

British Antarctic Survey publications 2004

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

Q3 programmes

Signals in Antarctica of Past Global Changes

Refereed research papers 2004 listed in ISI database

BARNES P.R.F. & WOLFF E.W. 2004. Distribution of soluble impurities in cold glacial ice. *Journal of Glaciology*, **50**, No. 170, 311-324.

DARLING K.F.++, KUCERA M.++, **PUDSEY C.J.** & WADE C.M.++ 2004. Molecular evidence links cryptic diversification in polar planktonic protists to Quaternary climate dynamics. *Proceedings of the National Academy of Sciences*, **101**, No. 20, 7657-7662.

DOWDESWELL J.A.++, Ó COFAIGH C.++ & **PUDSEY C.J.** 2004. Continental slope morphology and sedimentary processes at the mouth of an Antarctic palaeo-ice stream. *Marine Geology*, **204**, No. 1-2, 203-214.

DOWDESWELL J.A.++, Ó COFAIGH C.++ & **PUDSEY C.J.** 2004. Thickness and extent of the subglacial till layer beneath an Antarctic paleo-ice stream. *Geology*, **32**, No. 1, 13-16.

EPICA COMMUNITY MEMBERS## (Authors include **P.R.F. Barnes, G. Littot, R. Mulvaney, D.A. Peel & E.W. Wolff**) 2004. Eight glacial cycles from an Antarctic ice core. *Nature*, **429**, No. 6992, 623-628.

HODGSON D.A., VYVERMAN W.##, VERLEYEN E.##, SABBE K.##, LEAVITT P.R.##, TATON A.##, SQUIER A.H.++ & KEELY B.J.++ 2004. Environmental factors influencing the pigment composition of *in situ* benthic microbial communities in east Antarctic lakes. *Aquatic Microbial Ecology*, **37**, 247-263.

HOFSTEDÉ C.M.##, VAN DE WAL R.S.W.##, KASPERS K.A.##, VAN DEN BROEKE M.R.##, KARLÖF L.##, WINTHER J.-G.##, ISAKSSON E.##, LAPPEGARD G.##, **MULVANEY R.**, OERTER H.## & WILHELMS F.## 2004. Firn accumulation records for the past 1000 years on the basis of dielectric profiling of six cores from Dronning Maud Land, Antarctica. *Journal of Glaciology*, **50**, No. 169, 279-291.

KALESCHKE L.##, RICHTER A.##, BURROWS J.##, AFE O.##, HEYGSTER G.##, NOTHOLT J.##, **RANKIN A.M., ROSCOE H.K.**, HOLLWEDEL J.##,

WAGNER T.## & JACOBI H.-W.## 2004. Frost flowers on sea ice as a source of sea salt and their influence on tropospheric halogen chemistry. *Geophysical Research Letters*, **31**, No. 16, L16114, doi:10.1029/2004GL020655, 4p.

MORRIS E.M. & MULVANEY R. 2004. Recent variations in surface mass balance of the Antarctic Peninsula ice sheet. *Journal of Glaciology*, **50**, No. 169, 257-267.

MURRAY J.W.** & PUDSEY C.J. 2004. Living (stained) and dead foraminifera from the newly ice-free Larsen Ice Shelf, Weddell Sea, Antarctica: ecology and taphonomy. *Marine Micropaleontology*, **53**, 67-81.

PLANCHON F.A.M.## and 13 others (including **E.W. WOLFF**). 2004. Direct determination of mercury at the sub-picogram per gram level in polar snow and ice by ICP-SFMS. *Journal of Analytical Atomic Spectroscopy*, **19**, No. 7, 823-830.

RANKIN A.M., WOLFF E.W. & MULVANEY R. 2004. A reinterpretation of sea-salt records in Greenland and Antarctic ice cores? *Annals of Glaciology*, **39**, 276-282.

RÖTHLISBERGER R., BIGLER M.##, WOLFF E.W., JOOS F.##, MONNIN E.## & HUTTERLI M.A.## 2004. Ice core evidence for the extent of past atmospheric CO₂ change due to iron fertilisation. *Geophysical Research Letters*, **31**, No. 16, L16207, 10.1029/2004GL020338, 4p.

RUTH U.##, WAGENBACH D.##, **MULVANEY R.**, OERTER H.##, GRAF W.##, PULZ H.## & **LITTOT G.C.** 2004. Comprehensive 1000 year climatic history from an intermediate-depth ice core from the south dome of Berkner Island Antarctica: methods dating and first results. *Annals of Glaciology*, **39**, 146-154.

SABBE K.##, **HODGSON D.A.**, VERLEYEN E.##, TATON A.##, WILMOTTE A.##, VANHOUTTE K.## & VYVERMAN W.## 2004. Salinity depth and the structure and composition of microbial mats in continental Antarctic lakes. *Freshwater Biology*, **49**, No. 3, 296-319.

SQUIER A.H.++, AIRS R.L.++, **HODGSON D.A.** & KEELY B.J.++ 2004. Atmospheric pressure chemical ionisation liquid chromatography/mass spectrometry of the ultraviolet screening pigment scytonemin: characteristic fragmentations. *Rapid Communications in Mass Spectrometry*, **18**, 2934-2938.

SQUIER A.H.++, **HODGSON D.A.** & KEELY B.J.++ 2004. A critical assessment of the analysis and distributions of scytonemin and related UV screening pigments in sediments. *Organic Geochemistry*, **35**, 1221-1228.

SQUIER A.H.++, **HODGSON D.A.** & KEELY B.J.++ 2004. Identification of bacteriopheophytin *a* esterified with geranylgeraniol in an Antarctic lake sediment. *Organic Geochemistry*, **35**, 203-207.

SQUIER A.H.++, **HODGSON D.A.** & KEELY B.J.++ 2004. Structures and profiles of novel sulfur-linked chlorophyll derivatives in an Antarctic lake sediment. *Organic Geochemistry*, **35**, 1309-1318.

STAUFFER B.##, FLÜCKIGER J.##, **WOLFF E.W.** & **BARNES P.R.F.** 2004. The EPICA deep ice cores: first results and perspectives. *Annals of Glaciology*, **39**, 93-100.

UDISTI R.##, BECAGLI S.##, BENASSAI S.##, DE ANGELIS M.##, HANSSON M.E.##, JOUZEL J.##, SCHWANDER J.##, STEFFENSEN J.P.##, TRAVERSI R.## & **WOLFF E.W.** 2004. Sensitivity of chemical species to climatic changes in the last 45 kyrs as revealed by high resolution Dome C (Antarctica) ice-core analysis. *Annals of Glaciology*, **39**, 457-466.

UDISTI R.##, BECAGLI S.##, CASTELLANO E.##, DELMONTE B.##, JOUZEL J.##, PETIT J.R.##, SCHWANDER J.##, STENNI B.## & **WOLFF E.W.** 2004. Stratigraphic correlations between the European Project for Ice Coring in Antarctica (EPICA) Dome C and Vostok ice cores showing the relative variations of snow accumulation over the past 45 kyr. *Journal of Geophysical Research*, **109**, No. D8, D08101, doi:10.1029/2003JD004180, 10p.

VERLEYEN E.##, **HODGSON D.A.**, LEAVITT P.R.##, SABBE K.## & VYVERMAN W.## 2004. Quantifying habitat-specific diatom production: a critical assessment using morphological and biochemical markers in Antarctic marine and lake sediments. *Limnology and Oceanography*, **49**, No. 5, 1528-1539.

VERLEYEN E.##, **HODGSON D.A.**, SABBE K.##, VANHOUTTE K.## & VYVERMAN W.## 2004. Coastal oceanographic conditions in the Prydz Bay region (East Antarctica) during the Holocene recorded in an isolation basin. *Holocene*, **14**, No. 2, 246-257.

VERLEYEN E.##, **HODGSON D.A.**, SABBE K.## & VYVERMAN W.## 2004. Late Quaternary deglaciation and climate history of the Larsemann Hills (East Antarctica). *Journal of Quaternary Science*, **19**, No. 4, 361-375.

WILSON M.A.++, **HODGSON D.A.** & KEELY B.J.++ 2004. Structural variations in derivatives of the bacteriochlorophylls of Chlorobiaceae: impact of stratigraphic resolution on depth profiles as revealed by methanolysis. *Organic Geochemistry*, **35**, 1299-1307.

Refereed research papers 2004 NOT listed in ISI database

WOLFF E.W., CHAPPELLAZ J., FISCHER H., KULL C., STOCKER T.F. & WATSON, A.J. 2004. The EPICA challenge to the Earth system modeling community. *Eos. Transactions, American Geophysical Union*, **85**, No. 38 (2004), 363.

Book chapters

HODGSON D.A., DORAN P.T.##, ROBERTS D.## & MCMINN A.## 2004. Paleolimnological studies from the Antarctic and subantarctic islands. (In Pienitz, R., Douglas, M.S.V. & Smol, J.P., eds. Long-term environmental change in Arctic and Antarctic lakes. *Developments in paleoenvironmental research*; vol. 8. Dordrecht, Springer, 419-474.)

Unrefereed publications

BOLMER S.T.##, BEARDSLEY R.C.##, **PUDSEY C.J.**, **MORRIS P.**, WIEBE P.##, HOFMANN E.E.##, ANDERSON J.## & MALDONADO A.## 2004. A high-resolution bathymetry map for the Marguerite Bay and adjacent West Antarctic Peninsula Shelf for the Southern Ocean GLOBEC Program. *Woods Hole Oceanographic Institution technical report*, WHOI-2004-02, 78p.

WOLFF E.W. 2004. Revealing Antarctica's secrets. *Education in Chemistry*, **41**, No. 5, 132-135.

Global Interactions of the Antarctic Ice Sheet

Refereed research papers 2004 listed in ISI database

ANDERSON B.M.##, **HINDMARSH R.C.A.** & LAWSON W.J.## 2004. A modelling study of the response of Hatherton Glacier to Ross Ice Sheet grounding line retreat. *Global and Planetary Change*, **42**, No. 1-4, 143-153.

HINDMARSH R.C.A. 2004. A numerical comparison of approximations to the Stokes equations used in ice sheet and glacier modeling. *Journal of Geophysical Research*, **109**, No. F1, F01012, doi:10.1029/2003JF000065, 15p.

HINDMARSH R.C.A. 2004. Thermoviscous stability of ice-sheet flows. *Journal of Fluid Mechanics*, **502**, Pt. 1, 17-40.

ISMAL COMMITTEE## (authors include **R.C.A. Hindmarsh** and **D.G. Vaughan**). 2004. Recommendations for the collection and synthesis of Antarctic Ice Sheet mass balance data. *Global and Planetary Change*, **42**, No. 1-4, 1-15.

JENKINS A., HOLLAND D.M.##, **NICHOLLS K.W.**, SCHRÖDER M.## & ØSTERHUS S.## 2004. Seasonal ventilation of the cavity beneath Filchner-Ronne Ice Shelf simulated with an isopynic coordinate ocean model. *Journal of Geophysical Research*, **109**, No. C1, C01024, doi:10.1029/2001JC001086, 12p.

JOUGHIN I.## & **VAUGHAN D.G.** 2004. Marine ice beneath the Filchner-Ronne Ice Shelf Antarctica: a comparison of estimated thickness distributions. *Annals of Glaciology*, **39**, 511-517.

KING E.C., WOODWARD J. & SMITH A.M. 2004. Seismic evidence for a water-filled canal in deforming till beneath Rutford Ice Stream, West Antarctica. *Geophysical Research Letters*, **31**, No. 20, L20401, doi:10.1029/2004GL020379, 4p.

LEYSINGER VIELI G.J.-M.C.## & GUDMUNDSSON G.H. 2004. On estimating length fluctuations of glaciers caused by changes in climatic forcing. *Journal of Geophysical Research*, **109**, No. F1, F01007, doi:10.1029/2003JF00002, 7 14p.

NICHOLLS K.W. & ØSTERHUS S.## 2004. Interannual variability and ventilation timescales in the ocean cavity beneath Filchner-Ronne Ice Shelf, Antarctica. *Journal of Geophysical Research*, **109**, No. C4, C04014, doi:10.1029/2003JC002149, 9p.

NICHOLLS K.W., MAKINSON K. & ØSTERHUS S.## 2004. Circulation and water masses beneath the northern Ronne Ice Shelf, Antarctica. *Journal of Geophysical Research*, **109**, No. C12, C12017, doi:10.1029/2004JC002302, 11p.

NICHOLLS K.W., PUDSEY C.J. & MORRIS P. 2004. Summertime water masses off the northern Larsen C Ice Shelf, Antarctica. *Geophysical Research Letters*, **31**, No. 9, L09309, doi:10.1029/2004GL019924, 4p.

RIPPIN D.M.++, BAMBER J.L.++, SIEGERT M.J.++, VAUGHAN D.G. & CORR H.F.J. 2004. The role of ice thickness and bed properties on the dynamics of the enhanced-flow tributaries of Bailey Ice Stream and Slesor Glacier, East Antarctica. *Annals of Glaciology*, **39**, 366-372.

SCHULER T.##, FISCHER U.H.## & GUDMUNDSSON G.H. 2004. Diurnal variability of subglacial drainage conditions as revealed by tracer experiments. *Journal of Geophysical Research*, **109**, No. F2, F02008, doi:10.1029/2003JF000082, 13p.

SIEGERT M.J.++, HINDMARSH R.C.A., CORR H.F.J., SMITH A.M., WOODWARD J.++, KING E.C., PAYNE A.J.++ & JOUGHIN I.## 2004. Subglacial Lake Ellsworth: a candidate for *in situ* exploration in West Antarctica. *Geophysical Research Letters*, **31**, No. 23, L23403, doi:10.1029/2004GL021477, 4p.

SIEGERT M.J.++, WELCH B.##, MORSE D.##, VIELI A.++, BLANKENSHIP D.D.##, JOUGHIN I.##, KING E.C., LEYSINGER VIELI G.J.-M.C.++, PAYNE A.J.++ & JACOBEL R.++ 2004. Ice flow direction change in interior West Antarctica. *Science*, **305**, No. 5692, 1948-1951.

SMEDSRUD L.H. & JENKINS A. 2004. Frazil ice formation in an ice shelf water plume. *Journal of Geophysical Research*, **109**, No. C3, C03025, doi:10.1029/2003JC001851, 15p.

SUGIYAMA S.## & GUDMUNDSSON G.H. 2004. Short-term variations in glacier flow controlled by subglacial water pressure at Lauteraargletscher, Bernese Alps, Switzerland. *Journal of Glaciology*, **50**, No. 170, 353-362.

VAUGHAN D.G., ANDERSON P.S., KING J.C., MANN G.W.++, MOBBS S.D.++ & LADKIN R.S. 2004. Imaging of firm isochrones across an Antarctic ice rise and implications for patterns of snow accumulation rate. *Journal of Glaciology*, **50**, No. 170, 413-418.

WILDING M.C.##, SMELLIE J.L., MORGAN S.++, LESHER C.E.## & WILSON L.++ 2004. Cooling process recorded in subglacially erupted rhyolite glasses: rapid quenching, thermal buffering, and the formation of meltwater. *Journal of Geophysical Research*, **109**, No. B8, B08201, doi:10.1029/2003JB002721, 13p.

Unrefereed publications

JENKINS A., HAYES D., BRANDON M.++, POZZI-WALKER Z.++, HARDY S.++ & BANKS C.++ 2004. Oceanographic observations at the Amundsen Sea shelf break. *Forum for Research into Ice Shelf Processes (FRISP)*, No. 15, 17-22.

JOHNSON J.S. 2004. Ancient Antarctica. *Planet Earth*, Spring 2004, 32.

MAKINSON K. & SCHRÖDER M.## 2004. Ocean processes and seasonal inflow along Ronne Ice Front. *Forum for Research into Ice Shelf Processes (FRISP)*, No. 15, 11-16.

NICHOLLS K.W., MAKINSON K. & ØSTERHUS S.## 2004. Ronne inflow experiment – fieldwork. *Forum for Research into Ice Shelf Processes (FRISP)*, No. 15, 37-42.

SANDHÄGER H.##, VAUGHAN D.G. & LAMBRECHT A.## 2004. Meteoric, marine and total ice thickness maps of Filchner-Ronne-Schelfeis. *Forum for Research into Ice Shelf Processes (FRISP)*, No. 15, 23-30.

STEWART C., RIGNOT E.##, STEFFEN K.##, CULLEN N.## & HUFF R.## 2004. Basal topography and thinning rates of Petermann Gletscher, northern Greenland, measured by ground-based phase-sensitive radar. *Forum for Research into Ice Shelf Processes (FRISP)*, No. 15, 43-48.

Antarctic Climate Processes

Refereed research papers 2004 listed in ISI database

CONNOLLEY W.M., GREGORY J.M.%%, HUNKE E.## & McLAREN A.J.%% 2004. On the consistent scaling of terms in the sea-ice dynamics equation. *Journal of Physical Oceanography*, **34**, No. 7, 1776-1780.

CURRY J.A.##, BENTAMY A.##, BOURASSA M.A.## & 20 others, including I.A. RENFREW. 2004. SEAFLUX. *Bulletin of the American Meteorological Society*, **85**, No. 3, 409-424.

HARANGOZO S.A. 2004. The impact of winter ice retreat on Antarctic winter sea-ice extent and links to the atmospheric meridional circulation. *International Journal of Climatology*, **24**, No. 8, 1023-1044.

HARANGOZO S.A. 2004. The relationship of Pacific deep tropical convection to the winter and springtime extratropical atmospheric circulation of the South Pacific in El Niño events. *Geophysical Research Letters*, **31**, No. 5, L05206, doi:10.1029/2003GL018667, 4p.

KASPERS K.A.##, van der WAL R.S.W.##, VAN DEN BROEKE M.R.##, SCHWANDER J.##, van **LIPZIG N.P.M.** & BRENNINKMEIJER C.A.M.## 2004. Model calculations of the age of firm air across the Antarctic continent. *Atmospheric Chemistry and Physics*, **4**, 1365-1380.

KING J.C., ANDERSON P.S., VAUGHAN D.G., MANN G.W.++, MOBBS S.D.++ & VOSPER S.B.%% 2004. Wind-borne redistribution of snow across an Antarctic ice rise. *Journal of Geophysical Research*, **109**, No. D11, D11104, doi:10.1029/2003JD004361, 12p.

LIU A.Q.##, MOORE G.W.K.##, TSUBOKI K.## & **RENFREW I.A.** 2004. A high-resolution simulation of convective roll clouds during a cold-air outbreak. *Geophysical Research Letters*, **31**, No. 3, L03101, doi:10.1029/2003GL018530, 4p.

MARSHALL G.J., STOTT P.A.++, TURNER J., CONNOLLEY W.M., KING J.C. & LACHLAN-COPE T.A. 2004. Causes of exceptional atmospheric circulation changes in the Southern Hemisphere. *Geophysical Research Letters*, **31**, No. 14, L14205, doi:10.1029/2004GL019952, 4p.

MASSOM R.A.##, POOK M.J.##, COMISO J.C.##, ADAMS N.##, **TURNER J., LACHLAN-COPE T.A. & GIBSON T.T.##** 2004. Precipitation over the interior East Antarctic Ice Sheet related to midlatitude blocking-high activity. *Journal of Climate*, **17**, No. 10, 1914-1928.

MEREDITH M.P.**, **RENFREW I.A., CLARKE A., KING J.C. & BRANDON M.A.++** 2004. Impact of the 1997/98 ENSO on upper ocean characteristics in Marguerite Bay, western Antarctic Peninsula. *Journal of Geophysical Research*, **109**, No. C9, C09013, doi:10.1029/2003JC001784, 19p.

ORR A.++, CRESSWELL D.++, **MARSHALL G.J., HUNT J.C.R.++, SOMMERIA J.##, WANG C.G.++ & LIGHT M.++** 2004. A 'low-level' explanation for the recent large warming event trend over the western Antarctic Peninsula involving blocked winds and changes in zonal circulation. *Geophysical Research Letters*, **31**, No. 6, L06204, doi:10.1029/2003GL019160, 4p.

RENFREW I.A. 2004. The dynamics of idealised katabatic flow over a moderate slope and ice shelf. *Quarterly Journal of the Royal Meteorological Society*, **130**, Pt. A, No. 598, 1023-1045.

RUSSELL A.++, MCGREGOR G.R.++ & **MARSHALL G.J.** 2004. An examination of the precipitation delivery mechanisms for Dolleman Island eastern Antarctic Peninsula. *Tellus*, **56A**, No. 5, 501-513.

SIMMONDS I.## & **KING J.C.** 2004. Global and hemispheric climate variations affecting the Southern Ocean. *Antarctic Science*, **16**, No. 4, 401-413.

TURNER J. 2004. The El Niño-Southern Oscillation and Antarctica. 2004. *International Journal of Climatology*, **24**, No. 1, 1-31.

TURNER J., COLWELL S.R., MARSHALL G.J., LACHLAN-COPE T.A., CARLETON A.M.##, JONES P.D.++, LAGUN V.##, REID P.A.## & IAGOVKINA S.## 2004. The SCAR READER Project: toward a high-quality database of mean Antarctic meteorological observations. *Journal of Climate*, **17** No. 14, 2890-2898.

van LIPZIG N.P.M., KING J.C., LACHLAN-COPE T.A. & VAN DEN BROEKE M.R.## 2004. Precipitation, sublimation and snow drift in the Antarctic Peninsula region from a regional atmospheric model. *Journal of Geophysical Research*, **109**, No. D24, D24106, doi:10.1029/2004JD004701, 16p.

van LIPZIG N.P.M., TURNER J., COLWELL S.R. & VAN DEN BROEKE M.R.## 2004. The near-surface wind field over the Antarctic continent. *International Journal of Climatology*, **24**, No. 15, 1973-1982.

Refereed research papers 2004 NOT listed in ISI database

VAN DEN BROEKE M.R.##, **van LIPZIG N.P.M. & MARSHALL G.J.** 2004. On Antarctic climate and change. *Weather*, **59**, No. 1, 3-7.

Books and other edited volumes

FAHRBACH E., HALL J. & TURNER J., *eds.* 2004. The role of the Southern Ocean in global processes: an earth system science approach. *Antarctic Science*, **16**, No. 4, [226p.]

TURNER T. & PENDLEBURY S., *eds.* 2004. *The international Antarctic weather forecasting handbook*. Cambridge, British Antarctic Survey, 663p.

Unrefereed papers

RENFREW I.A. 2004. Review of *Climate into the 21st century* by the World Meteorological Organization, edited by W. Burroughs. Cambridge University Press, 2003. *Weather*, **59**, No. 4, 108.

Magnetic Reconnection, Substorms and their Consequences

Refereed research papers 2004 listed in ISI database

ABEL G.A., SMITH A.J., MEREDITH N.P.++ & ANDERSON R.R.## 2004. The temporal evolution of substorm-enhanced whistler-mode waves: relationship between space-based observations ground-based observations and energetic electrons. *Journal of Geophysical Research*, **109**, No. A10, A10207, doi:10.1029/2004JA010407, 11p.

CHAPMAN S.C.++, DENDY R.O.%% & WATKINS N.W. 2004. Robustness and scaling: key observables in the complex dynamic magnetosphere. *Plasma Physics and Controlled Fusion*, **46**, No. 12B, B157-B166.

CHISHAM G. & FREEMAN M.P. 2004. An investigation of latitudinal transitions in the SuperDARN Doppler spectral width parameter at different magnetic local times. *Annales Geophysicae*, **22**, No. 4, 1187-1202.

CHISHAM G., FREEMAN M.P., COLEMAN I.J., PINNOCK M., HAIRSTON M.R.##, LESTER M.++ & SOFKO G.## 2004. Measuring the dayside reconnection rate during an interval of due northward interplanetary magnetic field. *Annales Geophysicae*, **22**, No. 12, 4243-4258.

CHISHAM G., FREEMAN M.P. & SOTIRELIS T.## 2004. A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the nightside ionosphere. *Geophysical Research Letters*, **31**, No. 2, L02804, doi:10.1029/2003GL019074, 4p.

ENGBRETSON M.J.##, POSCH J.L.##, HALFORD A.J.##, SHELBURNE G.A.##, SMITH A.J., SPASOJEVIC M.##, INAN U.S.## & ARNOLDY R.L.## 2004. Latitudinal and seasonal variations of quasiperiodic and periodic VLF emissions in the outer magnetosphere. *Journal of Geophysical Research*, **109**, No. A5, A05216, doi:10.1029/2003JA010335, 15p.

FREEMAN M.P. & CHISHAM G. 2004. On the probability distributions of SuperDARN Doppler spectral width measurements inside and outside the cusp. *Geophysical Research Letters*, **31**, No. 22, L22802, doi:10.1029/2004GL020923, 4p.

FREEMAN M.P. & MORLEY S.K. 2004. A minimal substorm model that explains the observed statistical distribution of times between substorms. *Geophysical Research Letters*, **31**, No. 12, L12807, doi:10.1029/GL019989, 4p.

McWILLIAMS K.A.##, SOFKO G.J.##, YEOMAN T.K.##, MILAN S.E.++, SIBECK D.G.##, NAGAI T.##, MUKAI T.##, COLEMAN I.J., HORI T.## & RICH F.J.## 2004. Simultaneous observations of magnetopause flux transfer events and of their associated signatures at ionospheric altitudes. *Annales Geophysicae*, **22**, No. 6, 2181-2199.

MEREDITH N.P.++, HORNE R.B., THORNE R.M.##, SUMMERS D.## & ANDERSON R.R.## 2004. Substorm dependence of plasmaspheric hiss. *Journal of Geophysical Research*, **109**, No. A6, A06209, doi:10.1029/2004JA010387, 14p.

PARKINSON M.L.##, **CHISHAM G.**, **PINNOCK M.**, DYSON P.L.## & DEVLIN J.C.## 2004. Magnetic local time substorm and particle precipitation-related variations in the behaviour of SuperDARN Doppler spectral widths. *Annales Geophysicae*, **22**, No. 12, 4103-4122.

SMITH A.J., **HORNE R.B.** & MEREDITH N.P.++ 2004. Ground observations of chorus following geomagnetic storms. *Journal of Geophysical Research*, **109**, No. A2, A02205, doi:10.1029/2003JA010204, 12p.

SMITH A.J., MEREDITH N.P.++ & O'BRIEN T.P.## 2004. Differences in ground-observed chorus in geomagnetic storms with and without enhanced relativistic electron fluxes. *Journal of Geophysical Research*, **109**, No. A11, A11204, doi:10.1029/2004JA010491, 9p.

SUMMERS D.##, MA C.##, MEREDITH N.P.++, **HORNE R.B.**, THORNE R.M.## & ANDERSON R.R.## 2004. Modeling outer-zone relativistic electron response to whistler-mode chorus activity during substorms. *Journal of Atmospheric and Solar-Terrestrial Physics*, **66** No. 2, 133-146.

TROSHICHEV O.A.##, FRANK-KAMENETSKY A.##, BURNS G.##, FUELLEKRUG M.##, **RODGER A.S.** & MOROZOV V.## 2004. The relationship between variations of the atmospheric electric field in the southern polar regions and thunderstorm activity. *Advances in Space Research*, **34**, No. 8, 1801-1805.

YAGOVA N.V.##, PILIPENKO V.A.##, LANZEROTTI L.J.##, ENGBRETSON M.J.##, **RODGER A.S.**, LEPIDI S.## & PAPITASHVILI V.O.## 2004. Two-dimensional structure of long-period pulsations at polar latitudes in Antarctica. *Journal of Geophysical Research*, **109**, No. A3, A03222, doi:10.1029/2003JA010166, 14p.

Unrefereed publications

WATKINS N.W. 2004. Citation rates. [Letter commenting on the article "Citation measures and impact within astronomy" by F.R. Pearce, published in *Astronomy and Geophysics*, 45, No. 2, 15-17]. *Astronomy and Geophysics*, **45**, No. 5, 5.9.

Geospace Atmosphere Transfer Functions

Refereed research papers 2004 listed in ISI database

CHU X.##, **NOTT G.J.**, **ESPY P.J.**, GARDNER C.S.##, **DIETRICH J.C.**, **CLILVERD M.A.** & **JARVIS M.J.** 2004. Lidar observations of polar mesospheric clouds at Rothera, Antarctica (67.5°S, 68.8°W). *Geophysical Research Letters*, **31**, No. 2, L02114, doi:10.1029/2003GL018638, 5p.

CLILVERD M.A., RODGER C.J.## & NUNN D.++ 2004. Radiation belt electron precipitation fluxes associated with lightning. *Journal of Geophysical Research*, **109**, No. A12, A12208, doi:10.1029/2004JA010644, 8p.

DOWDY A.L.##, VINCENT R.A.##, MURPHY D.J.##, TSUTSUMI M.##, RIGGIN D.M.## & **JARVIS M.J.** 2004. The large-scale dynamics of the mesosphere-lower thermosphere during the Southern Hemisphere stratospheric warming of 2002. *Geophysical Research Letters*, **31**, No. 14, L14102, doi:10.1029/2004GL020282, 4p.

ESPY P.J., **JONES G.O.L.**, SWENSON G.R.##, TANG J.## & TAYLOR M.J.## 2004. Seasonal variations of the gravity wave momentum flux in the Antarctic mesosphere and lower thermosphere. *Journal of Geophysical Research*, **109**, No. D23, D23109, doi:10.1029/2003JD004446, 9p.

ESPY P.J., **JONES G.O.L.**, SWENSON G.R.##, TANG J.## & TAYLOR M.J.## 2004. Tidal modulation of the gravity-wave momentum flux in the Antarctic mesosphere. *Geophysical Research Letters*, **31**, No. 11, L11111, doi:10.1029/2004GL019624, 4p.

JONES G.O.L., **CLILVERD M.A.**, **ESPY P.J.**, CHEW S., FRITTS D.C.## & RIGGIN D.M.## 2004. An alternative explanation of PMSE-like scatter in MF radar data. *Annales Geophysicae*, **22**, No. 8, 2715-2722.

LÜBKEN F.-J.##, MÜLLEMANN A.## & **JARVIS M.J.** 2004. Temperatures and horizontal winds in the Antarctic summer mesosphere. *Journal of Geophysical Research*, **109**, No. D24, D24112, doi:10.1029/2004JD005133, 13p.

MENK F.W.##, MANN I.R.++, **SMITH A.J.**, WATERS C.L.##, **CLILVERD M.A.** & MILLING D.K.++ 2004. Monitoring the plasmopause using geomagnetic field line resonances. *Journal of Geophysical Research*, **109**, No. A4, A04216, doi:10.1029/2003JA010097, 17p.

NUNN D.++, **CLILVERD M.A.**, RODGER C.J.## & THOMSON N.R.## 2004. The impact of PMSE and NLC particles on VLF propagation. *Annales Geophysicae*, **22**, No. 5, 1563-1574.

RODGER C.J.##, McCORMICK R.J.## & **CLILVERD M.A.** 2004. Testing the importance of precipitation loss mechanisms in the inner radiation belt. *Geophysical Research Letters*, **31**, No. 10, L10803, doi:10.1029/2004GL019501, 5p.

RODGER C.J.##, NUNN D.++ & **CLILVERD M.A.** 2004. Investigating radiation belt losses through numerical modelling of precipitating fluxes. *Annales Geophysicae*, **22**, No. 10, 3657-3667.

SHEPHERD M.G.++, ROCHON Y.J.##, OFFERMANN D.##, DONNER M.## & **ESPY P.J.** 2004. Longitudinal variability of mesospheric temperatures during equinox at middle and high latitudes. *Journal of Atmospheric and Solar-Terrestrial Physics*, **66**, No. 6-9, 463-479.

SINGER W.##, BREMER J.##, WEISS J.##, HOCKING W.K.##, HOFFNER J.##, DONNER M.## & **ESPY P.J.** 2004. Meteor radar observations at middle and Arctic latitudes. Part 1: Mean temperatures. *Journal of Atmospheric and Solar-Terrestrial Physics*, **66**, No. 6-9, 607-616.

Antarctica in the Dynamic Global Plate System

Refereed research papers 2004 listed in ISI database

ARMADILLO E.##, **FERRACCIOLI F.**, TABELLARIO G.## & BOZZO E.## 2004. Electrical structure across a major ice-covered fault belt in northern Victoria Land (East Antarctica). *Geophysical Research Letters*, **31**, No. 10, L10615, doi:10.1029/2004GL019903, 4p.

CURTIS M.L., **MILLAR I.L.**, STOREY B.C.## & FANNING M.## 2004. Structural and geochronological constraints of early Ross orogenic deformation in the Pensacola Mountains, Antarctica. *Geological Society of America Bulletin*, **116**, No. 5-6, 619-636.

EAGLES G.##, GOHL K.## & **LARTER R.D.** 2004. High-resolution animated tectonic reconstruction of the South Pacific and West Antarctic margin. *Geochemistry, Geophysics, Geosystems*, **5**, No. 7, Q07002, doi:10.1029/2003GC000657, 21p.

EAGLES G.##, GOHL K.## & **LARTER R.D.** 2004. Life of the Bellingshausen plate. *Geophysical Research Letters*, **31**, No. 7, L07603, doi:10.1029/2003GL019127, 5p.

HERNÁNDEZ-MOLINA F.J.##, **LARTER R.D.**, REBESCO M.## & MALDONADO A.## 2004. Miocene changes in bottom current regime recorded in continental rise sediments on the Pacific Margin of the Antarctic Peninsula. *Geophysical Research Letters*, **31**, No. 22, L22606, doi:10.1029/2004GL020298, 5p.

HUNTER M.A., **RILEY T.R.** & **MILLAR I.L.** 2004. Middle Jurassic air fall tuff in the sedimentary Latady Formation, eastern Ellsworth Land. *Antarctic Science*, **16**, No. 2, 185-190.

LEAT P.T., PEARCE J.A.++, **BARKER P.F.**, **MILLAR I.L.**, BARRY T.L.++ & **LARTER R.D.** 2004. Magma genesis and mantle flow at a subducting slab edge: the South Sandwich arc-basin system. *Earth and Planetary Science Letters*, **227**, No. 1-2, 17-35.

LIVERMORE R.A., EAGLES G.##, **MORRIS P.** & MALDONADO A.## 2004. Shackleton Fracture Zone: no barrier to early circumpolar ocean circulation. *Geology*, **32**, No. 9, 797-800.

MILLER S. & **MACDONALD D.I.M.** 2004. Metamorphic and thermal history of a fore-arc basin: the Fossil Bluff Group, Alexander Island, Antarctica. *Journal of Petrology*, **45**, No. 7, 1453-1465.

RANDALL D.E. & MAC NIOCAILL C.++ 2004. Cambrian palaeomagnetic data confirm a Natal Embayment location for the Ellsworth-Whitmore Mountains, Antarctica, in Gondwana reconstructions. *Geophysical Journal International*, **157**, No. 1, 105-116.

RILEY T.R., **MILLAR I.L.**, WATKEYS M.K.##, **CURTIS M.L.**, **LEAT P.T.**, KLAUSEN M.B.## & FANNING C.M.## 2004. U-Pb zircon (SHRIMP) ages for the Lebombo rhyolites, South Africa: refining the duration of Karoo volcanism. *Journal of the Geological Society*, **161**, Pt. 4, 547-550.

WINTERTON R.L. & **LIVERMORE R.A.** 2004. A customised GIS to aid Gondwana research. *Gondwana Research*, **7**, No. 1, 287-292.

ZEH A.##, **MILLAR I.L.** & HORSTWOOD M.S.A.** 2004. Polymetamorphism in the NE Shackleton Range Antarctica: constraints from petrology and U-Pb, Sm-Nd, Rb-Sr TIMS and in situ U-Pb LA-PIMMS dating. *Journal of Petrology*, **45**, No. 5, 949-973.

Unrefereed publications

HERNÁNDEZ-MOLINA F.J.##, **LARTER R.D.**, MALDONADO A.## & RODRÍGUEZ-FERNÁNDEZ J.## 2004. Evolución desde el Mioceno del margen pacífico de la Península Antártica frente a la Isla Adelaida: un ejemplo de margen pasivo glacial. *Geo-Temas*, **6**, No. 2, 237-240.

LARTER R.D. 2004. Seismic and sonar investigations carried out by the British Antarctic Survey in the Southern Ocean. *Polarforschung*, **72**, No. 2-3, 2002, 119-120.

VAUGHAN A.P.M. 2004. Terrane processes at the Pacific-margin of Gondwana (TAPMOG) Cambridge UK September 5-6 2003. [Meeting report]. *Episodes*, **27**, No. 3, 218-219.

Antarctic Biodiversity: Past, Present and Future

Refereed research papers 2004 listed in ISI database

CLARKE A., ARONSON R.B.##, **CRAME J.A.**, GILI J.-M.## & BLAKE D.B.## 2004. Evolution and diversity of the benthic fauna of the Southern Ocean continental shelf. *Antarctic Science*, **16**, No. 4, 559-568.

CRAME J.A., FRANCIS J.E.++, CANTRILL D.J.## & PIRRIE D.++ 2004. Maastrichtian stratigraphy of Antarctica. *Cretaceous Research*, **25**, No. 3, 411-423.

HARA U.## & **CRAME J.A.** 2004. A new aspidostomatid bryozoan from the Cape Melville Formation (Lower Miocene) of King George Island, West Antarctica. *Antarctic Science*, **16**, No. 3, 319-327.

HOWELL K.L.** , **ROGERS A.D.**, TYLER P.A.** & BILLET D.S.M.** 2004. Reproductive isolation among morphotypes of the Atlantic seastar species *Zoroaster fulgens* (Asteroidea: Echinodermata). *Marine Biology*, **144**, No. 5, 977-984.

LE GOFF-VITRY M.C.++, PYBUS O.G.++ & **ROGERS A.D.** 2004. Genetic structure of the deep-sea coral *Lophelia pertusa* in the northeast Atlantic revealed by microsatellites and internal transcribed spacer sequences. *Molecular Ecology*, **13**, No. 3, 537-549.

LE GOFF-VITRY M.C.++, **ROGERS A.D.** & BAGLOW D.++ 2004. A deep-sea slant on the molecular phylogeny of the Scleractinia. *Molecular Phylogenetics and Evolution*, **30**, No. 1, 167-177.

LINSE K. 2004. Scotia Arc deep-water bivalves: composition distribution and relationship to the Antarctic shelf fauna. *Deep-Sea Research Part II*, **51**, No. 14-16, 1827-1837.

RAGUÁ-GIL J.M.##, GUTT J.##, **CLARKE A.** & ARNTZ W.E.## 2004. Antarctic shallow-water mega-epibenthos: shaped by circumpolar dispersion or local conditions? *Marine Biology*, **144**, No. 5, 829-839

SOLÍS-MARÍN F.A.##, BILLET D.S.M.** , PRESTON J.** & **ROGERS A.D.** 2004. Mitochondrial DNA sequence evidence supporting the recognition of a new North Atlantic *Pseudostichopus* species (Echinodermata: Holothuroidea). *Journal of the Marine Biological Association of the United Kingdom*, **84**, 1077-1084.

Book chapter

CRAME J.A. 2004. Pattern and process in marine biogeography: a view from the poles. (In Lomolini, M V. & Heaney, L.R., eds. *Frontiers of biogeography: new directions in the geography of nature*. Sunderland Mass., Sinauer Associates, 271-291.)

ROGERS A.D. & LAMBSHEAD P.J.D.%% 2004. Molecular studies of nematode diversity: past present and future. (In Cook R. & Hunt, D.J., eds. *Proceedings of the Fourth International Congress on Nematology 8-13 June 2002 Tenerife Spain*. Leiden, Brill, 761-774.

Unrefereed publications

MARTIN K.## & **ROGERS A.D.** 2004. Warming up to cold-water corals. *World Conservation*, **35**, No. 1, 8-9.

ROGERS A.D. 2004. *The biology, ecology and vulnerability of deep-water coral reefs*. n.pl : IUCN, 10p.

ROGERS A.D. 2004. *The biology, ecology and vulnerability of seamount communities*. n.pl : IUCN, 9p.

Life at the Edge - Stresses and Thresholds

Refereed research papers 2004 listed in ISI database

BARNES D.K.A. & KUKLIŃSKI P.## 2004. Scale-dependent variation in competitive ability among encrusting Arctic species. *Marine Ecology Progress Series*, **275**, 21-32.

BARNES D.K.A. & KUKLINSKI P.## 2004. Variability of competition at scales of 10^1 10^3 10^5 and 10^6 m: encrusting arctic community patterns. *Marine Biology*, **145**, No. 2, 361-372.

BARNES D.K.A., WARREN N.L., WEBB K.E., PHALAN B. & REID K. 2004. Polar pedunculate barnacles piggy-back on pycnogona, penguins, pinniped seals and plastics. *Marine Ecology Progress Series*, **284**, 305-310.

BRIDGE P.D. & WORLAND M.R. 2004. First report of an entomophthoralean fungus on an arthropod host in Antarctica. *Polar Biology*, **27**, No. 3, 190-192.

BROWN K.M., FRASER K.P.P., BARNES D.K.A. & PECK L.S. 2004. Links between the structure of an Antarctic shallow-water community and ice-scour frequency. *Oecologia*, **141**, 121-129.

CARDOSO J.C.R.%%, POWER D.M.##, ELGAR G.%% & CLARK M.S. 2004. Duplicated receptors for VIP and PACAP (VPAC₁R and PAC₁R) in a teleost fish, *Fugu rubripes*. *Journal of Molecular Endocrinology*, **33**, 411-428.

CHAPELLE G.## & PECK L.S. 2004. Amphipod crustacean size spectra: new insights in the relationship between size and oxygen. *Oikos*, **106**, No. 1, 167-175.

CLARK M.S., CLARKE A., COCKELL C.S., CONVEY P., DETRICH H.W.##, FRASER K.P.P., JOHNSTON I.A.++, METHE B.A.##, MURRAY A.E.##, PECK L.S., ROMISCH K.++ & ROGERS A.D. 2004. Antarctic genomics. *Comparative and Functional Genomics*, **5**, 230-238.

CLARKE A., PROTHERO-THOMAS E., BEAUMONT J.C.%%, CHAPMAN A.L. & BREY T.## 2004. Growth in the limpet *Nacella concinna* from contrasting sites in Antarctica. *Polar Biology*, **28**, No. 1, 62-71.

COCKELL C.S. 2004. Impact-shocked rocks - insights into archean and extraterrestrial microbial habitats (and sites for prebiotic chemistry?). *Advances in Space Research*, **33**, No. 8, 1231-1235.

COCKELL C.S. 2004. The rights of microbes. *Interdisciplinary Science Reviews*, **29**, No. 2, 141-150.

COCKELL C.S. 2004. The uses of Martian ice. *Interdisciplinary Science Reviews*, **29**, No. 4, 395-407.

COCKELL C.S. & CÓRDOBA-JABONERO C.## 2004. Coupling of climate change and biotic UV exposure through changing snow-ice covers in terrestrial habitats. *Photochemistry and Photobiology*, **79**, No. 1, 26-31.

COCKELL C.S. & HORNECK G.## 2004. A Planetary Park system for Mars. *Space Policy*, **20**, 291-295.

COCKELL C.S. & RAVEN J.A.++ 2004. Zones of photosynthetic potential on Mars and the early Earth. *Icarus*, **169**, 300-310.

COCKELL C.S. & STOKES M.D.## 2004. Widespread colonization by polar hypoliths. *Nature*, **431**, No. 7007, 414.

DAVIDSON I.C.##, CROOK A.C.## & **BARNES D.K.A.** 2004. Macrobenthic migration and its influence on the diversity dynamics of a meso-tidal system. *Marine Biology*, **145**, No. 4, 833-842.

DAVIDSON I.C.##, CROOK A.C.## & **BARNES D.K.A.** 2004. Quantifying spatial patterns of intertidal biodiversity: is movement important? *Marine Ecology*, **25**, No. 1, 15-34.

EDWARDS H.G.M.++, **COCKELL C.S.**, NEWTON E.M.++ & **WYNN-WILLIAMS D.D.** 2004. Protective pigmentation in UVB-screened Antarctic lichens studied by Fourier transform Raman spectroscopy: an extremophile bioresponse to radiation stress. *Journal of Raman Spectroscopy*, **35**, 463-469.

EDWARDS H.G.M.++, de OLIVEIRA L.F.C.++, **COCKELL C.S.**, **ELLIS-EVANS J.C.** & **WYNN-WILLIAMS D.D.** 2004. Raman spectroscopy of senescing snow algae: pigmentation changes in an Antarctic cold desert extremophile. *International Journal of Astrobiology*, **3**, No. 2, 125-129

EDWARDS H.G.M.++, **WYNN-WILLIAMS D.D.**, LITTLE S.J.++, de OLIVEIRA L.F.C.++, **COCKELL C.S.** & **ELLIS-EVANS J.C.** 2004. Stratified response to environmental stress in a polar lichen characterized with FT-Raman microscopic analysis. *Spectrochimica Acta Part A*, **60**, 2029-2033.

EDWARDS H.G.M.++, **WYNN-WILLIAMS D.D.** & VILLAR S.E.J.++ 2004. Biological modification of haematite in Antarctic cryptoendolithic communities. *Journal of Raman Spectroscopy*, **35**, 470-474.

ELLERY A.A.++, **WYNN-WILLIAMS D.D.**, PARNELL J.++, EDWARDS H.G.M.++ & DICKENSHEETS D.L.## 2004. The role of Raman spectroscopy as an astrobiological tool in the exploration of Mars. *Journal of Raman Spectroscopy*, **35**, 441-457.

FRASER K.P.P., **PECK L.S.** & **CLARKE A.** 2004. Protein synthesis, RNA concentrations, nitrogen excretion, and metabolism vary seasonally in the Antarctic

holothurian *Heterocucumis steineni* (Ludwig, 1898). *Physiological and Biochemical Zoology*, **77**, 556-569.

GRANGE L.J.++, TYLER P.A.++, **PECK L.S.** & CORNELIUS N.++ 2004. Long-term interannual cycles of the gametogenic ecology of the Antarctic brittle star *Ophionotus victoriae*. *Marine Ecology Progress Series*, **278**, 141-155.

HAYWARD S.A.L.++, **WORLAND M.R.**, **CONVEY P.** & BALE J.S.++ 2004. Habitat moisture availability and the local distribution of the Antarctic Collembola *Cryptopygus antarcticus* and *Friesea grisea*. *Soil Biology and Biochemistry*, **36**, 927-934.

HUGHES K.A. 2004. Reducing sewage pollution in the Antarctic marine environment using a sewage treatment plant. *Marine Pollution*, **49**, 850-853.

HUGHES K.A. & NOBBS S.J.%% 2004. Long-term survival of human faecal microorganisms on the Antarctic Peninsula. *Antarctic Science*, **16**, No. 3, 293-297.

HUGHES K.A. & THOMPSON A.++ 2004. Distribution of sewage pollution around a maritime Antarctic research station indicated by faecal coliforms, *Clostridium perfringens* and faecal sterol markers. *Environmental Pollution*, **127**, No. 3, 315-321.

HUGHES K.A., McCARTNEY H.A.%%, **LACHLAN-COPE T.A.** & **PEARCE D.A.** 2004. A preliminary study of airborne microbial biodiversity over peninsular Antarctica. *Cellular and Molecular Biology*, **50**, No. 5, 537-542.

JOVANOVIĆ-GALOVIĆ A.##, BLAGOJEVIĆ D.P.##, GRUBOR-LAJŠIĆ G.##, **WORLAND M.R.** & SPASIĆ M.B.## 2004. Role of antioxidant defense during different stages of preadult life cycle in European corn borer (*Ostrinia nubilalis* Hubn.): diapause and metamorphosis. *Archives of Insect Biochemistry and Physiology*, **55**, No. 2, 79-89.

LAWLEY B., **RIPLEY S.**, **BRIDGE P.D.** & **CONVEY P.** 2004. Molecular analysis of geographic patterns of eukaryotic diversity in Antarctic soils. *Applied and Environmental Microbiology*, **70**, No. 10, 5963-5972.

LAYBOURN-PARRY J.++, HENSHAW T.++, JONES D.J.++ & **QUAYLE W.C.** 2004. Bacterioplankton production in freshwater Antarctic lakes. *Freshwater Biology*, **49**, No. 6, 735-744.

MARSHALL D.J.## & **CONVEY P.** 2004. Latitudinal variation in habitat specificity of oribatid mites (Oribatida). *Experimental and Applied Acarology*, **34**, 21-35.

NEWSHAM K.K., **ROLF J.**, **PEARCE D.A.** & **STRACHAN R.J.** 2004. Differing preferences of Antarctic soil nematodes for microbial prey. *European Journal of Soil Biology*, **40**, 1-8.

PATEL M.R.++, CHRISTOU A.A.++, **COCKELL C.S.**, RINGROSE T.J.++ & ZARNECKI J.C.++ 2004. The UV environment of the Beagle 2 landing site: detailed investigations and detection of atmospheric state. *Icarus*, **168**, 93-115.

PECK L.S. 2004. Physiological flexibility: the key to success and survival for Antarctic fairy shrimps in highly fluctuating extreme environments. *Freshwater Biology*, **49**, No. 9, 1195-1205.

PECK L.S. & BARNES D.K.A. 2004. Metabolic flexibility: the key to long-term evolutionary success in Bryozoa? *Proceedings of the Royal Society of London Series B*, **271**, Suppl., S18-S21.

PECK L.S., ANSELL A.D.** , **WEBB K.E.**, HEPBURN L.** & BURROWS M.** 2004. Movements and burrowing activity in the Antarctic bivalve molluscs *Laternula elliptica* and *Yoldia eightsi*. *Polar Biology*, **27**, No. 6, 357-367.

PECK L.S., **WEBB K.** & BAILEY D.M.++ 2004. Extreme sensitivity of biological function to temperature in Antarctic marine species. *Functional Ecology*, **18**, 625-630.

RAWLINSON K.A.##, DAVENPORT J.## & **BARNES D.K.A.** 2004. Vertical migration strategies with respect to advection and stratification in a semi-enclosed lough: a comparison of mero- and holozooplankton. *Marine Biology*, **144**, No. 5, 935-946.

STANIĆ B., JOVANOVIĆ-GALOVIĆ A.##, BLAGOJEVIĆ D.P.##, GRUBOR-LAJŠIĆ G.##, **WORLAND M.R.** & SPASIĆ M.B.## 2004. Cold hardiness in *Ostrinia nubilalis* (Lepidoptera: Pyralidae): glycerol content, hexose monophosphate shunt activity, and antioxidative defense system. *European Journal of Entomology*, **101**, 459-466.

SUTHERLAND I.W.++, **HUGHES K.A.**, SKILLMAN L.C.## & TAIT K.## 2004. The interaction of phage and biofilms. *FEMS Microbiology Letters*, **232**, 1-6.

TULLETT A.G.++, HART A.J.++, **WORLAND M.R.** & BALE J.S.++ 2004. Assessing the effects of low temperature on the establishment potential in Britain of the non-native biological control agent *Eretmocerus eremicus*. *Physiological Entomology*, **29**, 363-371.

VERLING E.##, CROOK A.C.## & **BARNES D.K.A.** 2004. The dynamics of covering behaviour in dominant echinoid populations from American and European west coasts. *Marine Ecology*, **25**, No. 3, 191-206.

WATSON D.I.## & **BARNES D.K.A.** 2004. Quantifying assemblage distinctness with time: an example using temperate epibenthos. *Journal of Experimental Marine Biology and Ecology*, **312**, No. 2, 367-383.

WATSON D.I.## & **BARNES D.K.A.** 2004. Temporal and spatial components of variability in benthic recruitment a 5-year temperate example. *Marine Biology*, **145**, No. 1, 201-214.

WORLAND M.R., WHARTON D.A.## & BYARS S.G.## 2004. Intracellular freezing and survival in the freeze tolerant alpine cockroach *Celatoblatta quinquemaculata*. *Journal of Insect Physiology*, **50**, No. 2-3, 225-232.

Refereed research papers 2004 NOT listed in ISI database

EDWARDS H.G.M.++, MOODY C.A.++, VILLAR S.E.J.++, DICKENSHEETS D.L.## & WYNN-WILLIAMS D.D. 2004. Antarctic analogues for Mars exploration: a Raman spectroscopic study of biogeological signatures. (In: European Space Agency. *Proceedings of the III European Workshop on Exo-Astrobiology. Mars: the search for life, Madrid, November 2003*. Noordwijk, European Space Agency, 33-36.)

Book chapters

BARNES D.K.A. 2004. Natural and plastic flotsam stranding in the Indian Ocean. (In Davenport, J. & Davenport, J.L. *The effects of human transport on ecosystems: cars and planes, boats and trains : Proceedings of a seminar of the National Committee for Biology, April 2003*. Dublin : Royal Irish Academy, 193-205.)

MOODY C.A.++, EDWARDS H.G.M.++ & **WORLAND M.R.** 2004. Raman spectroscopic studies of Antarctic endoliths and epiliths. (In: European Space Agency. *Proceedings of the III European Workshop on Exo-Astrobiology. Mars: the search for life, Madrid, November 2003*. Noordwijk, European Space Agency, 243-244.)

Unrefereed publications

BIGNELL D.E.++, **BLOCK W.** & BAKER A.S.%% 2004. Obituary: John Anthony Wallwork (1932-2004). *International Journal of Acarology*, **30**, No. 3, 281-285.

CLARKE A. 2004. Animals i temperatura a les regions polars. *Omnis Cellula*, No. 6, 35-37.

CLARKE A. 2004. Putting animals in their place. [Review of] *Environmental physiology of animals*, 2nd ed., by P. Willmer, G. Stone and I. Johnston. Blackwell Scientific, 2004. *Trends in Ecology and Evolution*, **19**, No. 6, 301-302.

PECK L.S. 2004. Swimming beneath solid seas. [Review of] *Under Antarctic ice: the photographs of Norbert Wu* by N. Wu and J. Mastro, University of California Press, 2004 [and] *Frozen oceans* by D. Thomas, Natural History Museum Publishing, 2004. *Nature*, **432**, No. 7018, 675-676.

Refereed research papers 2004 listed in ISI database

ALLCOCK A.L.++, **COLLINS M.A.**, PIATKOWSKI U.##, VECCHIONE M.## 2004. *Thaumeledone* and other deep water octopodids from the Southern Ocean. *Deep-Sea Research Part II*, **51**, No. 14-16, 1883-1901.

ARATA J.##, ROBERTSON G.##, VALENCIA J.##, **XAVIER J.C.** & MORENO C.A.## 2004. Diet of grey-headed albatrosses at the Diego Ramírez Islands Chile: ecological implications. *Antarctic Science*, **16**, No. 3, 263-275.

ARNOLD K.H., **SHREEVE R.S.**, **ATKINSON A.** & **CLARKE A.** 2004. Growth rates of Antarctic krill *Euphausia superba*: comparison of the instantaneous growth rate method with nitrogen and phosphorus stoichiometry. *Limnology and Oceanography*, **49**, No. 6, 2152-2161.

ATKINSON A., SIEGEL V.##, PAKHOMOV E.A.## & ROTHERY P.** 2004. Long-term decline in krill stock and increase in salps within the Southern Ocean. *Nature*, **432**, No. 7013, 100-103.

BRANDON M.A.++, NAGANOBU M.##, DEMER D.A.##, CHERNYSHKOV P.P.##, **TRATHAN P.N.**, **THORPE S.E.**, KAMEDA T.##, BEREZHINSKY O.A.##, **HAWKER E.J.** & **GRANT S.A.** 2004. Physical oceanography in the Scotia Sea during the CCAMLR 2000 Survey austral summer 2000. *Deep-Sea Research Part II*, **51**, No. 12-13, 1301-1321.

BUNKER A.J.++ & **HIRST A.G.** 2004. Fecundity of marine planktonic copepods: global rates and patterns in relation to chlorophyll *a* temperature and body weight. *Marine Ecology Progress Series*, **279**, 161-181.

BURROWS M.T.** & **TARLING G.A.** 2004. Effects of density dependence on diel vertical migration of populations of northern krill: a genetic algorithm model. *Marine Ecology Progress Series*, **277**, 209-220.

COLLINS M.A. 2004. *Cryptoteuthis brevibracchiata*: a new species and genus of cirrate octopod (Octopoda: Cirrata). *Journal of Molluscan Studies*, **70**, 263-267.

COLLINS M.A., ALLCOCK A.L.++ & **BELCHIER M.** 2004. Cephalopods of the South Georgia slope. *Journal of the Marine Biological Association of the United Kingdom*, **84**, No. 2, 415-419.

CROXALL J.P. & NICOL S.## 2004. Management of Southern Ocean fisheries: global forces and future sustainability. *Antarctic Science*, **16**, No. 4, 569-584.

CUZIN-ROUDY J.##, **TARLING G.A.** & STRÖMBERG J.-O.## 2004. Life cycle strategies of northern krill (*Meganyctiphanes norvegica*) for regulating growth, moult, and reproductive activity in various environments: the case of fjordic populations. *ICES Journal of Marine Science*, **61**, 721-737.

GREEN J.A.++, **TANTON J.L.**, WOAKES A.J.++, **BOYD I.L.** & BUTLER P.J.++ 2004. Effects of long-term implanted data loggers on macaroni penguins *Eudyptes chrysolophus*. *Journal of Avian Biology*, **35**, No. 4, 370-376.

HEWITT R.P.##, **WATKINS J.L.**, NAGANOBU M.##, SUSHIN V.##, **BRIERLEY A.S.**, DEMER D.A.##, KASATKINA S.##, TAKAO Y.##, **GOSS C.**, MALYSHKO A.##, BRANDON M.A.++, KAWAGUCHI S.##, SIEGEL V.##, **TRATHAN P.N.**, EMERY J.H.##, **EVERSON I.** & MILLER D.G.M.## 2004. Biomass of Antarctic krill in the Scotia Sea in January/February 2000 and its use in revising an estimate of precautionary yield. *Deep-Sea Research Part II*, **51**, No. 12-13, 1215-1236.

HEWITT R.P.##, WATTERS G.##, **TRATHAN P.N.**, **CROXALL J.P.**, GOEBEL M.E.##, RAMM D.##, REID K., TRIVELPIECE W.Z.## & **WATKINS J.L.** 2004. Options for allocating the precautionary catch limit of krill among small-scale management units in the Scotia Sea. *CCAMLR Science*, **11**, 81-97.

HOFFMAN J.I.++, **BOYD I.L.** & AMOS W.++ 2004. Exploring the relationship between parental relatedness and male reproductive success in the Antarctic fur seal *Arctocephalus gazella*. *Evolution*, **58**, No. 9, 2087-2099.

HOFMANN E.E.## & **MURPHY E.J.** 2004. Advection, krill and Antarctic marine ecosystems. *Antarctic Science*, **16**, No. 4, 487-499.

HOLM-HANSEN O.##, KAHRU M.##, HEWES C.D.##, KAWAGUCHI S.##, KAMEDA T.##, SUSHIN V.A.##, KRASOVSKI I.##, **PRIDDLE J.**, **KORB R.**, HEWITT R.P.## & MITCHELL B.G.## 2004. Temporal and spatial distribution of chlorophyll-*a* in surface waters of the Scotia Sea as determined by both shipboard measurements and satellite data. *Deep-Sea Research Part II*, **51**, No. 12-13, 1323-1331.

HOLM-HANSEN O.##, NAGANOBU M.##, KAWAGUCHI S.##, KAMEDA T.##, KRASOVSKI I.##, TCHERNYSHKOV P.##, **PRIDDLE J.**, **KORB R.**, **BRANDON M.A.**, DEMER D.A.##, HEWITT R.P.##, KAHRU M.## & HEWES C.D.## 2004. Factors influencing the distribution, biomass and productivity of phytoplankton in the Scotia Sea and adjoining waters. *Deep-Sea Research Part II*, **51**, No. 12-13, 1333-1350.

HUDSON I.R.++, **POND D.W.**, BILLET D.S.M.++, TYLER P.A.++, LAMPITT R.S.++ & WOLFF G.A.++ 2004. Temporal variations in fatty acid composition of deep-sea holothurians: evidence of benthic-pelagic coupling. *Marine Ecology Progress Series*, **281**, 109-120.

JESSOPP M.J., **FORCADA J.**, **REID K.**, **TRATHAN P.N.** & **MURPHY E.J.** 2004. Winter dispersal of leopard seals (*Hydrurga leptonyx*): environmental factors influencing demographics and seasonal abundance. *Journal of Zoology*, **263**, 251-258.

KASATKINA S.##, **GOSS C.**, EMERY J.H.##, TAKAO Y.##, LITVINOV F.##, MALYSHKO A.##, SHNAR V.N.## & BEREZHINSKY O.A.## 2004. A

comparison of net and acoustic estimates of krill density in the Scotia Sea during the CCAMLR 2000 Survey. *Deep-Sea Research Part II*, **51**, No. 12-13, 1289-1300.

KAWAGUCHI S.##, SIEGEL V.##, LITVINOV F.##, LOEB V.## & WATKINS J.L. 2004. Salp distribution and size composition in the Atlantic sector of the Southern Ocean. *Deep-Sea Research Part II*, **51**, No. 12-13, 1369-1381.

KORB R.E. & WHITEHOUSE M.J. 2004. Contrasting primary production regimes around South Georgia, Southern Ocean: large blooms versus high nutrient, low chlorophyll waters. *Deep-Sea Research Part I*, **51**, No. 5, 721-738.

KORB R.E., WHITEHOUSE M.J. & WARD P. 2004. SeaWiFs in the southern ocean: spatial and temporal variability in phytoplankton biomass around South Georgia. *Deep-Sea Research Part II*, **51**, No. 1-3, 99-116.

LYNNES A.S., REID K. & CROXALL J.P. 2004. Diet and reproductive success of Adélie and chinstrap penguins: linking response of predators to prey population dynamics. *Polar Biology*, **27**, No. 9, 544-554.

MORI Y.++ & BOYD I.L. 2004. The behavioral basis for nonlinear functional responses and optimal foraging in Antarctic fur seals. *Ecology*, **85**, No. 2, 398-410.

MORI Y.++ & BOYD I.L. 2004. Segregation of foraging between two sympatric penguin species: does rate maximisation make the difference? *Marine Ecology Progress Series*, **275**, 241-249.

MURPHY E.J., THORPE S.E., WATKINS J.L. & HEWITT R.P.## 2004. Modeling the krill transport pathways in the Scotia Sea: spatial and environmental connections generating the seasonal distribution of krill. *Deep-Sea Research Part II*, **51**, No. 12-13, 1435-1456.

MURPHY E.J., WATKINS J.L., MEREDITH M.P., WARD P., TRATHAN P.N. & THORPE S.E. 2004. Southern Antarctic Circumpolar Current Front to the northeast of South Georgia: horizontal advection of krill and its role in the ecosystem. *Journal of Geophysical Research*, **109**, No. C1, C01029, doi:10.1029/2002JC001522, 10p.

NEVITT G.A.##, REID K. & TRATHAN P.N. 2004. Testing olfactory foraging strategies in an Antarctic seabird assemblage. *Journal of Experimental Biology*, **207**, 3537-3544.

PAKHOMOV E.A.##, ATKINSON A., MEYER B.##, OETTL B.## & BATHMANN U.## 2004. Daily rations and growth of larval krill *Euphausia superba* in the eastern Bellingshausen Sea during austral autumn. *Deep-Sea Research Part II*, **51**, No. 17-19, 2185-2198.

REID K., JESSOPP M.J., BARRETT M.S., KAWAGUCHI S.##, SIEGEL V.## & GOEBEL M.E.## 2004. Widening the net: spatio-temporal variability in the krill population structure across the Scotia Sea. *Deep-Sea Research Part II*, **51**, No. 12-13, 1275-1287.

REID K., SIMS M., WHITE R.W.## & GILLON K.W.## 2004. Spatial distribution of predator/prey interactions in the Scotia Sea: implications for measuring predator/fisheries overlap. *Deep-Sea Research Part II*, **51**, No. 12-13, 1383-1396.

REILLY S.##, HEDLEY S.++, BORBERG J.##, HEWITT R.P.##, THIELE D.##, **WATKINS J.L.** & NAGANOBU M.## 2004. Biomass and energy transfer to baleen whales in the South Atlantic sector of the Southern Ocean. *Deep-Sea Research Part II*, **51**, No. 12-13, 1397-1409.

SCHMIDT K.##, McCLELLAND J.W.##, MENTE E.++, MONTOYA J.P.##, **ATKINSON A.** & VOSS M.## 2004. Trophic-level interpretation based on $\delta^{15}\text{N}$ values: implications of tissue-specific fractionation and amino acid composition. *Marine Ecology Progress Series*, **266**, 43-58.

SCHMIDT K., TARLING G.A., PLATHNER N.## & ATKINSON A. 2004. Moulting cycle-related changes in feeding rates of larval krill *Meganyctiphanes norvegica* and *Thysanoessa* spp. *Marine Ecology Progress Series*, **281**, 131-143.

SIEGEL V.##, KAWAGUCHI S.##, **WARD P.**, LITVINOV F.##, SUSHIN V.##, LOEB V.## & **WATKINS J.L.** 2004. Krill demography and large-scale distribution in the southwest Atlantic during January/February 2000. *Deep-Sea Research Part II*, **51**, No. 12-13, 1253-1273.

STANILAND I.J. & POND D. 2004. Variability in milk fatty acids: recreating a foraging trip to test dietary predictions in Antarctic fur seals. *Canadian Journal of Zoology*, **82**, 1099-1107.

STANILAND I.J., REID K. & BOYD I.L.** 2004. Comparing individual and spatial influences on foraging behaviour in Antarctic fur seals (*Arctocephalus gazella*). *Marine Ecology Progress Series*, **275**, 263-274.

TAKAHASHI A., DUNN M.J., TRATHAN P.N., CROXALL J.P., WILSON R.P.##, SATO K.## & NAITO Y.## 2004. Krill-feeding behaviour in a chinstrap penguin *Pygoscelis antarctica* compared with fish-eating in Magellanic penguins *Spheniscus magellanicus*: a pilot study. *Marine Ornithology*, **32**, No. 1, 47-54.

TAKAHASHI A., SATO K.##, NAITO Y.##, DUNN M.J., TRATHAN P.N. & CROXALL J.P. 2004. Penguin-mounted cameras glimpse underwater group behaviour. *Proceedings of the Royal Society of London Series B*, **271**, Suppl. 5, 281-282.

TANTON J.L., REID K., CROXALL J.P. & TRATHAN P.N. 2004. Winter distribution and behaviour of gentoo penguins *Pygoscelis papua* at South Georgia. *Polar Biology*, **27**, No. 5, 299-303.

TARLING G.A., SHREEVE R.S., WARD P., ATKINSON A. & HIRST A.G. 2004. Life-cycle phenotypic composition and mortality of *Calanoides acutus* (Copepoda: Calanoida) in the Scotia Sea: a modelling approach. *Marine Ecology Progress Series*, **272**, 165-181.

THORPE S.E., HEYWOOD K.J.++, STEVENS D.P.++ & BRANDON M.A. 2004. Tracking passive drifters in a high resolution ocean model: implications for interannual variability of larval krill transport to South Georgia. *Deep-Sea Research Part I*, **51**, No. 7, 909-920.

TRATHAN P.N. 2004. Image analysis of color aerial photography to estimate penguin population size. *Wildlife Society Bulletin*, **32**, No. 2, 332-343.

VOTIER S.C.++, FURNESS R.W.++, BEARHOP S.++ and 12 others++ and ## (including **R.A. PHILLIPS**). 2004. Changes in fisheries discard rates and seabird communities. *Nature*, **427**, No. 6976, 727-730.

WALUDA C.M., TRATHAN P.N. & RODHOUSE P.G. 2004. Synchronicity in southern hemisphere squid stocks and the influence of the Southern Oscillation and Trans Polar Index. *Fisheries Oceanography*, **13**, No. 4, 255-266.

WALUDA C.M., YAMASHIRO C.##, ELVIDGE C.D.##, HOBSON V.R.## & RODHOUSE P.G. 2004. Quantifying light-fishing for *Dosidicus gigas* in the eastern Pacific using satellite remote sensing. *Remote Sensing of Environment*, **91**, 129-133.

WARD P., GRANT S.A., BRANDON M.A.++, SIEGEL V.##, SUSHIN V.##, LOEB V.## & GRIFFITHS H.J. 2004. Mesozooplankton community structure in the Scotia Sea during the CCAMLR 2000 Survey: January-February 2000. *Deep-Sea Research Part II*, **51**, No. 12-13, 1351-1367.

WATKINS J.L., HEWITT R.P.##, NAGANOBU M.## & SUSHIN V.## 2004. The CCAMLR 2000 Survey: a multinational, multi-ship biological oceanography survey of the Atlantic sector of the Southern Ocean. (Editorial). *Deep-Sea Research Part II*, **51**, No. 12-13, 1205-1213.

XAVIER J.C., TRATHAN P.N., CROXALL J.P., WOOD A.G., PODESTÁ G.## & RODHOUSE P.G. 2004. Foraging ecology and interactions with fisheries of wandering albatrosses (*Diomedea exulans*) breeding at South Georgia. *Fisheries Oceanography*, **13**, No. 5, 324-344.

Book chapters

CROXALL J.P. & TRATHAN P.N. 2004. The Southern Ocean: a model system for conserving resources? (In Glover, L.K. & Earle, S.A., eds. *Defying ocean's end: an agenda for action*. Washington D.C., Island Press, 69-87.)

TRATHAN P.N. & CROXALL J.P. 2004. Marine predators at South Georgia: an overview of recent bio-logging studies. (In Naito, Y. Bio-logging science. Proceedings of the International Symposium on Bio-logging Science, Tokyo March 2003. *Memoirs of National Institute of Polar Research special issue*, no. 58. Tokyo, National Institute of Polar Research, 118-132.)

Books and other edited volumes

WATKINS J.L., HEWITT R.P.##, NAGANOBU M.## & SUSHIN V.##, eds. 2004. The CCAMLR-2000 Survey: a multinational, multi-ship biological oceanography survey of the Atlantic sector of the Southern Ocean. *Deep-sea Research Part II*, **51**, No. 12-13, [252p.]

IM special projects: Alan Rodger

Refereed research papers 2004 listed in ISI database

LAM M.M. & RODGER A.S. 2004. A test of the magnetospheric source of travelling convection vortices. *Journal of Geophysical Research*, **109**, No. A2, A02204, doi:10.1029/2003JA010214, 11p.

Unrefereed publications

CHUGUNOVA O.##, PILIPENKO V.A.##, ENGBRETSON M.J.## & **RODGER A.S.** 2004. Coupling between substorms and ULF disturbances at polar latitudes. (In Ganushkina, N. & Pulkkinen, T., eds. *Substorms-7: proceedings of the 7th International Conference on Substorms*. Helsinki, Finnish Meteorological Institute, 115-118.)

IM special projects: Andrew Clarke

Refereed research papers 2004 listed in ISI database

CLARKE A. 2004. Is there a Universal Temperature Dependence of metabolism? *Functional Ecology*, **18**, 252-256.

CLARKE A. & FRASER K.P.P. 2004. Why does metabolism scale with temperature? *Functional Ecology*, **18**, 243-251.

IM special projects: John Croxall

Refereed research papers 2004 listed in ISI database

BURG T.M.++ & CROXALL J.P. 2004. Global population structure and taxonomy of the wandering albatross species complex. *Molecular Ecology*, **13**, No. 8, 2345-2355.

CATRY P., PHILLIPS R.A. & CROXALL J.P. 2004. Sustained fast travel by a gray-headed albatross (*Thalassarche chrysostoma*) riding an Antarctic storm. *Auk*, **121**, No. 4, 1208-1213.

CATRY P., PHILLIPS R.A., PHALAN B., SILK J.R.D. & CROXALL J.P. 2004. Foraging strategies of grey-headed albatrosses *Thalassarche chrysostoma*: integration of movements, activity and feeding events. *Marine Ecology Progress Series*, **280**, 261-273.

CROXALL J.P. 2004. The potential effects of marine habitat changes on Antarctic seabirds. *Ibis*, **146**, Suppl. 1, 90-91.

GONZÁLEZ-SOLÍS J. 2004. Regulation of incubation shifts near hatching by giant petrels: a timed mechanism, embryonic signalling or food availability? *Animal Behaviour*, **67**, 663-671.

GONZÁLEZ-SOLÍS J. 2004. Sexual size dimorphism in northern giant petrels: ecological correlates and scaling. *Oikos*, **105**, No. 2, 247-254.

HALL M.E.++, NASIR L.++, DAUNT F.** , GAULT E.A.++, **CROXALL J.P.**, WANLESS S.** & MONAGHAN P.++ 2004. Telomere loss in relation to age and early environment in long-lived birds. *Proceedings of the Royal Society of London, Series B*, **271**, 1571-1576.

PHALAN B., PHILLIPS R.A. & DOUBLE M.C.## 2004. A white-capped albatross, *Thalassarche [cauta] steadi*, at South Georgia: first confirmed record in the south-western Atlantic. *Emu*, **104**, No. 4, 359-361.

PHILLIPS R.A., PHALAN B. & FORSTER I.P. 2004. Diet and long-term changes in population size and productivity of brown skuas *Catharacta antarctica lonnbergi* at Bird Island, South Georgia. *Polar Biology*, **27**, No. 9, 555-561.

PHILLIPS R.A., SILK J.R.D., CROXALL J.P., AFANASYEV V. & BRIGGS D.R. 2004. Accuracy of geolocation estimates for flying seabirds. *Marine Ecology Progress Series*, **266**, 265-272.

PHILLIPS R.A., SILK J.R.D., PHALAN B., CATRY P. & CROXALL J.P. 2004. Seasonal sexual segregation in two *Thalassarche* albatross species: competitive exclusion, reproductive role specialization or trophic niche divergence? *Proceedings of the Royal Society of London, Series B*, **271**, 1283-1291.

VOTIER S.C.++, BEARHOP S.++, RATCLIFFE N.%%, **PHILLIPS R.A. & FURNESS R.W.++** 2004. Predation by great skuas at a large Shetland seabird colony. *Journal of Applied Ecology*, **41**, 1117-1128.

Book chapters

FUKUDA A.##, MIWA K.##, HIRANO E.##, SUZUKI M.##, HIGUCHI H.##, MORISHITA E.##, ANDERSON D.J.##, WAUGH S.M.## & **PHILLIPS R.A.** 2004. BGD-L-II: a GPS data logger for birds. (In Naito, Y. Bio-logging science. Proceedings of the International Symposium on Bio-logging Science, Tokyo March 2003. *Memoirs of National Institute of Polar Research special issue*, no. 58. Tokyo, National Institute of Polar Research, 234-245.)

TUCK G.N.##, POLACHECK T.##, **CROXALL J.P.**, WEIMERSKIRCH H.##, RYAN P.G.##, NEL D.##, WAYTE S.## & BULMAN C.M.## 2004. Modelling the impact of fishery incidental mortality on three populations of wandering albatross. (In Tuck, G.N. *A comprehensive study of the ecological impacts of the worldwide pelagic longline industry: Southern Hemisphere studies*. Hobart, CSIRO Marine Research, 149-223.)

Unrefereed publications

GONZÁLEZ-SOLÍS J. 2004. Carronyers antàrtics: els petrells gegants segregació sexual i interespecífica del nínxol ecològic. *Omnis Cellula*, No. 6, 47-53.

Other special projects

Refereed research papers 2004 listed in ISI database

FORCADA J., GAZO M.##, AGUILAR A.##, GONZALVO J.## & FERNÁNDEZ-CONTRERAS M.## 2004. Bottlenose dolphin abundance in the northwestern Mediterranean: addressing heterogeneity in distribution. *Marine Ecology Progress Series*, **275**, 275-287.

GINGELE F.X.##, DE DECKKER P.## & **HILLENBRAND C.-D.** 2004. Late Quaternary terrigenous sediments from the Murray Canyons area offshore South Australia and their implications for sea level change, palaeoclimate and palaeodrainage of the Murray-Darling Basin. *Marine Geology*, **212**, No. 1-4, 183-197.

HAYWOOD A.M. & VALDES P.J.++ 2004. Modelling Pliocene warmth: contribution of atmosphere, oceans and cryosphere. *Earth and Planetary Science Letters*, **218**, No. 3-4, 363-377.

HAYWOOD A.M., VALDES P.J.++ & MARKWICK P.J.\$\$ 2004. Cretaceous (Wealden) climates: a modelling perspective. *Cretaceous Research*, **25**, No. 3, 303-311.

HUGHES R.N.++, MANRIQUEZ P.H.++, **MORLEY S.A.**, CRAIG S.F.++ & BISHOP J.D.D.** 2004. Kin or self-recognition? Colonial fusibility of the bryozoan *Celleporella hyalina*. *Evolution and Development*, **6**, No. 6, 431-437.

McALLISTER M.K.++, **HILL S.L.**, AGNEW D.J.++, KIRKWOOD G.P.++ & BEDDINGTON J.R.++ 2004. A Bayesian hierarchical formulation of the De Lury stock assessment model for abundance estimation of Falkland Islands' squid (*Loligo gahi*). *Canadian Journal of Fisheries and Aquatic Sciences*, **61**, No. 6, 1048-1059.

MARTIN A.R. & da SILVA V.M.F.## 2004. Number, seasonal movements, and residency characteristics of river dolphins in an Amazonian floodplain lake system. *Canadian Journal of Zoology*, **82**, 1307-1315.

MARTIN A.R. & da SILVA V.M.F.## 2004. River dolphins and flooded forest: seasonal habitat use and sexual segregation of botos (*Inia geoffrensis*) in an extreme cetacean environment. *Journal of Zoology*, **263**, 295-305.

MARTIN A.R., da SILVA V.M.F.## & **SALMON D.L.** 2004. Riverine habitat preferences of botos (*Inia geoffrensis*) and tucuxis (*Sotalia fluviatilis*) in the central Amazon. *Marine Mammal Science*, **20**, No. 2, 189-200.

SOMOZA L.##, MARTÍNEZ-FRÍAS J.##, **SMELLIE J.L.**, REY J.## & MAESTRO A.## 2004. Evidence for hydrothermal venting and sediment volcanism discharged after recent short-lived volcanic eruptions at Deception Island, Bransfield Strait, Antarctica. *Marine Geology*, **203**, No. 1-2, 119-140.

TAYLOR S.P.++, **HAYWOOD A.M.**, VALDES P.J.++ & SELLWOOD B.W.++ 2004. An evaluation of two spatial interpolation techniques in global sea-surface temperature reconstructions: Last Glacial Maximum and Pliocene case studies. *Quaternary Science Reviews*, **23**, No. 9-10, 1041-1051.

TORNERO V.##, BORRELL A.##, **FORCADA J.** & AGUILAR A.## 2004. Tissue distribution of retinoids in common dolphins *Delphinus delphis*. *Marine Ecology Progress Series*, **280**, 275-283.

TORNERO V.##, BORRELL A.##, **FORCADA J.**, PUBILL E.## & AGUILAR A.## 2004. Retinoid and lipid patterns in the blubber of common dolphins (*Delphinus delphis*): implications for monitoring vitamin A status. *Comparative Biochemistry and Physiology*, **137B**, 391-400.

TRIBBECK M.J.++, GURNEY R.J.++, **MORRIS E.M.** & PEARSON D.W.C.++ 2004. A new Snow-SVAT to simulate the accumulation and ablation of seasonal snow cover beneath a forest canopy. *Journal of Glaciology*, **50**, No. 169, 171-182.

VAUGHAN A.P.M., DOWLING L.A.##, MITCHELL F.J.G.##, LAURITZEN S.-E.##, McCABE A.M.++ & COXON P.## 2004. Depositional and post-depositional history of warm stage deposits at Knocknacran, Co. Monaghan Ireland: implications for preservation of Irish last interglacial deposits. *Journal of Quaternary Science*, **19**, No. 6, 577-590.

Refereed research papers 2004 NOT listed in ISI database

STEPHENSON M.H.** , **WILLIAMS M.**, LENG M.J.** & MONAGHAN A.** 2004. Aquatic plant microfossils of probable non-vascular origin from the Ballagan Formation (Lower Carboniferous), Midland Valley, Scotland. *Proceedings of the Yorkshire Geological Society*, **55**, Pt. 2 2004.

STEPHENSON M.H.** , **WILLIAMS M.**, MONAGHAN A.** , ARKLEY S.** , SMITH R.A.** , DEAN M.** , BROWNE M.A.E.** & LENG M.** 2004. Palynomorph and ostracod biostratigraphy of the Ballagan Formation, Midland Valley of Scotland, and elucidation of intra-Dinantian unconformities. *Proceedings of the Yorkshire Geological Society*, **55**, Pt. 2, 131-143.

WILKINSON I.P.** , **WILLIAMS M.**, SIVETER D.J.++ & WILBY P.R.** 2004. A Carboniferous necrophagous myodocopid ostracod from Derbyshire, England. *Revista Española de Micropaleontología*, **36**, No. 1, 195-206.

Books authored

REES P.M.## & CLEAL C.J.%% 2004. Lower Jurassic floras from Hope Bay and Botany Bay, Antarctica. *Special papers in palaeontology*, 72. London, Palaeontological Association, 92p.

Book chapters

O'BRIEN P.E.##, COOPER A.K.##, FLORINDO F.##, HANDWERGER D.A.##, **LAVELLE M.**, and 6 others. 2004. Prydz Bay fan and the history of extreme ice advances in Prydz Bay. (In Cooper, A.K., O'Brien, P.E. & Richter, C., eds. *Proceedings of the Ocean Drilling Program vol. 188. Scientific results. Prydz Bay-Cooperation Sea, Antarctica: glacial history and paleoceanography*. College Station Texas, Ocean Drilling Program, [14p.]

Unrefereed publications

HAYWOOD A.M. & WILLIAMS M. 2004. Reconstructing the oceans of the Late Miocene: how the shell chemistry of fossils reveals ancient patterns of ocean circulation. *Teaching Earth Sciences*, **29**, No. 2, 25-27.

Meteorological and Ozone Monitoring Unit

Refereed research papers 2004 listed in ISI database

ROSCOE H.K. 2004. Possible descent across the 'Tropopause' in Antarctic winter. *Advances in Space Research*, **33**, No. 7, 1048-1052.

ROSCOE H.K. 2004. A review of stratospheric H₂O and NO₂. *Advances in Space Research*, **34**, No. 8, 1747-1754.

ROSCOE H.K., FOWLER C.L., SHANKLIN J.D. & HILL J.G.T. 2004. Possible long-term changes in stratospheric circulation: evidence from total ozone measurements at the edge of the Antarctic vortex in early winter. *Quarterly Journal of the Royal Meteorological Society*, **130**, Pt. A, No. 598, 1123-1135.

Refereed research papers 2004 NOT listed in ISI database

ROSCOE H.K. 2004. The influence of volcanic activity on large-scale atmospheric processes: continuing the discussion. *Weather*, **59**, No. 12, 342-345.

South Georgia

Refereed research papers 2004 listed in ISI database

DICKSON J., MORLEY S.A. & MULVEY T. 2004. New data on *Martialia hyadesi* feeding in the Scotia Sea during winter; with emphasis on seasonal and annual variability. *Journal of the Marine Biological Association of the United Kingdom*, **84**, No. 4, 785-788.

KOCK K.-H.##, BELCHIER M. & JONES C.D.## 2004. Is the attempt to estimate the biomass of Antarctic fish from a multi-species survey appropriate for all targeted species? *Notothenia rossii* in the Atlantic Ocean sector - revisited. *CCAMLR Science*, **11**, 141-153.

MORLEY S.A., MULVEY T., DICKSON J. & BELCHIER M. 2004. The biology of the bigeye grenadier at South Georgia. *Journal of Fish Biology*, **64**, No. 6, 1514-1529.

Environment and Information Division

Unrefereed publications

COOPER A.P.R. 2004. Is there progress in GIS? *Geographic Information*, **14**, No. 4, 9.

FLEMING A.H. & KORB R.E. 2004. A comparison of satellite and cruise chlorophyll-*a* measurements in the Scotia Sea Antarctica. (In: *2004 International Geoscience and Remote Sensing Symposium proceedings. Science for society: exploring and managing a changing planet, Anchorage, Alaska, September 2004*. n.pl., IEEE Press, [4p.]

McHUGO M.B.%% 2004. *Topographical survey and mapping of British Antarctic Territory, South Georgia and the South Sandwich Islands 1944-1986*. Cambridge, British Antarctic Survey, 83p.

WALTON D.W.H. 2004. Review of *Northern lights against POPs: combating toxic threats in the Arctic* edited by D.L. Downing and T. Fenge. Montreal, McGill-Queen's University Press, 2003. *Antarctic Science*, **16**, No. 1, 87.

WALTON D.W.H. 2004. Review of *Norway - a constituent polar nation? Analysis of an image seen through the history of the Norwegian Polar Institute* by S. Barr. Kolofon AS, Norway, 2003. *Antarctic Science*, **16**, No. 1, 88-89.

WALTON D.W.H. 2004. Scientific publications - free for all? (Editorial). *Antarctic Science*, **16**, No. 3, 217.

Administration and Logistics Division

Book chapters

AFANASYEV V. 2004. A miniature daylight level and activity data recorder for tracking animals over long periods. (*In* Naito, Y. Bio-logging science. Proceedings of the International Symposium on Bio-logging Science, Tokyo March 2003. *Memoirs of National Institute of Polar Research special issue*, no. 58. Tokyo, National Institute of Polar Research, 227-233.)

BAS Corporate

BAKER D.N.##, BARTON C.##, RODGER A.S., FRASER B.##, THOMPSON B.## & PAPITASHVILI V.## 2004. Moving beyond the IGY: the electronic Geophysical Year (eGY) concept. *Eos. Transactions, American Geophysical Union*, **85**, No. 11, 105-109.

ELACHI C.##, ALLISON M.D.##, BORGARELLI L.##, and 19 others##, including C.G. RAPPLEY. 2004. RADAR: the Cassini Titan radar mapper. *Space Science Reviews*, **115**, No. 1-4, 71-110.

ICSU IPY 2007-2008 PLANNING GROUP (Chairman: C.G. Rapley) 2004. *A framework for the International Polar Year 2007-2008*. Paris, ICSU, 38p.