., WU, K. & Kuncic, Z., Characteristics, temperatures and spectral appearance of ULX disks, in Proceedings of the workshop on X-rays from nearby galaxies (arXiv:0711.2448), ESAC, Spain, Sept. 2007.

B. In Press

Kondriatev, V.I., Burgay, M., Possenti, A., McLaughlin, M.A., Lorimer, D.R., TUROLLA, R., Popov, S. & ZANE, S., A Search for Pulsed and Bursty Radio Emission from X-ray Dim Isolated Neutron Stars, in 40 Years of Pulsars: Millisecond Pulsars, Magnetars, and More, 2007.

Invited Talks and Conferences

Kinwah Wu, Andrew Coates and Chris Owen convened *Inter-disciplinary Forum on Magnetospheric Activities in Moons, Planets, Stars and Black Holes* which was held at MSSL, 18-20 Sept. 2007.

Details of talks given by Kinwah Wu, Silvia Zane, Chris Owen, Andrew Coates, Chris Arridge, Graziella Branduardi Raymont and Valdimir Yershov are available at http://www.mssl.ucl.ac.uk/theory/events/20070918/talks.html.

Spatio-Temporal Analysis Multipoint Measurement in Space -2 , Orleans, France, 24 Sept. 2007.

- Claire Foullon (invited talk) FOULLON C., C.J. OWEN, S. Dasso, L.M. Green, I. Dandouras, H.A. Elliott, A.N. FAZAKERLEY, Y.V. BOGDANOVA, N.U. Crooker, Multispacecraft study of the 21 January 2005 ICME.
- Andrew Fazakerley (invited talk) FAZAKERLEY, A., M W Dunlop, A WALSH, I ALEXEEV, X Cao, J Davies, M Lester, T Lui, L Kistler, C Mouikis, A Grocott, Z Pu, C Shen, J Shi, M G G T Taylor, M Volwerk, L Xie, Comparative Cluster and Double Star measurements in the magnetotail.
- Chris Owen (invited talk) OWEN, C.J., P. D. HENDERSON, A. D. LAHIFF, I. V. ALEXEEV, A.N. FAZAKERLEY, G. Stenberg, E. Lucek and H. Reme, Cluster measurements of the divergence of the electron pressure tensor and j × B: Relative contributions to Ohm's law.

4th Alven conference, The importance of plasma processes in planetary physics and astrophysics, Arcachon, France, 24-28 Sept. 2007.

- Andrew Coates (invited talk), Cometary plasma physics;
- Chris Owen, Andrew Fazakerley, Claire Foullon, Sandrine Grimald, Andrew Walsh and Ilya Alexeev attended. Members of the group gave 3 invited talks, 2 talks, 2 posters, and participated in other 20 presentations as the co-authors.

ESAC workshop "X-rays from Nearby Galaxies", Villafranca, Spain, Sept. 2007.

- Roberto Soria, Super-Eddington accretion states in black holes X-ray binaries.

Cassini CAPS team meeting, Rice University, Houston, Texas, USA, Oct. 2007.

- Arridge, C.S., N. Achilleos, E.J. Bunce, A.J. Coates, S.W.H. Cowley, M.K. Dougherty, K.C. Hansen, T.W. Hill, G.H. Jones, K.K. Khurana, N. Krupp, H.J. McAndrews, C.T. Russell, D. Talboys, R.J. Wilson, Cassini CAPS Observations in Saturn's polar magnetosphere.

London Titan Seminars #4, Imperial College, 9th Nov. 2007.

- Arridge, C.S., A.J. Coates, and C. Marsh, Cassini CAPS/ELS Observations of Saturn's magnetosphere at 20RS.
- A.J. Coates, C.S. Arridge, A. Wellbrock, D.T. Young, F.J. Crary, K.Szego, CAPS-ELS observations at recent Titan encounters.

European Mars Science & Exploration Conference: Mars Express and ExoMars, ESTEC, 12-16 Nov. 2007.

- Planetary science and imaging group members attended and Andrew Coates and Andrew Griffiths gave talks; AJC chaired a session on Mars Aeronomy.
- Coates, A.; Crary, F.; Young, D; Frahm, R.; Winningham, D.; Lundin, R.; Barabash, S., Ionospheric Photoelectrons and their Role in Plasma Escape at Titan: Comparison to Mars
- Griffiths, A.; Coates, A.; Jaumann, R.; Josset, J.-L.; Michaelis, H.; Paar, G.; Barnes, D.; Muller, J.-P. The Panoramic Camera (Pancam) Instrument for the Exomars Rover.

AAS 39th Division of the Planetary Sciences Meeting, Orlando, Florida, Oct. 7-12, 2007.

- Jones, G. H., J. S. Morrill, K. Battams, M. J. Owens, R. A. Howard, G. A. Stenborg, C. M. Lisse, "Dust, Neutrals, and Ions in a Near-Sun Comet: STEREO and SOHO Observations of C/2006 P1 (McNaught)".

PEACE-RAPID meeting, 5-7 Sept. 2007, RAL, UK.

- Andrew Lahiff, Iryna Rozum, Branislav Mihaljcic, Chandrasekhar Anekallu, Andrew Fazakerley, Ilya Alexeev, Sandrine Grimald, Claire Foullon, and Andrew Walsh attended. Members of the group gave 9 talks and participated in other 6 as the co-authors.

Double Star IWG-12 and SWT-15, Shanghai 10-11 October 2007

- Andrew Fazakerley, Iryna Rozum, and Branislav Mihaljcic attended and gave presentations.

MIST Meeting, 30 Nov. 2007, London

- Andrew Fazakerley, Chris Owen, Sandrine Grimald, Claire Foullon, Andrew Walsh, and Kimberley Steed attended. Members of the group gave 2 talks, 1 poster, and participated in 2 other presentations as the co- authors. Claire Foullon was the chair of the solar wind session at MIST.

Media Broadcasts and Features

Andrew Coates:

- Interviews on BBC R5 live (space exploration); CNN, BBC World TV, BBC World Service (Newshour), BBC Southern Counties radio, Al Jazeera English TV, (Sputnik 50th anniversary and current space activities including Cassini); BBC World TV (Chinese mission to the Moon).

- Quoted in Observer - Cassini 10th anniversary (14 Oct); Daily Telegraph - Venus Express results (29 Nov).
- Interview for scitizen.com on 10 years since Cassini-Huygens launch.
- Interview on Titan negative ion story appeared on NASA main and Cassini sites and ESA web portal.

Outreach

Andrew Coates

- Talks at Newbury Astronomical Society; GCSE Astronomy group (and others) at Trinity Catholc High School, Woodford Green, Essex; UCL/Birkbeck APEX seminars.

Chris Arridge

- Talk to Ewell Astronomical society.
- Started as a Researcher in Residence at Willingdon Community School, Eastbourne, East Sussex.

Press Releases

Andrew Coates - Venus Express (STFC), Titan negative ion (UCL) papers 28/11/07. This paper was also selected as a Geophys. Res. Letters "Editor's highlight" article.

Mark Saunders - Australian tropical cyclone activity in 2007/8 forecast to be most active in 9 years (http://tsr.mssl.ucl.ac.uk/docs/TSRRelease09Nov2007.pdf).

Roberto Soria - with the University of Colorado (JILA) about an X-ray survey of recent supernovae to identify possible young, Crab-like, high-energy pulsars associated with the remnant. Very few such sources are found, which puts an upper limit to the birth spin of neutron stars (Perna et al, submitted).

Other News

Ken Phillips went to Wroclaw, Poland, November 11-17, 2007, under a Royal Society/Polish Academy of Sciences travel grant. He had discussions with Professor Janusz Sylwester on RESIK data analysis - a joint project that uses Ar XVII X-ray lines observed in numerous flares to see if the line ratios follow atomic theory and more particularly to determine the Ar/S abundance ratio in flares. They also had discussions about the new SphinX instrument which is undergoing tests and calibrations: this is an X-ray spectrometer operating in the 1-12 keV range which will fly on the Russian CORONAS-PHOTON spacecraft, due for launch in the next couple of years. Ken also gave a seminar on Hinode data at Wroclaw Observatory, which is a short walk from Janusz's Space Research Centre. Here he also held discussions with Pawel Rudawy and Krzysiek Radziszewski on H-alpha flare data taken with the SECIS CCD cameras and on plans for the 2008 and 2009 total solar eclipses. These plans are rudimentary at present, but if funds can be found then expeditions will be mounted to repeat previous experiments to observe the green-line corona with high time resolution.

Acknowledgements

Thanks to all who helped with Inter-disciplinary Forum on Magnetospheric Activities in Moons, Planets, Stars and Black Holes, MSSL, 18-20 Sept. 2007

Next Issue

The next issue of the Department of Space and Climate Physics Newsletter (Volume 5, Issue 4) will be published in March 2008. This will cover activities from 1 December 2007 to 29 February 2008.