

Granta MIST

**Selwyn College, Cambridge
5-7 April 2005**

Scientific Programme

Session 1 – Tuesday 1400 – 1535

Planetary magnetospheres and ionospheres: the Cassini era Chair – A. J. Smith

1400 – 1405 Welcome and Announcements.

A. J. Smith⁽¹⁾

(1) British Antarctic Survey.

1405 – 1420 CAPS results at Saturn and Titan.

A. J. Coates⁽¹⁾ representing the CAPS team

(1) Mullard Space Science Laboratory, University College London.

1420 – 1435 Cassini-CAPS observations of injected and drift dispersed hot plasma in Saturn's magnetosphere.

A. M. Rymer⁽¹⁾, T. W. Hill⁽²⁾, A. J. Coates⁽¹⁾, H. J. McAndrews⁽¹⁾, L. K. Gilbert⁽¹⁾, G. R. Lewis⁽¹⁾, N. Andre⁽³⁾, J. L. Burch⁽⁴⁾ and M. K. Dougherty⁽⁵⁾

(1) Mullard Space Science Laboratory.

(2) Physics and Astronomy Department, Rice University.

(3) Centre d'Etude Spatiale des Rayonnements.

(4) Space Science and Engineering Division, Southwest Research Institute.

(5) Department of Space and Atmospheric Physics, Imperial College London.

1435 – 1450 Estimation the current density in Saturn's equatorial current sheet.

C.S. Arridge⁽¹⁾, K.K. Khurana⁽²⁾ and M.K. Dougherty⁽¹⁾

(1) Space and Atmospheric Physics, Imperial College London.

(2) Institute of Geophysics and Planetary Physics, University of California.

1450 – 1505 Saturn's icy satellites Dione and Enceladus: Initial results from the Cassini Plasma Spectrometer.

H. J. McAndrews⁽¹⁾, A. J. Coates⁽¹⁾, C. J. Owen⁽¹⁾, M. F. Thomsen⁽²⁾, F. J. Crary⁽³⁾ and the CAPS Team

(1) Mullard Space Science Laboratory, University College London.

(2) Los Alamos National Laboratory.

(3) Southwest Research Institute.

1505 – 1520 Investigating Titan's magnetic wake.

A. L. Law⁽¹⁾, M.K. Dougherty⁽¹⁾ and I.C.F. Mueller-Wodarg⁽¹⁾

(1) Space and Atmospheric Physics, Imperial College London.

1520 – 1535 Magnetospheric energy inputs into the upper atmospheres of the giant planets.

C. G. A. Smith⁽¹⁾, S. Miller⁽¹⁾ and A. D. Aylward⁽¹⁾

(1) Atmospheric Physics Laboratory, University College London.

Session 2 – Tuesday 1605 – 1705

Atmospheric waves, winds, tides and temperatures

Chair – G. Millward

1605 – 1620 Dynamics and temperature of the Antarctic mesosphere & lower thermosphere over Rothera (68S).

N. J. Mitchell⁽¹⁾, P. T. Younger⁽¹⁾ and P. J. Espy⁽²⁾

(1) University of Bath.

(2) British Antarctic Survey.

1620 – 1635 CMAT2 - Developing the UCL upper atmosphere model.

A. D. Aylward⁽¹⁾, M. J. Harris⁽¹⁾ and G. Millward⁽¹⁾

(1) Atmospheric Physics Laboratory, University College London.

1635 – 1650 Storming the Bastille: Storm-enhanced densities in the F2-layer.

H. Rishbeth⁽¹⁾ and S. Basu⁽²⁾

(1) School of Physics & Astronomy, University of Southampton.

(2) Center for Space Physics, Boston University.

1650 – 1705 Thermospheric temperature comparisons: combining incoherent scatter and optically determined neutral temperatures.

E. M. Griffin⁽¹⁾, A. Aruliah⁽¹⁾, I. McWhirter⁽¹⁾, D. M. Gabriel⁽¹⁾, E. A. K. Ford⁽¹⁾ and N. P. Meredith⁽²⁾

(1) Atmospheric Physics Lab, University College London.

(2) Physical Sciences Division, British Antarctic Survey.

Session 3 – Wednesday 0900 – 1040

General Session - 1

Chair – N. J. Mitchell

0900 – 0915 Beyond the dipole: Global ionospheric modelling using the Earth's real magnetic field.

G. H. Millward⁽¹⁾, A. D. Aylward⁽¹⁾, A. D. Richmond⁽²⁾, N. Maruyama⁽²⁾ and A. Maute⁽²⁾

(1) Atmospheric Physics Lab., University College London.

(2) National Center for Atmospheric Research.

0915 – 0930 Evidence for the Tongue-of-Ionisation in the European evening sector.

A. Wood⁽¹⁾, H. R. Middleton⁽¹⁾, S. E. Pryse⁽¹⁾ and I. W. McCrea⁽²⁾

(1) Institute of Mathematical and Physical Sciences, University of Wales Aberystwyth.

(2) Department of Space Science, Rutherford Appleton Laboratory.

0930 – 0945 A statistical study of artificial plasma irregularities produced by RF heating.

H. Shergill⁽¹⁾ and T. Robinson⁽¹⁾

(1) University of Leicester.

0945 – 1000 SPEAR: Latest results, operational status and future opportunities.

T. Robinson⁽¹⁾, T. Yeoman⁽¹⁾, R. Dhillon⁽¹⁾ and M. Lester⁽¹⁾

(1) Department of Physics and Astronomy, University of Leicester.

1000 – 1015 Current-voltage relationship in the downward field-aligned current region.

A. Cran-McGreehin⁽¹⁾ and Dr A. N. Wright⁽¹⁾

(1) University of St Andrews.

1015 – 1030 Solar-terrestrial physics dataset access and science workflows with a virtual observatory: AstroGrid developments.

S. Dalla⁽¹⁾, and N.A. Walton⁽²⁾ on behalf of the AstroGrid Consortium

(1) School of Physics and Astronomy, University of Manchester.

(2) Institute of Astronomy, University of Cambridge.

1030 – 1040 PPARC national facilities and AstroGrid.

M. Pinnock⁽¹⁾

(1) British Antarctic Survey.

Session 4 – Wednesday 1115 - 1230

General Session - 2

Chair – A. M. Rymer

1115 – 1130 The International Heliophysical Year.

A. R. Breen⁽¹⁾, B. J. I. Bromage⁽²⁾ and R. A. Harrison⁽³⁾

(1) University of Wales, Aberystwyth

(2) University of Central Lancashire.

(3) Rutherford-Appleton Laboratory.

1130 – 1145 Reconstruction of solar images.

R. Henwood⁽¹⁾ and D. Willis⁽¹⁾

(1) Rutherford Appleton Laboratory.

1145 – 1200 Ulysses observations of the heliospheric current sheet at solar maximum.

S. Child⁽¹⁾ and R. Forsyth⁽¹⁾

(1) Imperial College London.

1200 – 1215 Compressibility and the role of passive scalars in solar wind plasma turbulence.

S. C. Chapman⁽¹⁾, B. Hnat⁽¹⁾ and G. Rowlands⁽¹⁾

(1) Space and Astrophysics Group, University of Warwick.

1215 – 1230 Trajectories of ions specularly reflected from non-planar collisionless shocks.

P. Newman⁽¹⁾, W. Wilkinson⁽¹⁾ and S. Ellacott⁽¹⁾

(1) School of Computing, Mathematical, and Information Sciences, University of Brighton.

Session 5 – Wednesday 1400 – 1500

The impact of Cluster in magnetospheric boundary layer science - 1

Chair – J. A. Wild

1400 – 1415 Dawn-dusk asymmetries and sub-Alfvénic flow in the high and low latitude magnetosheath.

M. Longmore⁽¹⁾, S. J. Schwartz⁽²⁾, J. Geach⁽³⁾, B. M. A. Cooling⁽⁴⁾, I. Dandouras⁽⁵⁾, E. A. Luce⁽²⁾ and A. N. Fazakerley⁽⁶⁾

(1) Astronomy Unit, Queen Mary, University of London.

(2) Blackett Laboratory, Imperial College London.

(3) Department of Physics, University of Durham.

(4) Formerly at Queen Mary, University of London.

(5) CESR-CNRS.

(6) Mullard Space Science Laboratory, University College London.

1415 – 1430 The problem of estimating wave energy transfer functions from cluster data.

I. Bates⁽¹⁾ and H. St. C. K. Alleyne⁽¹⁾

(1) Space System Group, ACSE Department, University of Sheffield.

1430 – 1445 Cluster observations of the electron-dominated boundary layer in the mid-altitude cleft/cusp.

Y. V. Bogdanova⁽¹⁾, C. J. Owen⁽¹⁾, A. N. Fazakerley⁽¹⁾, B. Klecker⁽²⁾, M. Dunlop⁽³⁾, M. Andre⁽⁴⁾, N. Cornilleau-Wehrlin⁽⁵⁾, H. Reme⁽⁶⁾ and A. Balogh⁽⁷⁾

(1) Mullard Space Science Laboratory, University College London.

(2) Max-Planck Institute für Extraterrestrische Physik.

(3) Rutherford Appleton Laboratory.

(4) Swedish Institute of Space Physics.

(5) Centre d'Etude des Environnements Terrestre et Planétaires.

(6) Centre d'Etude Spatiale des Rayonnements.

(7) Space and Atmospheric Physics Group, Imperial College London.

1445 – 1500 CLUSTER observations of waves in and around a possible reconnection diffusion region in the Earth's magnetotail current sheet.

P. Petkaki⁽¹⁾, A. Walsh⁽¹⁾, M. Freeman⁽¹⁾, A. Buckley⁽²⁾, C. Owen⁽³⁾, E. Lucek⁽⁴⁾, R. Horne⁽¹⁾ and N. Cornilleau – Wehrlin⁽⁵⁾

(1) British Antarctic Survey.

(2) Space Science Centre, School of Science and Technology, The University of Sussex.

(3) Mullard Space Science Laboratory.

(4) SPAT, Blackett Laboratory, Imperial College London.

(5) CETP/UVSQ.

Session 6 – Wednesday 1530 - 1630

The impact of Cluster in magnetospheric boundary layer science - 2

Chair – C. J. Owen

1530 – 1545 EFW analysis of boundary layer structures and FTEs observed by Cluster.

H. Khan⁽¹⁾, H. Laakso⁽¹⁾, C. Escoubet⁽¹⁾, M. Dunlop⁽²⁾, H. Opgenoorth⁽¹⁾ and A. Masson⁽¹⁾,

(1) European Space and Technology Centre, Solar and Solar Terrestrial Mission Division.

(2) Rutherford Appleton Laboratory.

1545 – 1600 A survey of high-latitude flux transfer events observed by Cluster: northward IMF.

R. C. Fear⁽¹⁾, A. N. Fazakerley⁽¹⁾, C. J. Owen⁽¹⁾ and A. Balogh⁽²⁾,

(1) Mullard Space Science Laboratory, University College London.

(2) Imperial College of Science, Technology and Medicine.

1600 – 1615 Simultaneous Cluster-Double Star observations at the high and low latitude magnetopause.

A.N. Fazakerley⁽¹⁾, M. W. Dunlop⁽²⁾, M.G.G.T. Taylor⁽¹⁾, J.A. Davies⁽²⁾, C.J. Owen⁽¹⁾, F. Pitout⁽³⁾, Z. Pu⁽⁴⁾, H. Laakso⁽⁵⁾, Q.-G. Zong⁽⁶⁾, Y. Bogdanova⁽¹⁾, C. Shen⁽⁷⁾, K. Nykyri⁽⁸⁾, P. Cargill⁽⁸⁾, C. Carr⁽⁸⁾, P. Escoubet⁽⁵⁾, B. Lavraud⁽⁹⁾, M. Lockwood⁽²⁾, S.E. Milan⁽¹⁰⁾, T.D. Phan⁽¹¹⁾, H. Reme⁽¹²⁾ and B. Sonnerup⁽¹³⁾.

(1) MSSL-UCL.

(2) RAL.

(3) MPE.

(4) PKU.

(5) ESTEC.

(6) Boston University.

(7) CSSAR.

(8) ICSTM.

(9) LANL.

(10) Leicester University.

(11) UC-Berkeley.

(12) CESR.

(13) Dartmouth College.

1615 – 1630 Double Star, Cluster, and ground-based observations of magnetic reconnection during an interval of duskward oriented IMF.

J. A. Wild⁽¹⁾, S. E. Milan⁽¹⁾, J. A. Davies⁽²⁾, S. W. H. Cowley⁽¹⁾, C. M. Carr⁽³⁾, A. Balogh⁽³⁾, J. M. Bosqued⁽⁴⁾, H. Reme⁽⁴⁾, A. N. Fazakerley⁽⁵⁾, A. Marchudon⁽⁵⁾, P. W. Daly⁽⁶⁾, H. Laakso⁽⁷⁾ and S. Buchert⁽⁸⁾

(1) Dept. of Physics & Astronomy, University of Leicester.

(2) Rutherford Appleton Laboratory.

(3) Blackett Laboratory, Imperial College London.

(4) CESR/CNRS.

(5) Mullard Space Science Laboratory, University College London.

(6) Max Planck Institute for Solar System Research.

(7) Space Science Department, ESTEC.

(8) Swedish Institute of Space Physics.

1630-1830 Poster Session

Session 7 – Thursday 0900 - 1030

Signatures of magnetic reconnection in the ionosphere

Chair – G. Chisham

0900 – 0915 Simultaneous observations of ionospheric flow and tail reconnection signatures during the substorm expansion phase.

M. Lester⁽¹⁾, M. Parkinson⁽²⁾, J.A. Wild⁽¹⁾, S.E. Milan⁽¹⁾, T. Nagai⁽³⁾, K.A. McWilliams⁽⁴⁾, P. Dyson⁽²⁾, H.J. Singer⁽⁵⁾ and H. Frey⁽⁶⁾

(1) Department of Physics and Astronomy, University of Leicester.

(2) School of Physics, La Trobe University.

(3) Tokyo Institute of Technology.

(4) Department of Physics and Engineering Physics, University of Saskatchewan.

(5) NOAA Space Environment Center.

(6) Space Science Laboratory, University of California.

0915 – 0930 Modulation of dayside reconnection by solar wind pressure pulses during northward IMF.

G. Provan⁽¹⁾, M. Lester⁽¹⁾, S. W. H. Cowley⁽¹⁾, A. Grocott⁽¹⁾, S.E.Milan⁽¹⁾ and B. Hubert⁽²⁾,

(1) Department of Physics and Astronomy, University of Leicester.

(2) Laboratoires de Physique Atmosphérique et Planétaire, Université de Liège.

0930 – 0945 Dayside flow bursts and high latitude reconnection when the IMF is strongly northward.

H.Hu^(1,2), T.Yeoman⁽¹⁾ and M.Lester⁽¹⁾

(1) University of Leicester.

(2) Polar Research Institute of China.

0945 – 1000 Interhemispheric study of ionospheric flow at the dayside.

A. Goudarzi⁽¹⁾, M. Lester⁽¹⁾ and S. E. Milan⁽¹⁾

(1) Radio and Space Plasma Physics, Department of Physics & Astronomy, University of Leicester.

1000 – 1015 Ionospheric plasma near the adiaroic boundary under small clock angle IMF.

S E Pryse⁽¹⁾, R W Sims⁽¹⁾, J Moen⁽²⁾ and K Oksavik⁽²⁾

(1) University of Wales, Aberystwyth.

(2) University of Oslo.

1015 – 1030 Characteristics of night time spike events.

A.Aminaei⁽¹⁾ and F.Honary⁽¹⁾

(1) Lancaster University.

Session 8 – Thursday 1100 - 1230

General Session - 3

Chair – H. Khan

1100 – 1115 Cluster and ground-based observations of the effects of strong solar winds during geomagnetic storms.

N. Balan⁽¹⁾, H. Alleyne⁽¹⁾, S. Walker⁽¹⁾, H. Reme⁽²⁾, A. Balogh⁽³⁾, N. Cornilleau⁽⁴⁾, S.-R. Zhang⁽⁵⁾, T. van Eyken⁽⁶⁾, A. N. Fazakerley⁽⁷⁾ and P. M. E. Decreau⁽⁸⁾

(1) Control and Systems Engineering, University of Sheffield.

(2) CNRS, CESR.

(3) Blackett Laboratory, Imperial College.

(4) CETP/CNRS.

(5) MIT Haystack Observatory.

(6) EISCAT.

(7) Uni. College, London.

(8) LPCE/CNRS.

1115 – 1130 Energetic electron decay timescales in the Earth's outer radiation belt .

N. P. Meredith⁽¹⁾, R. B. Horne⁽¹⁾ and R. R. Anderson⁽²⁾

(1) British Antarctic Survey.

1130 – 1145 A Critical test of electron acceleration in the Van Allen radiation belts.

R. B. Horne⁽¹⁾, R. M. Thorne⁽²⁾, N. P. Meredith⁽¹⁾, A. J. Smith⁽¹⁾, S. A. Glauert⁽¹⁾, M. Engebretson⁽³⁾, J. Posch⁽³⁾, Y. Shprits⁽²⁾, S. Kanekal⁽⁴⁾, D. Baker⁽⁴⁾, J. Pickett⁽⁵⁾ and D. A. Gurnett⁽⁵⁾

(1) British Antarctic Survey.

(2) U. of California, Los Angeles.

(3) Augsburg College.

(4) Laboratory for Atmospheric and Space Physics, U. of Colorado.

(5) U. of Iowa.

1145 – 1200 The association of Substorm Chorus Events with drift echoes of substorm injected electrons.

G. A. Abel⁽¹⁾, M. P. Freeman⁽¹⁾, A. J. Smith⁽¹⁾ and G. D. Reeves⁽²⁾

(1) British Antarctic Survey.

(2) Los Alamos National Laboratory.

1200 – 1215 Electron precipitation during sawtooth Injections.

A. J. Kavanagh⁽¹⁾, A. Aasnes⁽²⁾, G. Lu⁽³⁾ and F. Honary⁽¹⁾

(1) Lancaster University.

(2) University of Bergen.

(3) High Altitude Observatory.

1215 – 1230 Cluster observations of flux rope structures in the near tail.

P. Henderson⁽¹⁾, C. J. Owen⁽¹⁾, A. N. Fazakerley⁽¹⁾, A. Balogh⁽²⁾ and J. Slavin⁽³⁾

(1) Mullard Space Science Laboratory, University College London.

(2) Imperial College London.

(3) NASA Goddard Space Flight Centre.

POSTERS – Wednesday 1630 - 1830

P1 - A statistical test of the assumptions used to form a minimal substorm model and the complications of the intrinsic correlations in the solar wind.

G. A. Abel⁽¹⁾, M. P. Freeman⁽¹⁾, A. J. Smith⁽¹⁾ and E. I. Tanskanen⁽²⁾

(1) British Antarctic Survey.

(2) NASA, Goddard Space Flight Center.

P2 - Global modelling of the Kronian magnetospheric magnetic field.

C. S. Arridge⁽¹⁾, K. K. Khurana⁽²⁾ and M. K. Dougherty⁽¹⁾

(1) Space and Atmospheric Physics, Imperial College London.

(2) Institute of Geophysics and Planetary Physics, University of California.

P3 - PMSE overshoot: recent EISCAT results.

A. D. Aylward⁽¹⁾, G. O. L. Jones⁽¹⁾, O. Havnes⁽²⁾, C. La Hoz⁽²⁾ and others

(1) Atmospheric Physics Lab, University College London.

(2) Dept of Physics, University of Tromsø.

P4 – First simultaneous MLT and themospheric F-region observations.

N. Balan⁽¹⁾, S. Kawamura⁽²⁾, T. Nakamura⁽³⁾, M. Yamamoto⁽³⁾, S. Fukao⁽³⁾ and H. Alleyne⁽¹⁾

(1) Control and Systems Engineering, University of Sheffield.

(2) NITC, Tokyo.

(3) RISH Kyoto Unisversity.

P5 - Correlation dimension analysis of current reversal models.

I. Bates⁽¹⁾, M. Balikhin⁽¹⁾, M. Gedalin⁽²⁾, G. Consolini⁽³⁾ and R. A. Treumann⁽⁴⁾

(1) Space Systems Group, ACSE Department, University of Sheffield.

(2) Ben-Gurion University.

(3) Istituto di Fisica dello Spazio Interplanetario.

(4) Max-Planck-Institute for Extraterrestrial Physics.

P6 – Geomagnetic Effects of the 28th October 2003 Solar Flare

M. Beharrell⁽¹⁾, P. Verronen⁽²⁾, F. Honary⁽¹⁾ and E. Turunen⁽²⁾

(1) Lancaster University.

(2) Sodankylä Geophysical Observatory.

P7 - The terdiurnal and quardiurnal tides in the mesosphere and lower thermosphere over the UK.

C. L. Beldon⁽¹⁾ and N. J. Mitchell⁽¹⁾

(1) Department of Electronic & Electrical Engineering, University of Bath.

P8 - Extremely long-baseline Interplanetary scintillation measurements of solar wind speed and direction.

A. R. Breen⁽¹⁾, R. A. Fallows⁽¹⁾, M. M. Bisi⁽¹⁾, P. Thomasson⁽²⁾ and R. A. Jones⁽¹⁾

(1) University of Wales, Aberystwyth.

(2) Jodrell Bank Observatory, University of Manchester.

P9 - Preliminary visualisation of wave particle interactions detected by the cluster dwp/correlator.

E. C. Chambers⁽¹⁾, T. D. Carozzi⁽¹⁾, M. P. Gough⁽¹⁾ and A. M. Buckley⁽¹⁾

(1) Space Science Centre, University of Sussex.

P10 - Identifying the open-closed field line boundary in the ionosphere using the SuperDARN HF radar network.

G. Chisham⁽¹⁾, M. P. Freeman⁽¹⁾ and T. Sotirelis⁽²⁾

(1) British Antarctic Survey.

(2) Applied Physics Laboratory, Johns Hopkins University.

P11 - Neutral temperature from auroral spectroscopy.

O. Jokiah⁽¹⁾, B. Lanchester⁽¹⁾, N. Ivchenko⁽²⁾, G. Daniell⁽¹⁾ and L. Miller⁽¹⁾

(1) University of Southampton.

(2) Alfvén Laboratory KTH.

P12 - Introducing CMAT2 - Geomagnetic influences on the terrestrial atmosphere.

A. Lyons⁽¹⁾, M. Harris⁽¹⁾ and N. Arnold⁽¹⁾

(1) Department of Physics and Astronomy, University of Leicester.

P13 - Modelling the response of the F-region to SAPS.

B. Pinter⁽¹⁾, S. D. Thom⁽¹⁾, R. L. Balthazor⁽¹⁾ and H. Vo⁽²⁾

(1) Department of Applied Mathematics, University of Sheffield.

(2) The University of Wales, Aberystwyth.

P14 - Observations of lunar tides in the mesosphere and lower thermosphere at arctic and middle latitudes.

D. J. Sandford⁽¹⁾ and N. J. Mitchell⁽¹⁾

(1) Department of Electronic and Electrical Engineering, University of Bath.

P15 - Naturally enhanced ESR spectra and their relation to observed auroral features.

J. Sullivan⁽¹⁾, B. Lanchester⁽¹⁾, M. Lockwood⁽¹⁾ and N. Ivchenko⁽²⁾

(1) University of Southampton.

(2) Alfvén Laboratory KTH.

P16 - Magnetospheric and ionospheric magnetic field modelling within the GEOSPACE consortium.

E. E. Woodfield⁽¹⁾ and R. Holme⁽¹⁾

(1) Dept. Earth and Ocean Sciences, University of Liverpool.

P17 - Electron density dynamics of the storm-time ionosphere over Europe and the USA.

P. Yin⁽¹⁾ and C. Mitchell⁽¹⁾

(1) Department of Electronic and Electric Engineering, University of Bath.