

## Radio & Space Plasma Physics Group Publications

Group authors are shown boldface

### Calendar Year 2003

#### *Refereed Research Papers*

- 03-01 Amm, O., A. Aikio, J.-M. Bosqued, M. Dunlop, A. Fazakerley, P. Janhunen, K. Kauristie, **M. Lester**, I. Sillanpaa, M.G.G.T. Taylor, A. Vonrat-Reberac, K. Mursula, and M. Andre, Mesoscale structure of a morning sector ionospheric shear flow region determined by conjugate Cluster II and MIRACLE ground-based observations, *Ann. Geophysicae*, **21**, 1737-1751, 2003.
- 03-02 **Arnold, N.F.**, Space plasma influences on the Earth's atmosphere, *Phil. Trans. Roy. Soc. Lond.* **361**(A),127-132, 2003.
- 03-03 **Arnold, N.F.**, and **T.R. Robinson**, Solar cycle modulation of the winter stratosphere: the role of atmospheric gravity waves, *Adv. Space Res.*, **31**, 2121-2126, 2003
- 03-04 **Arnold N.F.**, **P.A. Cook**, **T.R. Robinson**, **M. Lester**, and N. Mitchell, Validation of meteor winds measured by the CUTLASS Finland HF radar over an annual cycle by the Esrange VHF radar, *Ann. Geophysicae*, **21**, 2073-2082, 2003.
- 03-05 Borisov, N.D., and **T.R. Robinson**, Transformation of an EM pump wave into upper hybrid resonance oscillations in striations in a vertically inhomogeneous ionosphere, *Phys. Lett. A.*, **315**,126-135, 2003.
- 03-06 **Bunce, E.J.**, and **S.W.H. Cowley**, A note on the ring current in Saturn's magnetosphere: Comparison of magnetic data obtained during the Pioneer-11 and Voyager-1 and -2 fly-bys, *Ann. Geophysicae*, **21**, 661-669, 2003.
- 03-07 **Bunce, E.J.**, **S.W.H. Cowley**, and **J.A. Wild**, Azimuthal magnetic fields in Saturn's magnetosphere: Effects associated with plasma sub-corotation and the magnetopause-tail current system, *Ann. Geophysicae*, **21**, 1709-1722, 2003.
- 03-08 **Cowley, S.W.H.**, and **E.J. Bunce**, Modulation of Jupiter's main auroral oval emissions by solar wind-induced expansions and compressions of the magnetosphere, *Planet. Space Sci.*, **51**, 57-79, 2003.
- 03-09 **Cowley, S.W.H.**, and **E.J. Bunce**, Modulation of jovian middle magnetosphere currents and auroral precipitation by solar wind-induced compressions and expansions of the magnetosphere: Initial conditions and steady state, *Planet. Space Sci.*, **51**, 31-56, 2003.
- 03-10 **Cowley, S.W.H.**, and **E.J. Bunce**, Corotation-driven magnetosphere-ionosphere coupling currents in Saturn's magnetosphere and their relation to the auroras, *Ann. Geophysicae*, **21**, 1691-1707, 2003.

- 03-11 **Cowley, S.W.H., E.J. Bunce, and J.D. Nichols**, Origins of Jupiter's main oval auroral emissions, *J. Geophys. Res.*, **108** (A4), 8002, doi:10.1029/2002JA009329, 2003.
- 03-12 **Cowley, S.W.H., E.J. Bunce, T.S. Stallard, and S. Miller**, Jupiter's polar ionospheric flows: theoretical interpretation, *Geophys. Res. Lett.*, **30**(5), 1220, doi:10.1029/2002GL016030, 2003.
- 03-13 **Cowley, S.W.H., J.A. Davies, A. Grocott, H. Khan, M. Lester, K.A. McWilliams, S.E. Milan, G. Provan, P.E. Sandholt, J.A. Wild, and T.K. Yeoman**, Solar wind-magnetosphere-ionosphere interactions in the Earth's plasma environment, *Phil. Trans. A*, **361**, 113-126, 2003.
- 03-14 Ganushkina, N.Yu, **T. Karhunen**, M.V. Kubyshkina, Y. Ebihara, V.A. Sergeev, T.I. Pulkkinen, and T.A. Fritz, Locations of proton isotropic boundaries as measured by conjugate high-altitude and low-altitude satellites, *Adv. Space Res.*, **31**, 1265-1270, 2003.
- 03-15 **Grocott, A., S.W.H. Cowley, and J.B. Sigwarth**, Ionospheric flows and magnetic disturbance during extended intervals of northward but By-dominated IMF, *Ann. Geophysicae*, **21**, 509-538, 2003.
- 03-16 Grodent, D., J.T. Clarke, J. Kim, J.H. Waite, Jr., and **S.W.H. Cowley**, Jupiter's main oval observed with HST-STIS, *J. Geophys. Res.*, **108** (A11), 1389, doi:10.1029/2003JA009921, 2003.
- 03-17 Grodent, D., J.T. Clarke, J.H. Waite, Jr., **S.W.H. Cowley**, J.-C. Gérard, and J. Kim, Jupiter's polar auroral emissions, *J. Geophys. Res.*, **108** (A10), 1366, doi:10.1029/2003JA010017, 2003.
- 03-18 Hosokawa, K., **E.E. Woodfield, M. Lester, S.E. Milan**, A.S. Yukimatu, N. Sato, and T. Iyemori, Interhemispheric comparison of spectral width boundary as observed by the SuperDARN radars, *Ann. Geophysicae*, **21**, 1553-1565, 2003.
- 03-19 **Khan, H., M. Lester, J.A. Davies, S.E. Milan**, and P.E. Sandholt, Multi-instrument study of the dynamic cusp during dominant IMF By conditions, *Ann. Geophysicae*, **21**, 693-708, 2003.
- 03-20 **Lester, M.**, Ionospheric convection and its relevance for Space Weather, *Adv. Space Res.*, **31**, (4), 941-950, 2003.
- 03-21 Lockwood, M., B.S. Lanchester, H. Frey, K. Throp, S. Morley, **S.E. Milan**, and **M. Lester**, IMF control of cusp proton emission intensity and dayside convection: implications for component and anti-parallel reconnection, *Ann. Geophysicae*, **21**, 955-982, 2003.
- 03-22 Maynard, N.C., D.M. Ober, W.J. Burke, J.D. Scudder, **M. Lester**, M.W. Dunlop, **J.A. Wild, A. Grocott**, C.J. Farrugia, E. Lund, C.T. Russell, D.R. Weimer, K.D. Siebert, A. Balogh, M. Andre, and H. Rème, Polar, Cluster and SuperDARN evidence for high latitude merging during southward IMF: Temporal/spatial evolution, *Ann. Geophysicae*, **21**, 2233-2258, 2003.
- 03-23 Maynard, N.C., W.J. Burke, J. Moen, P.E. Sandholt, **M. Lester**, D. Ober, D.R. Weimer, and W.W. White, Bifurcation of the cusp: Implications for understanding

boundary layers, Earth's Low Latitude Boundary Layer, pp 319-328, Patrick T. Newell and Terry Onsager (Eds), *AGU Geophysical Monograph*, 133, 2003.

- 03-24 Maynard, N.C., W.J. Burke, J. Moen, D.M. Ober, J.D. Scudder, J.B. Sigwarth, G.L. Siscoe, B.U.Ö. Sonnerup, W.W. White, K.D. Siebert, D.R. Weimer, G.M. Erickson, L.A. Frank, **M. Lester**, W.K. Peterson, C.T. Russell, G.R. Wilson, and A. Egeland, Response of the open-closed field line boundary in the evening sector to IMF changes: A source mechanism for Sun-aligned arcs, *J. Geophys. Res.*, **108**(A1), 1006, doi:10.1029/2001JA000174, 2003.
- 03-25 Menk, F.W., **T.K. Yeoman**, **D.M. Wright**, **M. Lester**, and F. Honary, High latitude observations of ULF pulsations in the ionosphere and on the ground, *Ann. Geophysicae*, **21**, 559-576, 2003.
- 03-26 **Milan, S.E.**, **M. Lester**, and N. Sato, Multi-frequency observations of E region HF radar aurora, *Ann. Geophysicae*, **21**, 761-777, 2003.
- 03-27 **Milan, S.E.**, **M. Lester**, **S.W.H. Cowley**, K. Oksavik, M. Brittnacher, R.A. Greenwald, G. Sofko, and J.-P. Villain, Variations in polar cap area during two substorm cycles, *Ann. Geophysicae*, **21**, 1121-1140, 2003.
- 03-28 **Milan, S.E.**, N. Sato, **M. Lester**, Y. Murata, Y. Shinkai, H. Doi, H.U. Frey, and T. Saemundsson, E region echo characteristics governed by auroral arc electrodynamics, *Ann. Geophysicae*, **21**, 1567-1575, 2003.
- 03-29 **Nichols, J.D.**, and **S.W.H. Cowley**, Magnetosphere-ionosphere coupling currents in Jupiter's middle magnetosphere: Dependence on the effective ionospheric Pedersen conductivity and iogenic plasma mass outflow rate, *Ann. Geophysicae*, **21**, 1419-1441, 2003.
- 03-30 Ogawa, T., **N.F. Arnold**, S. Kirkwood, N. Nishitani, and **M. Lester**, Finland HF and ESRANGE MST radar observations of polar mesosphere summer echoes, *Ann. Geophysicae*, **21**, 1047-1055, 2003.
- 03-31 Rietveld, M.T., M.J. Kosch, N.F. Blagoveshchenskaya, V. A. Kornienko, T. B. Leyser, and **T.K. Yeoman**, Ionospheric electron heating, optical emissions and striations induced by powerful HF radio waves at high latitudes: aspect angle dependence, *J. Geophys. Res.*, **108**(A4), 1141, doi:10.1029/2002JA9543, 2003.
- 03-32 Sandholt, P.E., J. Moen, C.J. Farrugia, **S.W.H. Cowley**, **M. Lester**, **S.E. Milan**, C. Valladares, W.F. Denig, and S. Eriksson, Multi-site observations of the association between aurora and plasma convection in the cusp/polar cap during a southeastward ( $B_y \approx |B_z|$ ) IMF orientation, *Ann. Geophysicae*, **21**, 539-558, 2003.
- 03-33 Sandholt, P.E., C.J. Farrugia, W.F. Denig, **S.W.H. Cowley**, and **M. Lester**, Spontaneous and driven cusp dynamics: Optical aurora, particle precipitation, and plasma convection, *Planet. Space Sci.*, **51**, 797-812, 2003.
- 03-34 Senior, C., J.-C. Cerisier, A. Thorolfsson and **M. Lester**, Propagation in the ionosphere of convection changes following a sharp IMF  $B_y$  transition, *J. Geophys. Res.*, in press, 2003.

- 03-35 Stallard, T.S., S. Miller, **S.W.H. Cowley**, and **E.J. Bunce**, Jupiter's polar ionospheric flows: measured intensity and velocity variations poleward of the main auroral oval, *Geophys. Res. Lett.*, **30(5)**, 1221, doi:10.1029/2002GL016031, 2003.
- 03-36 Stocker, A.J., E.M. Warrington, and **T.B. Jones**, A comparison of observed and modelled deviations from the great circle direction for a 4490 km HF propagation path along the mid-latitude ionospheric trough, *Radio Sci.*, **38(3)**, 1054, doi:10.1029/2002RS002781, 2003.
- 03-37 Trattner, K.J., S.A. Fuselier, **T.K. Yeoman**, A. Korth, M. Fraenz, C. Mouikis, H. Kucharek, L.M. Kistler, C.P. Escoubet, H. Reme, I. Dandouras, J.A. Sauvaud, J.M. Bosqued, B. Klecker, C. Carlson, T. Phan, J.P. McFadden, M.B. Bavassano-Cattaneo, and L. Eliasson, Cusp Structures: Combining multispacecraft observations with ground observations, *Ann. Geophysicae*, **21**, 2031-2041, 2003.
- 03-38 **Wild, J.A.**, **S.E. Milan**, **S.W.H. Cowley**, M.W. Dunlop, C.J. Owen, M.G.G.T. Taylor, **J.A. Davies**, **M. Lester**, N. Sato, A.S. Yukimatu, A.N. Fazakerley, and A. Balogh, Coordinated interhemispheric SuperDARN radar observations of the ionospheric response to flux transfer events observed by the Cluster spacecraft at the high-latitude magnetopause, *Ann. Geophysicae*, **21**, 1807-1826, 2003.
- 03-39 **Wright, D.M.**, **J.A. Davies**, **T.R. Robinson**, **T.K. Yeoman**, **M. Lester**, and R.J. Strangeway, Detection of artificially generated ULF waves by the FAST spacecraft and its application to the "tagging" of narrow flux tubes, *J. Geophys. Res.*, **108(A2)**, 1090, doi:10.1029/2002JA009483, 2003.

#### *Unrefereed Papers*

- 03-40 **Arnold, N.F.**, Soarly MIST, *Astr. and Geophysics*, **44 (3)**, 26-28, 2003.
- 03-41 **Lester, M.**, Ionospheric convection during magnetospheric substorms, *Proc. Sixth Internat. Conf. on Substorms*, ICS-6, Ed. R.M. Winglee, Washington University Press, 85-91, 2003.
- 03-42 Moen, J., J.K. Bekkeng, A. Pedersen, J.G. Aase, H. de Feraudy, F. Soraas, T.A. Blix, **M. Lester**, and S.E. Pryse, ICI-1: A new sounding rocket concept to observe micro-scale physics in the cusp ionosphere, Proc. 16th ESA PAC Symposium on European Rocket and Balloon Programmes and Related Research, St. Gallen Switzerland 2-5 June, 2003, in press, *ESA SP-530*, 2003.
- 03-43 **Cowley, S.W.H.**, Book review: "Auroral Plasma Physics" edited by G. Paschmann, S.E. Haaland and R.A. Teumann, *The Observatory*, **123**, 395, 2003.

#### *Ph.D. and M.Phil. Theses*

- 03-44 **Baddeley, L.J.**, Wave-particle interactions in the terrestrial magnetosphere, Ph.D. Thesis, University of Leicester, 2003.