

## British Antarctic Survey publications 2011

### Publications are listed by programme

\*\* = NERC employees who are not BAS staff

++ = collaborators in UK universities

%% = collaborators in the UK non-university public sector

## = overseas collaborators

\$\$ = commercial sector collaborators

### Q4 PROGRAMMES: GLOBAL SCIENCE IN THE ANTARCTIC CONTEXT

#### GEACEP: Greenhouse to Icehouse. Evolution of the Antarctic Cryosphere and Palaeoenvironment

##### Refereed research papers 2011 listed in ISI database

STEVENSON, J.A.++, GILBERT, J.S.++, MCGARVIE, D.W.++, SMELLIE, J.L. 2011. Explosive rhyolite tuya formation: classic examples from Kerlingarfjöll, Iceland. *Quaternary Science Reviews*, **30**, No. 1-2, 192-209

#### GRADES: Glacial Retreat in Antarctica and Deglaciation of the Earth System

##### Refereed research papers 2011 listed in ISI database

RIPPIN, D.M.##, VAUGHAN, D.G., CORR, H.F.J. 2011. The basal roughness of Pine Island Glacier, West Antarctica. *Journal of Glaciology*, **57**, No. 201, 67-76

### POLAR SCIENCE FOR PLANET EARTH

#### PSPE - Chemistry and Past Climate

##### Refereed research papers 2011 listed in ISI database

ABRAM, N.J., MULVANEY, R., ARROWSMITH, C.\*\* 2011. Environmental signals in a highly resolved ice core from James Ross Island, Antarctica. *Journal of Geophysical Research (Atmospheres)*, **116**, 15p

ALLEN, C.S., PIKE, J.++, PUDSEY, C.J.++ 2011. Last glacial-interglacial sea-ice cover in the SW Atlantic and its potential role in global deglaciation. *Quaternary Science Reviews*, **30**, 2446-2458

ANDERSEN, M.B.++, VANCE, D.++, ARCHER, C.++, ANDERSON, R.F.##, ELLWOOD, M.J.##, ALLEN, C.S. 2011. The Zn abundance and isotopic composition of diatom frustules, a proxy for Zn availability in ocean surface seawater. *Earth and Planetary Science Letters*, **301**, No. 1-2, 137-145

ARCHIBALD, A.T.%, **LEVINE, J.G.**, ABRAHAM, N.L.++, COOKE, M.C.++, EDWARDS, P.M.++, HEARD, D.E.++, JENKIN, M.E.++, KARUNAHARAN, A.++, PIKE, R.C.++, MONKS, P.S.++, SHALLCROSS, D.E.++, TELFORD, P.J.++, WHALLEY, L.K.++, PYLE, J.A.++ 2011. Impacts of HO<sub>x</sub> regeneration and recycling in the oxidation of isoprene: Consequences for the composition of past, present and future atmospheres. *Geophysical Research Letters*, **38**, No. 5L05804, 10.1029/2010GL046520, 6p

BARKER, S.++, KNORR, G.##, EDWARDS, R.L.##, PARRENIN, F.##, PUTNAM, A.E.##, SKINNER, L.C.++, **WOLFF, E.W.**, ZIEGLER, M.++ 2011. 800,000 years of abrupt climate variability. *Science*, **335**, No. 6054, 347-351

**BAUGUITTE, S.J.**, BROUGH, N., FREY, M.M., JONES, A.E., MAXFIELD, D.J., **ROSCOE, H.K.**, ROSE, M.C., **WOLFF, E.W.** 2011. A network of autonomous surface ozone monitors in Antarctica: technical description and first results. *Atmospheric Measurement Techniques*, **4**, No. 4, 645-658

D'ARRIGO, R.##, **ABRAM, N.J.**, UMMENHOFER, C.##, PALMER, J.##, MUDELSEE, M.## 2011. Reconstructed streamflow for Citarum River, Java, Indonesia: linkages to tropical climate dynamics. *Climate Dynamics*, **36**, No. 3-4, 451-462

DALEY, T.J.++, **THOMAS, T.J.**, HOLMES, J.A.++, STREET-PERROTT, A.++, CHAPMAN, M.R.++, TINDALL, J.C.++, VALDES, P.J.++, LOADER, N.J.++, MARSHALL, J.D.++, **WOLFF, E.W.**, HOPLEY, P.J.++, ATKINSON, T.++, BARBER, K.E.++, FISHER, E.H.++, ROBERTSON, I.++, HUGHES, P.D.M.++, ROBERTS, C.N.++ 2011. The 8200 yr BP cold event in stable isotope records from the North Atlantic region. *Global and Planetary Change*, **79**, No. 3-4, 288-302.

FERNANDEZ-CARAZO, R.##, **HODGSON, D.A.**, CONVEY, P., WILMOTTE, A.## 2011. Low cyanobacterial diversity in biotopes of the Transantarctic Mountains and Shackleton Range (80-82° S), Antarctica. *FEMS Microbiology Ecology*, **77**, No. 3. 503-517

FIETZ, S.##, MARTÍNEZ-GARCIA, A.##, RUEDA, G.##, **PECK, V.L.**, HUGUET, C.##, ESCALA, M.##, ROSELL-MELÉ, A.## 2011. Crenarchaea and phytoplankton coupling in sedimentary archives: Common trigger or metabolic dependence? *Limnology and Oceanography*, **56**, No. 5, 1907-1916

FRANCE, J.L.++, KING, M.D.++, **FREY, M.M.**, ERBLAND, J.##, PICARD, G.##, PREUNKERT, S.##, MACARTHUR, A.\*\*, SAVARINO, J.## 2011. Snow optical properties at Dome C, (Concordia), Antarctica: implications for snow emissions and snow chemistry of reactive nitrogen. *Atmospheric Chemistry and Physics*, **11**, No. 18, 9787-9801

HALL, I.R.++, COLMENERO-HIDALGO, E.++, ZAHN, R.##, **PECK, V.L.**, HEMMING, S.R.## 2011. Centennial- to millennial-scale ice-ocean interactions in the subpolar northeast Atlantic 18 to 41 ka ago. *Paleoceanography*, **25**, No. 4, PA2224, 18p

HARRISON, R.M.++, DALL'OSTO, M.##, BEDDOWS, D.C.S.++, **BENTON, A.K.**, and 28 others. 2011. Atmospheric chemistry and physics in the atmosphere of a developed megacity (London): an overview of the REPARTEE experiment and its conclusions. *Atmospheric Chemistry and Physics Discussions*, **11**, No. 11, 30145-30271

HENDRY, K.R.##, RICKABY, R.E.M.++, ALLEN, C.S. 2011. Changes in micronutrient supply to the surface Southern Ocean (Atlantic Sector) across the glacial termination. *Geochemistry, Geophysics, Geosystems*, **12**, No. 9, Q09007, 11p

HODGSON, D.A. 2011. First synchronous retreat of ice shelves marks a new phase of polar deglaciation. *Proceedings of the National Academy of Sciences*, **108**, No. 47, 18859-18860

HOLDEN, P.B.++, EDWARDS, N.R.++, WOLFF, E.W., VALDES, P.J.++, SINGARAYER, J.S.++ 2011. The Mid-Brunhes Event and West Antarctic Ice Sheet stability. *Journal of Quaternary Science*, **26**, No. 5, 474-477

HOLMES, J.++, LOWE, J.++, WOLFF, E., SROKOSZ, M.\*\* 2011. Rapid climate change: lessons from the recent geological past. *Global and Planetary Change*, **79**, No. 3-4, 157-162

JONES, A.E., WOLFF, E.W., AMES, D.++, BAUGUITTE, S.J.B., CLEMITSHAW, K.C.++, FLEMING, Z.++, MILLS, G.P.++, SAIZ-LOPEZ, A.++, SALMON, R.A., STURGES, W.T.++, WORTON, D.R.++ 2011. The multi-seasonal NO<sub>y</sub> budget in coastal Antarctica and its link with surface snow and ice core nitrate: results from the CHABLIS campaign. *Atmospheric Chemistry and Physics*, **11**, No. 17, 9271-9285

KLAUENBERG, K.++, BLACKWELL, P.G.++, BUCK, C.E.++, MULVANEY, R., RÖTHLISBERGER, R.##, WOLFF, E.W. 2011. Bayesian glaciological modelling to quantify uncertainties in ice core chronologies. *Quaternary Science Reviews*, **30**, 21-22, 2961-2975

LANG, N.J., WOLFF, E.W. 2011. Interglacial and glacial variability from the last 800 ka in marine, ice and terrestrial archives. *Climate of the Past*, **7**, No. 2, 361-380

LEVINE, J.G, WOLFF, E.W., JONES, A.E., SIME, L.C. 2011. The role of atomic chlorine in glacial-interglacial changes in the carbon-13 content of atmospheric methane. *Geophysical Research Letters*, **38**, No. 4, L04801, 10.1029/2010GL046122, 6p

LEVINE, J.G, WOLFF, E.W., JONES, A.E., HUTTERLI, M.A., WILD, O.++, CARVER, G.D.++, PYLE, J.A.++ 2011. In search of an ice core signal to differentiate between source-driven and sink-driven changes in atmospheric methane. *Journal of Geophysical Research (Atmospheres)*, **116**, D5, D05305, 10.1029/2010JD014878, 15p

LEVINE, J.G, WOLFF, E.W., JONES, A.E., SIME, L.C., VALDES, P.J.++, ARCHIBALD, A.T.++, CARVER, G.D.++, WARWICK, N.J.++, PYLE, J.A.++ 2011. Reconciling the changes in atmospheric-methane sources and sinks between the Last Glacial Maximum and the pre-industrial era. *Geophysical Research Letters*, **38**, No. 23, L23804, 6p

LIAO, J.##, HUEY, L.G.##, TANNER, D.J.##, BROUGH, N., BROOKS, S.##, DIBB, J.E.##, STUTZ, J.##, THOMAS, J.L.##, LEFER, B.##, HAMAN, C.##, GORHAM, K.## 2011. Observations of hydroxyl and peroxy radicals and the impact of BR0 at Summit, Greenland in 2007 and 2008. *Atmospheric Chemistry and Physics*, **11**, No. 16, 8577-8591

MASSON-DELMOTTE, V.##, BRACONNOT, P.##, HOFFMANN, G.##, JOUZEL, J.##, KAGEYAMA, M.##, LANDAIS, A.##, LEJEUNE, Q.##, RISI, C.##, **SIME, L.**, SJOLTE, J.##, SWINGEDOUW, D.##, VINTHER, B.## 2011. Sensitivity of interglacial Greenland temperature and  $\delta^{18}\text{O}$ : ice core data, orbital and increased  $\text{CO}_2$  climate simulations. *Climate of the Past*, **7**, No. 3, 1041-1059

MASSON-DELMOTTE, V.##, BUIRON, D.##, EKAYKIN, A.##, FREZZOTTI, M.##, GALLÉE, H.##, JOUZEL, J.##, KRINNER, G.##, LANDAIS, A.##, MOTOYAMA, H.##, OERTER, H.##, POL, K.##, POLLARD, D.##, RITZ, C.##, SCHLOSSER, E.##, **SIME, L.C.**, SODEMANN, H.##, STENNI, B.##, UEMURA, R.##, VIMEUX, F.## 2011. A comparison of the present and last interglacial periods in six Antarctic ice cores. *Climate of the Past*, **7**, No. 2, 397-423

PEARSON, E.J.++, JUGGINS, S.++, TALBOT, H.M.++, WECKSTRÖM, J.##, ROSÉN, P.##, RYVES, D.B.++, **ROBERTS, S.J.**, SCHMIDT, R.++ 2011. A lacustrine GDGT-temperature calibration from the Scandinavian Arctic to Antarctic: Renewed potential for the application of GDGT-paleothermometry in lakes. *Geochimica et Cosmochimica Acta*, **75**, 20, 6225-6238

PEETERS, K.##, **HODGSON, D.A.**, CONVEY, P., WILLEMS, A.## 2011. Culturable diversity of heterotrophic bacteria in Forlidas Pond (Pensacola Mountains) and Lundström Lake (Shackleton Range), Antarctica. *Microbial Ecology*, **62**, No. 2, 399-413

**ROBERTS, S.J.**, **HODGSON, D.A.**, STERKEN, M.##, WHITEHOUSE, P.L.++, VERLEYEN, E.##, VYVERMAN, W.##, SABBE, K.++, **BALBO, A.**, BENTLEY, M.J.++, MORETON, S.G. 2011. Geological constraints on glacio-isostatic adjustment models of relative sea-level change during deglaciation of Prince Gustav Channel, Antarctic Peninsula. *Quaternary Science Reviews*, **30**, No. 25-26, 3603-3617

**ROSCOE, H.K.**, VAN ROOZENDAEL, M.##, FAYT, C.##, ET AL. 2011. Intercomparison of slant column measurements of  $\text{NO}_2$  and  $\text{O}_4$  by MAX-DOAS and zenith-sky UV and visible spectrometers. *Atmospheric Measurement Techniques*, **3**, No. 6, 1629-1646

**ROSCOE, H.K.**, BROOKS, B.++, JACKSON, A.V.++, SMITH, M.H.++, WALKER, S.J., **OBBARD, R.W.**, **WOLFF, E.W.** 2011. Frost flowers in the laboratory: growth, characteristics, aerosol, and the underlying sea ice. *Journal of Geophysical Research*, **116**, D12, D12301, 10.1029/2010JD015144, 12p.

**SIME, L.C.**, **WOLFF, E.W.** 2011. Antarctic accumulation seasonality. *Nature*, **479**, No. 7372, 6p

**SIME, L.C.**, HINDMARSH, R.C.A., CORR, H.F.J. 2011. Instruments and methods. Automated processing to derive dip angles of englacial radar reflectors in ice sheets. *Journal of Glaciology*, **57**, No. 202, 260-266

**SIME, L.C.**, LANG, N.J., THOMAS, E.R., BENTON, A.K., MULVANEY, R. 2011. On high-resolution sampling of short ice cores: Dating and temperature information recovery from Antarctic Peninsula virtual cores. *Journal of Geophysical Research (Atmospheres)*, **116**, D20, 17p

STENNI, B.##, BUIRON, D.##, FREZZOTTI, M.##, ET AL , **MULVANEY, R.**, ET AL. 2011. Expression of the bipolar see-saw in Antarctic climate records during the last deglaciation. *Nature Geoscience*, **4**, No. 1, 46-49

VERLEYEN, E.##, **HODGSON, D.A.**, SABBE, K.##, CREMER, H.##, EMSLIE, S.D.##, GIBSON, J.##, HALL, B.##, IMURA, S.##, KUDOH, S.##, **MARSHALL, G.J.**, MCMINN, A.##, MELLES, M.##, NEWMAN, L.##, ROBERTS, D.##, **ROBERTS, S.J.**, SINGH, S.M.##, STERKEN, M.##, TAVERNIER, I.##, VERKULICH, S.##, VAN de VYVER, E.##, Van NIEUWENHUYZE, W.##, WAGNER, B.##, VYVERMAN, W.## 2011. Post-glacial regional climate variability along the East Antarctic coastal margin - evidence from shallow marine and coastal terrestrial records. *Earth-Science Reviews*, **104**, Issue 4, 199-212

WATCHAM, E.P.++, BENTLEY, M.J.++, **HODGSON, D.A.**, **ROBERTS, S.J.**, **FRETWELL, P.T.**, LLOYD, J.M.++, **LARTER, R.D.**, WHITEHOUSE, P.L.++, LENG, M.J.\*\*, MONIEN, P.##, MORETON, S.G.\*\* 2011. A new Holocene relative sea level curve for the South Shetland Islands, Antarctica. *Quaternary Science Reviews*, **30**, 21-22, 3152-3170

**WOLFF, E.W.** 2011. Greenhouse gases in the Earth system: a palaeoclimate perspective. *Philosophical Transactions of the Royal Society of London, Series A*, **369**, No. 1943, 2133-2147

**WOLFF, E.W.** 2011. Methane and monsoons. *Nature*, **470**, No. 7332, 49-50

**WOLFF, E.W.**, BARBANTE, C.##, GOOSSE, H.##, KIEFER, T.##, ROUSSEAU, D.-D.## 2011. Clarifications about the concept and review process of Climate of the Past. *Journal of Atmospheric and Solar-Terrestrial Physics*, **73**, No. 13, 2043

### **Unrefereed publications**

**WOLFF, E.** 2011. Climate change and ice cores. *Teaching Earth Sciences*, **36**, No. 2, 26-29

**WOLFF, E.W.**, **OWENS, N.J.P.**, **RODGER, A.S.** 2011. Icy response. (Letter to Radio Times), 46

### **Book chapter**

GAGAN, M.K.##, **ABRAM, N.J.** 2011. Stable isotope and trace elements. In: Hopley, D. ed. Encyclopedia of modern coral reefs: structure, form and process. Springer

### PSPE – Climate

### **Refereed research papers 2011 listed in ISI database**

BAGESTON, J.V.##, WRASSE, C.M.##, **HIBBINS, R.E.**, BATISTA, P.P.##, GOBBI, D.##, TAKAHASHI, H.##, FRITTS, D.C.##, ANDRIOLI, V.F.##, FECHINE, J.##,

- DENARDINI, C.M.## 2011. Case study of a mesospheric wall event over Ferraz Station, Antarctica (62°S). *Annales Geophysicae*, **29**, No. 1, 209–219.
- BAUMGAERTNER, A.J.G.##, SEPPÄLÄ, A., JÖCKEL, P.##, CLILVERD, M.A. 2011. Geomagnetic activity related NO<sub>x</sub> enhancements and polar surface air temperature variability in a chemistry climate model: modulation of the NAM index. *Atmospheric Chemistry and Physics*, **11**, No. 9, 4521-4531
- BORTNIK, J.##, CHEN, L.##, LI, W.##, THORNE, R.M.##, HORNE, R.B. 2011. Modeling the evolution of chorus waves into plasmaspheric hiss. *Journal of Geophysical Research (Space Physics)*, **116**, No. A8, A08221, 13p
- BORTNIK, J.##, OMIDI, N.##, CHEN, L.##, THORNE, R.M.##, HORNE, R.B. 2011. Saturation characteristics of electromagnetic ion cyclotron waves. *Journal of Geophysical Research (Space Physics)*, **116**, No. A9, A09219, 10p
- BORTNIK, J.##, CHEN, L.##, LI, W.##, THORNE, R.M.##, MEREDITH, N.P., HORNE, R.B. 2011. Modeling the wave power distribution and characteristics of plasmaspheric hiss. *Journal of Geophysical Research (Space Physics)*, **116**, No., A12, A12209, 14p
- BRACEGIRDLE, T.J. 2011. The seasonal cycle of stratosphere-troposphere coupling at southern high latitudes associated with the semi-annual oscillation in sea-level pressure. *Climate Dynamics*, **37**, No. 11-12, 2323-2333
- CHEN, L.J.##, THORNE, R.M.##, JORDANOVA, V.K.##, THOMSEN, M.F.##, HORNE, R.B. 2011. Magnetosonic wave instability analysis for proton ring distributions observed by the LANL magnetospheric plasma analyzer. *Journal of Geophysical Research (Space Physics)*, **116**, No. A3, A03223, 11p
- CNOSSEN, I., LU, H., BELL, C.J.++, GRAY, L.J.++, JOSHI, M.M.++ 2011. Solar signal propagation: the role of gravity waves and stratospheric sudden warmings. *Journal of Geophysical Research (Atmospheres)*, **116**, No. D2, D02118, doi:10.1029/2010JD014535, 14p.
- CNOSSEN, I., LU, H. 2011. The vertical connection of the quasi-biennial oscillation - modulated 11-year solar cycle signature in geopotential height and planetary waves during Northern Hemisphere early winter. *Journal of Geophysical Research (Atmospheres)*, **116**, D13D13101, 15p.
- COLLIER, A.B.##, LICHTENBERGER, J.##, CLILVERD, M.A., RODGER, C.J.##, STEINBACH, P. 2011. Source region for whistlers detected at Rothera, Antarctica. *Journal of Geophysical Research (Space Physics)*, **116**, No. A3, A03219, 13p
- COMPO, G.P.##, WHITAKER, J.S.##, SARDESHMUKH, P.D.##, MATSUI, N.##, ALLAN, R.J.%, YIN, X., GLEASON, B.E.##, VOSE, R.S.##, RUTLEDGE, G.##, BESSEMOULIN, P.##, BRÖNNIMANN, S.##, BRUNET, M.##, CROUTHAMEL, R.I.##, GRANT, A.N.##, GROISMAN, P.Y.##, JONES, P.D.++, KRUK, M.C.##, KRUGER, A.C.##, MARSHALL, G.J., MAUGERI, M.##, MOK, H.Y.##, NORDLI, Ø.##, ROSS, T.F.##, TRIGO, R.M.##, WANG, X.L.##, WOODRUFF, S.D.##, WORLEY, S.J.## 2011.

The Twentieth Century Reanalysis project. *Quarterly Journal of the Royal Meteorological Society*, **137**, No. 654, 1-28

DAY, K.A.++, **HIBBINS, R.E.**, MITCHELL, N.J.## 2011. Aura MLS observations of the westward-propagating s=1, 16-day planetary wave in the stratosphere, mesosphere and lower thermosphere. *Atmospheric Chemistry and Physics*, **11**, No. 9, 4149-4161

FOK, M.-C.##, GLOCER, A.##, ZHENG, Q.##, **HORNE, R.B.**, **MEREDITH, N.P.**, ALBERT, J.M.##, NAGAI, T.## 2011. Recent developments in the radiation belt environment model. *Journal of Atmospheric and Solar-Terrestrial Physics*, **73**, No. 11-12, 1435-1443

**HIBBINS, R.E.**, **FREEMAN, M.P.**, MILAN, S.E.##, RUOHONIEMI, J.M.## 2011. Winds and tides in the mid-latitude Southern Hemisphere upper mesosphere recorded with the Falkland Islands SuperDARN radar. *Annales Geophysicae*, **29**, No. 11, 1985–1996.

JUSTINO, F.##, SETZER, A.##, **BRACEGIRDLE, T.J.**, MENDES, D.##, GRIMM, A.##, DECHICHE, G.##, SCHAEFER, C.E.G.R.## 2011. Harmonic analysis of climatological temperature over Antarctica: present day and greenhouse warming perspectives. *International Journal of Climatology*, **31**, No. 4, 514-530

**KIRCHGÄßNER, A.** 2011. An analysis of precipitation data from the Antarctic base Faraday/Vernadsky. *International Journal of Climatology*, **31**, No. 3, 404-414

LEONARD, K.C.##, **MAKSYM, T.** 2011. The importance of wind blown snow redistribution to snow accumulation on Bellingshausen Sea ice. *Annals of Glaciology*, **52**, No. 57, 271-278

LI, Y.##, **LU, H.**, **JARVIS, M.J.**, **CLILVERD, M.A.**, BATES, B.## 2011. Nonlinear and nonstationary influences of geomagnetic activity on the winter North Atlantic Oscillation. *Journal of Geophysical Research (Atmospheres)*, **116**, D16, D16109, 15p

LINDERS, T.##, SAETRA, Ø.##, **BRACEGIRDLE, T.J.** 2011. Limited polar low sensitivity to sea-surface temperature. *Quarterly Journal of the Royal Meteorological Society*, **137**, No. 654, 58-69

**LU, H.**, **JARVIS, M.J.** 2011. Is the stratospheric quasi-biennial oscillation affected by solar wind dynamic pressure via an annual cycle modulation? *Journal of Geophysical Research (Atmospheres)*, **116**, D6, D06117, 14p

**LU, H.**, **JARVIS, M.J.**, GRAY, L.J.++, BALDWIN, M.P.## 2011. High- and low-frequency 11-year solar cycle signatures in the Southern Hemispheric winter and spring. *Quarterly Journal of the Royal Meteorological Society*, **137**, No. 659, 1641-1656

McDONALD, A.J.##, **HIBBINS, R.E.**, **JARVIS, M.J.** 2011. Properties of the quasi-16 wave derived from EOS MLS observations. *Journal of Geophysical Research (Atmospheres)*, **116**, D6, D06112, 16p

MARKUS, T.##, MASSOM, R.##, WORBY, A.##, LYTLE, V.I.##, KURTZ, N.##, **MAKSYM, T.** 2011. Freeboard, snow depth and sea-ice roughness in East Antarctica from in-situ and multiple satellite data. *Annals of Glaciology*, **52**, No. 57, 242-248

**MARSHALL, G.J.**, DI BATTISTA, S.##, NAIK, S.S.##, THAMBAN, M.## 2011. Analysis of a regional change in the sign of the SAM-temperature relationship in Antarctica. *Climate Dynamics*, **36**, No. 1-2, 277-287

**MEREDITH, N.P.**, **HORNE, R.B.**, LAM, M.M.++, DENTON, M.H.++, BOROVSKY, J.E.##, GREEN, J.C.## 2011. Energetic electron precipitation during high-speed solar wind stream driven storms. *Journal of Geophysical Research*, **116**, No. A5, A05223, 10.1029/2010JA016293, 15p

**MOFFAT-GRIFFIN, T.**, **HIBBINS, R.E.**, **JARVIS, M.J.**, **COLWELL, S.R.** 2011. Seasonal variations of gravity wave activity in the lower stratosphere over an Antarctic Peninsula station. *Journal of Geophysical Research*, **116**, D14111, 10p

**NEWNHAM, D.A.**, ESPY, P.J.##, **CLILVERD, M.A.**, RODGER, C.J.##, **SEPPÄLÄ, A.**, **MAXFIELD, D.J.**, HARTOGH, P.##, HOLMÉN, K.##, **HORNE, R.B.** 2011. Direct observations of nitric oxide produced by energetic electron precipitation into the Antarctic middle atmosphere. *Geophysical Research Letters*, **38**, No. 20, L20104, 5p

NI, B.##, THORNE, R.M.##, SHPRITS, Y.Y.##, ORLOVA, K.G.##, **MEREDITH, N.P.** 2011. Chorus-driven resonant scattering of diffuse auroral electrons in non-dipolar magnetic fields. *Journal of Geophysical Research (Space Physics)*, **116**, No. A6, A06225, 12p

NI, B., THORNE, R.M., MEREDITH, N.P., SHPRITS, Y.Y., HORNE, R.B. 2011. Diffuse auroral scattering by whistler mode chorus wave: Dependence on wave normal distribution. *Journal of Geophysical Research*, **116**, A10, A10207, 12p

NI, B.##, THORNE, R.M.##, **HORNE, R.B.**, **MEREDITH, N.P.**, SHPRITS, Y.Y.##, CHEN, L.##, LI, W. 2011. Resonant scattering of plasma sheet electrons leading to diffuse auroral precipitation: 1. Evaluation for electrostatic electron cyclotron harmonic waves. *Journal of Geophysical Research (Space Physics)*, **116**, No. A4, A04218, 18p

NI, B.##, THORNE, R.M.##, **MEREDITH, N.P.**, **HORNE, R.B.**, SHPRITS, Y.Y.## 2011. Resonant scattering of plasma sheet electrons leading to diffuse auroral precipitation: 2. Evaluation for whistler-mode chorus waves. *Journal of Geophysical Research (Space Physics)*, **116**, No. A4, A04219, 17p

**ROSCOE, H.K.**, ROSENLOF, K.H.## 2011. Revisiting the lower stratospheric water vapour trend from 1950s to 1970s. *Atmospheric Science Letters*, **12**, No. 4, 321–324.

SALMI, S.M.##, VERRONEN, P.T.##, THÖLIX, L.##, KYRÖLÄ, E.##, BACKMAN, L.##, KARPECHKO, A.Yu.##, **SEPPÄLÄ, A.** 2011. Mesosphere-to-stratosphere descent of odd nitrogen in February-March 2009 after sudden stratospheric warming. *Atmospheric Chemistry and Physics*, **11**, No. 10, 4645-4655

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