

Colin Goldblatt

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Employment

- 2008 – present NASA Postdoctoral Program Fellowship, NASA Ames Research Center, California, U.S.A.
Advisor: Dr Kevin Zahnle
- 2008 – 2008 Research Assistant, School of Environmental Sciences, University of East Anglia, U.K.

University Education

- 2005 – 2008 PhD, School of Environmental Sciences, University of East Anglia, U.K.
Bistability of atmospheric oxygen, the Great Oxidation and climate
Supervisors: Prof. Tim Lenton and Prof. Andy Watson FRS.
- 2003 – 2005 PhD student, School of Geographical Sciences, University of Bristol, U.K.
Transferred to UEA when Prof. Lenton moved to UEA.
- 1999 – 2003 BSc(Hons) Meteorology and Oceanography, Class I,
Schools of Environmental Sciences and Mathematics, University of East Anglia, U.K.
Including academic year 2001 – 2002 as:
Exchange Student, University of Colorado, USA.

Awards

- 2008 Editors' Citation for Excellence in Refereeing for Global Biogeochemical Cycles.
- 2003 Prize for best final year project, School of Environmental Sciences, University of East Anglia.
- 2001 Ede and Ravencroft Prize for significant academic and extra curricular achievement, University of East Anglia.

Grants

- 2010 – 2014 NASA Planetary Atmospheres Grant (\$300,000)
- 2008 – 2010 NASA Postdoctoral Program Fellowship (\$120,000)
- 2007 Goldschmidt Student Travel Grant (€500)
- 2007 Bioastronomy Meeting Student Travel Grant (\$1760)

Professional Service

- Reviewer for: *Global Biogeochemical Cycles*
Geophysical Research Letters

Session organiser for *Goldschmidt 2010: 01e: Mantle-Atmosphere Interactions on Earth and Beyond*.

Journal articles

- C. Goldblatt**, A. J. Watson and T. M. Lenton, Bistability of atmospheric oxygen and the Great Oxidation: implications for life detection, *Proceedings of Bioastronomy 2007, ASP Conf. Ser.*, in press.
- C. Goldblatt**, N. Sleep, K. J. Zahnle and E. G. Nisbet, The Eons of Chaos and Hades, *Solid Earth Discuss.*, 1, 47-53, 2009.
- C. Goldblatt**, A. J. Matthews, M. W. Claire, T. M. Lenton, A. J. Watson and K. J. Zahnle, Nitrogen-enhanced greenhouse warming on early Earth, *Nature Geoscience*, 2(12), 891-896, 2009, doi:10.1038/geo692.
- C. Goldblatt**, T. M. Lenton and A. J. Watson, An evaluation of the longwave radiative transfer code used in the Met Office Unified Model, *Quart. J. Roy. Met. Soc.*, 135(640), 619-633, 2008, doi:10.1002/qj.403.

M. T. Johnson, N. E. Vaughan, P. Goodwin, **C. Goldblatt**, S. Roudesl and T. M. Lenton, Why NH₃ Is Not a Candidate Reagent for Ambient CO₂ Fixation: A Response to “Alternative Solution to Global Warming Arising from CO₂ Emissions—Partial Neutralization of Tropospheric H₂CO₃ with NH₃”, *Environ. Prog.*, 27(3), 412-417, 2008, doi:10.1002/ep.10298.

C. Goldblatt, T. M. Lenton and A. J. Watson, Bistability of atmospheric oxygen and the Great Oxidation, *Nature*, 443, 683-686, 2006, doi:10.1038/nature05169.

K. W. Nicholls, et al. [22 authors including **C. Goldblatt**], Measurements beneath an Antarctic ice shelf using an autonomous underwater vehicle, *Geophys. Res. Lett.*, 33, L08612, 2006, doi:10.1029/2006GL025998.

Conference presentations

Poster: C. Goldblatt. Whitewashed ground or real clouds? Explicit representation of the radiative properties of clouds brings the outer edge of the habitable zone inward and cools the early Earth, *AGU Fall Meeting*, 14–18 December 2008, San Francisco, U.S.A.

Oral: C. Goldblatt. A. J. Matthews, M. Claire, T. M. Lenton, A. J. Watson and K. J. Zahnle, Nitrogen as a resolution of the Faint Young Sun Paradox, *Astrobiology Graduate Conference (AbGradCon)*, 17–20 July 2009, Seattle, U.S.A.

Poster: C. Goldblatt. A. J. Matthews, M. Claire, T. M. Lenton, A. J. Watson and K. J. Zahnle, Nitrogen as a resolution of the Faint Young Sun Paradox, *The Royal Meteorological Society Conference*, 29 June–2 July 2009, Reading, United Kingdom.

Poster: C. Goldblatt, T. M. Lenton and A. J. Watson, An evaluation of the longwave radiative transfer code used in the Met Office Unified Model, *The Royal Meteorological Society Conference*, 29 June–2 July 2009, Reading, United Kingdom.

Oral: C. Goldblatt. A. J. Matthews, M. Claire, T. M. Lenton, A. J. Watson and K. J. Zahnle, There was probably more nitrogen in the Archean atmosphere - this would have helped resolve the Faint Young Sun paradox, *Goldschmidt*, 21–26 June 2009, Davos, Switzerland.

Poster: C. Goldblatt. A. J. Matthews, T. M. Lenton, A. J. Watson and K. J. Zahnle, The nitrogen content of the early atmosphere: climatic consequences and surface–geosphere exchange, *Developments In Noble Gas Understanding and Expertise (DINGUE) workshop*, 19–20 June 2009, Nancy, France.

Invited, oral: C. Goldblatt, A. J. Matthews, T. M. Lenton, A. J. Watson and K. J. Zahnle, The Global Nitrogen Budget and the Faint Young Sun Paradox, *AGU Fall Meeting*, 15–19 December 2008, San Francisco, U.S.A.

Poster: C. Goldblatt, T. M. Lenton and A. J. Watson, Bistability of atmospheric oxygen and the Great Oxidation: implications for life detection, *Royal Society discussion meeting: Photosynthetic and atmospheric evolution*, 12–13 November 2007, London, U.K.

Oral: C. Goldblatt, T. M. Lenton and A. J. Watson, Bistability of atmospheric oxygen and the Great Oxidation, *Goldschmidt*, 20–24 August 2007, Cologne, Germany.

Oral: C. Goldblatt, T. M. Lenton and A. J. Watson, Bistability of atmospheric oxygen and the Great Oxidation: implications for life detection, *Bioastronomy 2007*, 15–19 July, Puerto Rico.

Poster: C. Goldblatt, T. M. Lenton and A. J. Watson, Bistability of atmospheric oxygen and the Great Oxidation: implications for life detection, *Astrobiology Graduate Conference (AbGradCon)*, 13–14 July 2007, Puerto Rico.

Poster: C. Goldblatt, T. M. Lenton and A. J. Watson, The Great Oxidation at ~2.4 Ga as a bistability in atmospheric oxygen due to UV shielding by ozone, *European Geosciences Union*, 2–7 April 2006, Vienna, Austria.

Oral: C. Goldblatt, A. J. Watson and T. M. Lenton, Multiple extreme glaciations in the Palaeoproterozoic: coupled climate biogeochemical dynamics, *Earth System Processes II*. 8–11 August 2005, Calgary, Canada.

Departmental Seminars

Met, Ocean and Climate seminar series, School of Environmental Sciences, University of East Anglia, U.K., *A double bill of radiative transfer with a bit of geochemistry thrown in for fun: An evaluation of the longwave radiative transfer code used in the Met Office Unified Model followed by solving the Faint Young Sun Paradox with nitrogen* (10 July 2009).

Earth Science, University of Durham, U.K., *Geological and atmospheric nitrogen budgets an the Faint Young Sun paradox* (6 July 2009).

Space Science Seminar Series, NASA Ames Research Center, California, U.S.A., *The N₂ inventory of the Early Earth atmosphere: Climatic consequences and surface-mantle geochemical cycling* (21 January 2009).

Earth and Planetary Sciences, University of California Santa Cruz, U.S.A., *The global nitrogen cycle and the faint young sun paradox* (17 October 2008).

Space Science Division, NASA Ames Research Center, California, U.S.A., *Bistability of atmospheric oxygen: understanding the Great Oxidation and finding other planets* (8 February 2007).

Geochemical Luncheon Club, School of Environmental Sciences, University of East Anglia, U.K., *The Great Oxidation at ~2.4 Ga as a bistability in atmospheric oxygen* (23 January 2006).

Education and Outreach

San Jose Tech Museum Space Week. Talks to museum visitors, both school children and adults. *Life and planetary atmospheres: Earth and beyond* (22 July 2009).

NASA Digital Learning Network. Broadcast seminar to high school and middle school students. *Life and planetary atmospheres: Earth and beyond* (1 April 2009 & 16 June 2009).

Research training and courses

Sept 2004 Earth System Sciences Summer School, University of Reading, UK.

Jan – Feb 2004 European Research Course in Atmospheres (ERCA), Grenoble, France.

June – Aug 2002 Summer Student Fellow, Woods Hole Oceanographic Institution, MA, USA.

Fieldwork experience

Jan – Feb 2004 Five week research cruise on *RRS James Clark Ross* in the Southern Ocean. Responsibilities included operating CTD, processing hydrographic data and general watchkeeping duties.

Aug 2003 Field Assistant on geomorphological fieldwork in north-east Iceland.