

**JOHN A. TARDUNO**

Professor of Geophysics

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2005-present Professor of Physics and Astronomy, University of Rochester, Rochester, NY.

2000-present Professor of Geophysics, University of Rochester, Rochester, NY.

1998-2006 Chair, Department of Earth and Environmental Sciences

1996 Associate Professor of Geophysics, University of Rochester, Rochester, NY.

1993 Assistant Professor of Geophysics, University of Rochester, Rochester, NY.

1990 Assistant Research Geophysicist, Scripps Institution of Oceanography, La Jolla, Ca.

1989 National Science Foundation Postdoctoral Fellow, ETH, Zürich, Switzerland

1988 JOI/USSAC Ocean Drilling Fellow, Stanford University, Stanford, Ca.

1987 Ph.D. (Geophysics), Stanford University, Stanford, Ca.

1987 M.S. (Geophysics) Stanford University, Stanford Ca.

1983 B.S. (Geophysics) Lehigh University, Bethlehem Pa.

**Honors and Awards:**

Phi Beta Kappa (1983)

Fellow, Geological Society of America (1998)

JOI/USSAC Distinguished Lecturer (2000-2001)

Goergen Award for Distinguished Achievement and Artistry in Undergraduate Teaching (2001)

Fellow, American Association for the Advancement of Science (2003)

American Geophysical Union/Geomagnetism and Paleomagnetism Section Bullard Lecturer (2004)

Fellow, John Simon Guggenheim Foundation (2006-2007)

Edward Peck Curtis Award for Excellence in Undergraduate Teaching (2007)

Fellow, American Geophysical Union (2007)

GSA Structure and Tectonics Outstanding Publication Award (2014)

Honorary Professor, University of KwaZulu-Natal, South Africa (2014)

Price Medal, RAS (2016)

**Memberships:** AGU, GSA, FRAS, EGU, AAAS**Research Interests:**

Paleomagnetism applied to studies of hotspot and polar motion, the origin and long-term history of the geodynamo, dynamos on meteorite parent bodies, planetary habitability, and paleoclimate

**Marine Geology and Geophysics Experience:**

paleomagnetist, Western Equatorial Pacific ODP Leg 130, Ontong Java Plateau (1990)  
paleomagnetist, Mid-Pacific Mountains ODP Leg 143 (1992)  
Co-chief scientist and lead proponent, Hawaiian-Emperor Hotspot Test ODP Leg 197 (2001)

**Select Field Experience:**

2015-1990 High Canadian Arctic, led 11 expeditions, Mesozoic lavas and paleoclimate  
2014, 2011 Zimbabwe, Archean Great Dyke and related units  
2014, Botswana and Zimbabwe, archeomagnetism  
2014, 2011, 2009, 2008, 2007, 2004, 2003 South Africa Archean; archeomagnetism  
2014, 2012 Northern Quebec, Canada, Cambrian Sept Iles Complex and Cambrian dikes  
2012, 2011 Western Australia Archean (Pilbara and Yilgarn cratons)  
2011, 2007, 2005, New Zealand (Chatham Islands) Mesozoic lavas  
2010 Central India (Chhattisgarh) Archean  
2007, 2006 Mauritania, Mesozoic dykes  
2006 Eastern Australia, Permian  
1998, 1996 Eastern India (Rajmahal Traps) Mesozoic lavas

**Select Service Activities:**

Member, Joint Oceanographic Institutions (JOIDES) Lithosphere Panel, 1992-1995

Liaison, JOIDES Ocean History Panel, 1992-1995

Member, AGU Geomagnetism and Paleomagnetism Executive Committee, 1996-2002

Chair, JOIDES Scientific Steering and Evaluation Committee, Dynamics of Earth's Interior, 1997-1999

This panel was composed of 16 international members charged with nurturing and reviewing scientific proposals for scientific drilling. The panel guided ocean drilling-based research in the following areas: mantle dynamics, the Earth's oceanic crust and lithosphere, hydrothermal deposits, the tectonics of convergent, passive and transcurrent boundaries, earthquake processes, deep Earth's structure and monitoring of active processes. Member countries represented on the panel included the United States, United Kingdom, Germany, France, Norway, Italy, Canada, Australia, Switzerland and Japan. Meetings were coordinated with a parallel panel that reviewed proposals concerning Earth's environment (chaired by Professor Ted Moore, University of Michigan). These panels were involved with science planning to meet guidelines set forth in the 1996 Long Range Plan of the Ocean Drilling Program.

Co-chaired Marine Geology and Geophysics Working Group 1998 SCICEX Planning Meeting (see Arctic Ocean Science From Submarines: A Report Based on the SCICEX 2000 Workshop, published by Applied Physics Laboratory, University of Washington (April, 1999).

Member, Editorial Board for *Geology*, 2001-2003

Member, National Science Foundation Geophysics Panel, 2002-2004

Co-convenor, "A Workshop on the Amerasian Basin and its Margins", Washington, DC, 2004

G-cubed Guest editor, Movement, Dynamics and Geochemical Evolution of the Hawaiian Hotspot Theme, 2003-2004

Member, Review Advisory Committee, Institute for Rock Magnetism, University of Minnesota, 2005-2010

Invited Speaker, AGU Geophysical Information for Teachers (GIFT) workshop, Fall, 2005

Member, Integrated Ocean Drilling Program Detailed Planning Group 2006-2007  
Member, National Science Foundation Ocean Sciences Panel, 2007  
Editor, *Geochemistry, Geophysics, Geosystems (G-cubed)*, 2005-2008; Senior Editor, 2009  
Chair, Institute for Rock Magnetism, University of Minnesota, Review and Advisory Committee, 2006-2010  
Member, AGU Fleming Medal Committee, 2010-2012  
Chair, Norwegian Research Council Virtual Panel, 2011-2012  
Editorial Committee, *Frontiers of Earth Science*, China, 2011-  
Member, National Science Foundation Panel, 2011  
Member, Proposal Evaluation Panel, Integrated Ocean Drilling Program 2012-2013  
Member, National Science Foundation Panel, 2014  
Member, Science Evaluation Panel, International Ocean Discovery Program 2014-2015  
Member, AGU Fleming Medal Committee, 2015-2017

**Select Outreach Activities:**

New York Times Interview with Bill Broad on recent decay of Earth's dipole magnetic field:

(Will Compasses Point South?)

CNN interview with Lou Dobbs on decay of Earth's dipole magnetic field, see:

<http://transcripts.cnn.com/TRANSCRIPTS/0407/13/ldt.00.html>

Interview on global change for Rochester-based documentary (Comfort Zone), see

[www.lastexperiment.com](http://www.lastexperiment.com)

Lecturer for University of Hawaii Seminar on Advanced Plate Tectonics (see article Seminar 2.0: Learning with Skype and Video Podcasts, P. Wessel et al., *Eos*, vol 90, 2009); podcast available at:

<http://www.soest.hawaii.edu/pwessel/podcasts>

Science Teachers Association of New York State/Earth Science Teachers 2009 Speaker

Interview on Arctic paleoclimate distributed via YouTube (<http://www.youtube.com/watch?v=5ZISVQSBYCE>)

Rochester Museum & Science Center 2013 Richard C. Shultz Science on the Edge Lecturer "Crocodiles at the Poles: Viewing the Past and Future Ice-free Arctic"

WXXI Rochester Radio Interview on Arctic paleoclimate 2013

Rochester Science Café speaker on Arctic expeditions 2013

**Graduate Advisor:** Michael McWilliams (Stanford University)

**Postdoctoral Advisor:** William Lowrie (ETH)

**Teaching:**

EES101 Introduction to the Geological Sciences (14 years); EES102Q/202, Earthquakes, Volcanoes and Mountain Ranges: A Field Quest in California (10 years); EES 252/452, Marine Geology, EES 255/455, Planetary Science; EES 256/456, Paleomagnetism; EES 258/458, Hotspots and Plate Motions; EES299 Field Geology

**Postdoctoral Research Advisee:** Yoichi Usui (currently at IFREE, Japan)

**Graduate Research Advisees (Principal Advisor only):**

Wenlai Tian (MS 1998), Michael Myers (MS 1998), Rory Cottrell (MS, 1999; PhD 2000) Alexei Smirnov (MS, 2000;

PhD 2002), Olga Libman (MS 2002), Pavel Doubrovine (MS, 2003, Ph.D. 2008) Dorothy Bauch (MS 2006), Deborah Vandermark (MS 2006), Anna Wendt (MS 2008), Julia Voronov (MS, 2009), Yoichi Usui (PhD 2009 Tohoku University), Julia Nelson (MS, 2010), Richard Bono (PhD candidate), Matthew Dare (MS candidate), Nicholas Hebdon (MS candidate), Timothy O'Brien (PhD candidate).

#### **Undergraduate Research Advisees:**

Anna Synder (Undergraduate research project, 1995), Sarah Wilkison (BS Senior thesis, 1997), Bethany Daeffler (Undergraduate research project, 1998), Olga Libman (BS Senior thesis, 1998), Howard Scher (BS Senior thesis, 1999), Sara Pruss (BS Senior thesis, 1999), Chris Butzer (BS Senior thesis, 2000), Nadia Albers (Undergraduate Research project, 2002), Matt Friedman (BS Senior thesis, 2002), Peter Lippert (BS Senior thesis, 2002), Allyson O'Kane (Undergraduate research project, 2003), Kathy Bailey (BS Senior thesis, 2003), Gwen Olton (Undergraduate research project, 2004), Chris Hayes (Undergraduate research project, 2005), Dan Sinnett (BS Senior thesis, 2005), Dorothy Bauch (BS Senior thesis, 2005), Kara Morris, (Undergraduate research project, 2006), Grant Dauber (Undergraduate research project, 2006), Curtis Congreave (Undergraduate research project, 2006), Holly Brown (BS Senior thesis, 2006), Anna Wendt (BS Senior thesis 2007), Allison Sail (BS Senior thesis, 2008), Stephanie Mason (BS Senior thesis, 2008), Julia Voronov (BS undergraduate research project, 2008), Valerie Morris (BS undergraduate research project, 2008), Julia Nelson (BS undergraduate research 2009), Richard Bono (BS Senior thesis, 2010), Julianna Hopkins (BS Senior thesis, 2010), Austen Erickson (BS Senior thesis, 2010), Cecilia Scribner (BS Senior thesis, 2012), Robert McKinley (BS Senior thesis 2013), Paul Kintner (BS undergraduate research 2013), Emily Kraus (BS Senior thesis 2013), Alexandra Kuznetsov (BA research 2013), Samantha Tramontano (BS Senior thesis 2013), Catherine Harmer (REU project, 2013), Divya Persaud (REU project, 2013), Courtney Wagner (REU project, 2014; Senior Thesis, 2015), Miriam Grigsby and Sebastian Fearn (current).

#### **Invited Presentations:**

Boston University, Bremen University, Germany; Brock University, Canada; California Institute of Technology; Canadian Geological Survey; Colgate University; ETH Zurich Switzerland; Franklin & Marshall College; Hobart and William Smith Colleges (Woodrow Lecture); Idaho State University; Lehigh University; Indian Institute of Geomagnetism, Navi Mumbai (India); Ludwigs-Maximilians-Universitaet Muenchen; MIT; Michigan Tech; Northwestern University; Ocean Drilling Program (Texas A&M University); Paleomagnetism and Geochronology Laboratory, Beijing, China; Princeton University, Rutgers University; Scripps Institution of Oceanography (University of California, San Diego); Stanford University; State University of New York Albany; State University of New York Brockport; State University of New York Buffalo; Syracuse University, Trinity College; University of Akron; University of Alaska Anchorage; University of Arizona; University of California Berkeley; University of California Santa Cruz; University of Chicago; University of Michigan; University of Minnesota; University of Munster, Germany; University of Rhode Island; University of Rochester (Earth and Environmental Sciences, Physics and Astronomy, LLE, Provost Seminars, Alumni Association); University of Southern California; University of Toronto; University of Toronto Scarborough; Universitaet Tuebingen, Germany; University of Wisconsin River Falls; University of Wisconsin, Madison; University of Wyoming; Yale University; AGU; EGS; EGU; GSA; IGC; IRIS Keynote speaker, Compres Keynote speaker, JOIDES meetings (post-cruise, SCICOM), Peninsula Geological Society (California), NUNA Keynote speaker (Canada), Institute for Rock Magnetism Conferences, SEDI, Science Teachers Association of New York State/Earth Science Teachers Speaker; ESF ArchEnv Mid-term Conference Vienna.

## Publication List

- Tarduno, J.A., Cottrell, R.D., Davis, W.J., Nimmo, F., and Bono, R.K., A Hadean to Paleoproterozoic geodynamo recorded by single zircon crystals, *Science*, 349, 521-524, 2015.  
\_\_\_\_\_ see review by J. Aubert, Ancient planetary dynamos, take two, *Science*, 349, 475-476, 2015.
- Tarduno, J.A., M. Watkeys, T. Huffman, R.D. Cottrell, E.G. Blackman, A. Wendt, C.A. Scribner, C.L. Wagner, Antiquity of the South Atlantic Anomaly: Evidence for top-down control on the geodynamo, *Nature Communications*, 6:7865, 2015.
- Bono, R.K. and J.A. Tarduno, Stable Earth, reversing field in the Ediacaran: A single silicate crystal study of the ca. 565 Ma Sept-Iles Intrusive Suite in Laurentia, *Geology*, 43, 131-134, 2015.
- Tarduno, J.A., E. Blackman, and E. Mamajek, Detecting the oldest geodynamo and attendant shielding from the solar wind: Implications for habitability, *Physics of Earth and Planetary Interiors*, 233, 68-87, 2014.
- Tarduno, J.A., and R.D. Cottrell, Signals from the ancient geodynamo: A paleomagnetic field test on the Jack Hills metaconglomerate, *Earth and Planetary Science Letters*, 367, 123-132, 2013.
- Tarduno, J.A., R.D. Cottrell, F. Nimmo, J. Hopkins, J. Voronov, A. Erickson, E. Blackman, E.R.D. Scott and R. McKinley, Evidence for a dynamo in the main group pallasite parent body, *Science*, 338, 939-942, 2012.
- Tarduno, J.A., Geomagnetism: Hum from the quiet zone, *Nature Geoscience*, 5, 161-162, 2012.
- Neukirch, L.P. and J.A. Tarduno, T.N. Huffman, M.K. Watkeys, C.A. Scribner and R.D. Cottrell, An archeomagnetic analysis of brunt grain bin floors from ca. 1200 to 1250 AD Iron-age Africa, *Physics Earth Planetary Interiors*, 190-191, 71-79, 2012.
- Smirnov, A.V. and J.A. Tarduno, Evolving core conditions ca. 2 billion years ago detected paleosecular variation, *Physics Earth Planetary Interiors*, 187, 225-231, 2011.
- Smirnov, A.V. and J.A. Tarduno, Development of a low-temperature insert for the measurement of remanent magnetization direction using superconducting quantum interference device rock magnetometers, *Geochemistry, Geophysics, Geosystems*, 12, Q04Z23, 2011.
- Tarduno, J.A., R.D. Cottrell, M.K. Watkeys, A. Hofmann, P.V. Doubrovine, E.E. Mamajek, D. Liu, D.G. Sibeck, L.P. Neukirch and Y. Usui, Geodynamo, Solar wind, and magnetopause 3.4 to 3.45 billion years ago, *Science*, 327, 1238-1240, 2010.  
\_\_\_\_\_ see review by M. Jardine, Sunscreen for the young Earth, *Science*, 327, 1206-1207, 2010.
- Aubert, J., J.A. Tarduno and C.L. Johnson, Observations and models of the long-term evolution of Earth's magnetic field, *Space Sci. Rev.*, 155, 337-370, 2010.
- Smirnov, A.V., and J.A. Tarduno, Co-location of eruption sites of the Siberian Traps and North Atlantic Igneous Province: Implications for the nature of hotspots and mantle plumes, *Earth Planet. Sci. Lett.*, 297, 687-690, 2010.
- Tarduno, J.A., H.-P. Bunge, N. Sleep and U. Hansen, The bent Hawaiian-Emperor hotspot track: Inheriting the mantle wind, *Science*, 324, 50-53, 2009.

- Tarduno, J.A., Geodynamo history preserved in single silicate crystals: Origins and long-term mantle control, *Elements*, 5, 217-222, 2009.
- Usui, Y., J.A. Tarduno, M. Watkeys, A. Hofmann and R.D. Cottrell, Evidence for a 3.45 billion-year-old magnetic remanence from conglomerates of South Africa, *Geochem. Geophys. Geosystems (G-cubed)*, 10, Q09Z07, 2009.
- Dobrovine, P.A., J.A. Tarduno and X. Zhao, On the magnetostratigraphic age of Nauru Basin basalts of the western Pacific Ocean and timing of Ontong Java volcanism, *Earth Planet. Sci. Lett.*, 287, 175-184, 2009.
- Vandermark, D., J.A. Tarduno, D.B. Brinkman, R.D. Cottrell and S. Mason, New Late Cretaceous macrobaenid turtle with Asian affinities from the High Canadian Arctic: Dispersal via ice-free polar routes, *Geology*, 37, 183-186, 2009.
- Dobrovine, P. V., and J. A. Tarduno, A Revised Kinematic Model for the Relative Motion between Pacific Oceanic Plates and North America since the Late Cretaceous, *J. Geophys. Res.*, 113, B12101, doi:10.1029/2008JB005585, 2008.
- Cottrell, R.D., J.A. Tarduno and J. Roberts, The Kiaman Reversed Polarity Superchron at Kiama: Toward a field strength estimate based on single silicate crystals, *Physics of the Earth and Planetary Interiors*, 169, 49-58, 2008.
- Dobrovine, P. and J.A. Tarduno, Linking the Late Cretaceous to Paleogene Pacific plate and Atlantic bordering continents using plate circuits and paleomagnetic data, *Journal of Geophysical Research*, 113 B07104 10.1029/2008JB005584, 2008.
- Tarduno, J.A., Hotspots Unplugged, *Scientific American*, 298, 88-93, 2008.
- Tarduno, J.A., R.D. Cottrell, M.K. Watkeys and D. Bauch, Geomagnetic field strength 3.2 billion years ago recorded by single silicate crystals, *Nature*, 446, 657-660, 2007.
- Tarduno, J.A., On the motion of Hawaii and other mantle plumes, *Chemical Geology*, 241, 234-247, 2007.
- Vandermark, D., J.A. Tarduno, and D.B. Brinkman, A fossil champsosaur population from the High Arctic: Implications for Late Cretaceous paleotemperatures, *Palaeogeography, Palaeoclimatology, Palaeoecology*, 248, 49-59, 2007.
- Tarduno, J.A., Single silicate crystal paleomagnetism, *McGraw-Hill 2007 Yearbook of Science and Technology*, Adesnik et al., eds., McGraw-Hill, New York, pp. 215-217, 2007.
- Tarduno, J.A., R.D. Cottrell and A.V. Smirnov, Absolute Paleointensity determination using single plagioclase crystals, in D. Gubbins and E. Herrero-Bervera eds, *Encyclopedia of Geomagnetism and Paleomagnetism*, Encyclopedia of Earth Science Series, Springer, 2007.
- Duncan, R.A., J.A. Tarduno, and D.W. Scholl, Chapter 1. Leg 197 synthesis: Southward motion and geochemical variability of the Hawaiian hotspot, in Duncan, R.A., J.A. Tarduno and D.W. Scholl, *Proceedings of the Ocean Drilling Program, Scientific Results Volume 197*, 1-39, 2006.
- Dobrovine, P.V. and J.A. Tarduno, Alteration and self-reversal in oceanic basalts: Compositional requirements based on data from DSDP and ODP sites in the Pacific Ocean, *Journal of Geophysical Research*, 111, (B12), Art. No. B12S30, 2006.
- Labeyrie, L., V. Salters, J. Tarduno, and P. van Keken, G-Cubed: A snapshot today and a look to the future,

- Geochemistry, Geophysics, Geosystems*, 7, Art. No. Q03005, 2006.
- Dobrovine P.V., and J.A. Tarduno, N-type magnetism at cryogenic temperatures in oceanic basalt, *Physics of the Earth and Planetary Interiors*, 157, 46-54, 2006.
- Tarduno, J.A, R.D Cottrell, and A.V. Smirnov, The paleomagnetism of single silicate crystals: Recording the geomagnetic field during mixed polarity intervals, superchrons and inner core growth, *Reviews of Geophysics*, 44, Art. No. RG1002, 2006.
- Vandermark, D., J.A. Tarduno, and D.B. Brinkman, Late Cretaceous Plesiosaurid teeth from Axel Heiberg Island, High Canadian Arctic, *Arctic*, 59, 79-82, 2006.
- Tarduno, J.A. and R.D. Cottrell, Dipole strength and variation of the time-averaged reversing and non-reversing geodynamo based on Thellier analyses of single plagioclase crystals, *Journal of Geophysical Research*, 110, B11101, doi 10.101029/2005JB003970, 2005.
- Dobrovine, P.V. and J.A. Tarduno, On the compositional field of self-reversing titanomaghemite: Constraints from DSDP Site 307, *Journal of Geophysical Research*, 110, B11104, doi 10.1029/2005JB003865, 2005.
- Brinkman, D.B. and J.A. Tarduno, A Late Cretaceous (Turonian-Coniacian) high-latitude turtle assemblage from the Canadian Arctic, *Canadian Journal of Earth Science* 42, 2073-2080, 2005.
- Smirnov, A.V. and J.A. Tarduno, Thermochemical remanent magnetization in Precambrian rocks: Are we sure the geomagnetic field was weak?, *Journal of Geophysical Research*, 110, Art. No. B06103, 2005.
- Smirnov, A.V., and J.A. Tarduno, Secular variation of the Late Archean-Early Proterozoic geodynamo, *Geophysical Research Letters*, 31, L16607, doi:10.1029/2004GL020333, 2004.
- Dobrovine, P.V., and J.A. Tarduno, The Late Cretaceous paleolatitude of the Hawaiian hotspot: New paleomagnetic data from Detroit Seamount, *Geochemistry, Geophysics, Geosystems*, 5, Q11L04, 2004.
- Dobrovine, P.V., and J.A. Tarduno, Self-reversed magnetization carried by titanomagnetite in oceanic basalts, *Earth and Planetary Science Letters*, 222, 959-969, 2004.
- Tarduno, J.A., and A.V. Smirnov, The paradox of low field values and the long-term history of the geodynamo, in *Timescale of the Paleomagnetic Field (dedicated to N.D. Opdyke)*, eds. J.E.T. Channell, D.V. Kent, W. Lowrie, and J.G. Meert, *AGU Geophysical Monograph*, 145, 75-84, 2004.
- Tarduno, J.A., R.A. Duncan, D.W. Scholl, R.D. Cottrell, B. Steinberger, T. Thordarson, B.C. Kerr, C.R. Neal, F.A. Frey, M. Torii and C. Carvallo, The Emperor Seamounts: Southward motion of the Hawaiian Hotspot plume in Earth's mantle, *Science*, 301, 1064-1069, 2003.  
 \_\_\_\_\_ see review by J. Stock, Hotspots come unstuck, *Science*, 301, 1059-1060, 2003.
- Smirnov, A.V., J.A. Tarduno and B.N. Pisakin, Paleointensity of the early geodynamo (2.45 Ga) as recorded in Karelia: A single crystal approach, *Geology*, 31, 415-418, 2003.
- Cottrell, R.D., and J.A. Tarduno, A Late Cretaceous pole for the Pacific plate: Implications for apparent and true polar wander and the drift of hotspots, *Tectonophysics*, 362, 321-333, 2003.
- Friedman, M., J.A. Tarduno and D.B. Brinkman, Fossil fishes from the high Canadian Arctic: further palaeobiological evidence for extreme climatic warmth during the Late Cretaceous (Turonian-Coniacian), *Cretaceous Research*,

24, 615-632, 2003.

Smirnov, A.V., and J.A. Tarduno, Magnetic hysteresis monitoring of Cretaceous submarine basaltic glass during Thellier paleointensity experiments: Evidence for alteration and attendant low field bias, *Earth and Planetary Science Letters*, 206, 571-585, 2003.

Tarduno, J.A., Cottrell, R.D. and Smirnov, A.V., The Cretaceous Superchron geodynamo: Observations near the tangent cylinder, *Proceedings of the National Academy of Sciences of the USA*, 99, 14020-14025, 2002.

Tarduno, J.A., R. Duncan, and D. Scholl and Shipboard Scientific Party, Leg 197 Summary, in Tarduno, J.A., R. Duncan, and D. Scholl et al., *Proceedings of the Ocean Drilling Project, Initial Results, 197*, College Station, TX (Ocean Drilling Program), p. 1-92, 2002;

Smirnov, A.V., and J.A. Tarduno, Magnetite reveals ambient field strength at low temperatures, *EOS, Trans. Amer. Geophys. Union*, 83, (article), 309, 315-316, 2002.

Tarduno, J.A., and A.V. Smirnov, Response to comment on "Stability of the Earth with respect to the spin axis for the last 130 Million Years", by P. Camps, M. Prévot, M. Daignieres and P. Machel, *Earth and Planetary Science Letters*, 198, 533-539, 2002.

Tarduno, J.A. with Shipboard Scientific Party, Chapter 3, Paleomagnetism and Rock Magnetism, in Mikada, H., Becker, K., Moore, J.C., Klaus, A., et al., *Proceedings of the Ocean Drilling Project, Initial Results, 196*, College Station, TX (Ocean Drilling Program), 2002.

Smirnov, A.V., and J.A. Tarduno, Magnetic field control of the low-temperature magnetic properties of stoichiometric and cation-deficient magnetite, *Earth and Planetary Science Letters*, 194, 359-368, 2002.

Tarduno, J.A., R.D. Cottrell and A.V. Smirnov, High geomagnetic field intensity during the mid-Cretaceous from Thellier analyses of single plagioclase crystals, *Science*, 291, 1779-1783, 2001.

\_\_\_\_\_ see review by S.K. Banerjee, When the Compass Stopped Reversing Its Poles, *Science*, 291, 1714-1715, 2001.

Smirnov, A.V., and J.A. Tarduno, Estimating superparamagnetism in marine sediments with time-dependency of coercivity of remanence, *Journal of Geophysical Research*, 106, 16,135-16,143, 2001.

Tarduno, J.A., and A.V. Smirnov, Stability of the Earth with respect to the spin axis for the last 130 million years, *Earth Planetary Science Letters*, 184, 549-553, 2001.

Cottrell, R.D., and J.A. Tarduno, Late Cretaceous True Polar Wander: Not so fast (Technical Comment), *Science*, 288, 2283, 2000. Online: <http://www.sciencemag.org/cgi/content/full/288/5475/2283a>

Smirnov, A.V., and J.A. Tarduno, Low-temperature magnetic properties of pelagic sediments (ODP Site 805C): Tracers of maghemitization and magnetic mineral reduction, *Journal of Geophysical Research*, 105, 16457-16471, 2000.

Cottrell, R.D., and J.A. Tarduno, In search of high fidelity geomagnetic paleointensities: A comparison of single crystal and whole rock Thellier-Thellier analyses, *Journal of Geophysical Research*, 105, 23579-23594, 2000.

Cottrell, R.D. and J.A. Tarduno, Geomagnetic paleointensity derived from single plagioclase crystals, *Earth and Planetary Science Letters (Express Letter)*, 169, 1-5, 1999.

- Tarduno, J.A., D.B. Brinkman, P.R. Renne, R.D. Cottrell, H. Scher and P. Castillo, Evidence for Extreme Climatic Warmth from Late Cretaceous Arctic Vertebrates, *Science*, 282, 2241-2244, 1998.  
 \_\_\_\_\_ see review by B.T. Huber, *Science's Compass, Perspectives: Paleoclimate, Tropical Paradise at the Cretaceous Poles?*, *Science*, 282, 2199-2200, 1998.
- Tarduno, J.A., W. Tian and S. Wilkison, Biogeochemical remanent magnetization in pelagic sediments of the western equatorial Pacific Ocean, *Geophysical Research Letters*, 25, 3987-3990, 1998.
- Tarduno, J.A., and R.D. Cottrell, Paleomagnetic evidence for motion of the Hawaiian hotspot during formation of the Emperor seamounts, *Earth and Planetary Science Letters*, 153, 171-180, 1997.  
 Online version can be found at: <http://www1.elsevier.nl:80/journals/epsl/jnl/articles/S0012821X97001696/>  
 \_\_\_\_\_ see review by U. Christiansen, *Nature: News and Views, Fixed Hotspots Gone with the Wind*, *Nature*, 391, 739-740, 1998.
- Tarduno, J.A., R.D. Cottrell and S.L. Wilkison, Magnetostratigraphy of the Late Cretaceous to Eocene Sverdrup Basin: Implications for heterochronicity, deformation, and rotations in the Canadian Arctic archipelago, *Journal of Geophysical Research*, 102, 723-746, 1997.
- Tarduno, J.A., and S.L. Wilkison, Non-steady state magnetic mineral reduction, chemical lock-in, and delayed remanence acquisition in pelagic sediments, *Earth and Planetary Science Letters*, 144, 315-326, 1996.
- Tarduno, J.A., and J. Gee, Large-scale motion between Pacific and Atlantic hotspots, *Nature*, 378, 477-480, 1995.
- Tarduno, J.A., and W.W. Sager, Polar standstill of the mid-Cretaceous Pacific plate and its geodynamic implications, *Science*, 269, 956-959, 1995.
- Tarduno, J.A., Superparamagnetism and reduction diagenesis in pelagic sediments: Enhancement or depletion?, *Geophysical Research Letters*, 22, 1337-1340, 1995.
- Nogi, Y., J.A. Tarduno and W.W. Sager, Geomagnetic field variations recorded in ODP drill pipes and their implications for paleomagnetic studies *Proceedings of the Ocean Drilling Program, Scientific Results*, 143, 389-393, 1995.
- Nogi, Y., J.A. Tarduno and W.W. Sager, Inferences on the nature and origin of basalt sequences from the Cretaceous Mid-Pacific Mountains (ODP Sites 865 and 866) as deduced from down-hole magnetometer logs, *Proceedings of the Ocean Drilling Program, Scientific Results*, 143, 381-388, 1995.
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