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• NATURE

An explanation for a universality of transition temperatures in families of copper oxide superconductors 53

SUDIP CHAKRAVARTY, HAE-YOUNG KEE & KLAUS VÖLKER

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Crystal symmetry and the reversibility of martensitic transformations 55

KAUSHIK BHATTACHARYA, SERGIO CONTI, GIOVANNI ZANZOTTO & JOHANNES ZIMMER

doi:10.1038/nature02378

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Polar ocean stratification in a cold climate 59

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• SCIENCE

PLANETARY SCIENCE: Martian Magnetism Getting Hotter

Linda Rowan

Science 5 March 2004; 303(5663): p. 1439a

<http://www.sciencemag.org/cgi/content/summary/303/5663/1439a?ct>

European Seasonal and Annual Temperature Variability, Trends, and Extremes Since 1500

Jurg Luterbacher, Daniel Dietrich, Elena Xoplaki, Martin Grosjean, and Heinz Wanner

Science 5 March 2004; 303(5663): p. 1499-1503

<http://www.sciencemag.org/cgi/content/abstract/303/5663/1499?ct>

Fungal Proliferation at the Cretaceous-Tertiary Boundary

Vivi Vajda and Stephen McLoughlin

Science 5 March 2004; 303(5663): p. 1489

<http://www.sciencemag.org/cgi/content/full/303/5663/1489?ct>

Discovery of Ancient Silicate Stardust in a Meteorite

Ann N. Nguyen and Ernst Zinner

Science 5 March 2004; 303(5663): p. 1496-1499

<http://www.sciencemag.org/cgi/content/abstract/303/5663/1496?ct>

POLAR EXPLORATION: An Otherworldly Place to Hunt for Other Worlds

Gretchen Vogel

Science 5 March 2004; 303(5663): p. 1459

<http://www.sciencemag.org/cgi/content/summary/303/5663/1459?ct>

POLAR EXPLORATION: A Year to Remember at the Ends of the Earth

Richard Stone and Gretchen Vogel

Science 5 March 2004; 303(5663): p. 1458-1461

<http://www.sciencemag.org/cgi/content/summary/303/5663/1458?ct>

Meteoritic Stardust

Science 5 March 2004; 303(5663): p. 1433m
<http://www.sciencemag.org/cgi/content/summary/303/5663/1433m?ct>

J Salas and C Ayora
Groundwater chemistry of the Okelobondo uraninite deposit area (Oklo, Gabon): two-dimensional reactive transport modelling.
J Contam Hydrol 1 Mar 2004 69(1-2): p. 115.
<http://highwire.stanford.edu/cgi/medline/pmid;14972440>

DJ Donaldson, H Tervahattu, AF Tuck, and V Vaida
Organic aerosols and the origin of life: an hypothesis.
Orig Life Evol Biosph 1 Feb 2004 34(1-2): p. 57.
<http://highwire.stanford.edu/cgi/medline/pmid;14979644>

R Berstan, SN Dudd, MS Copley, ED Morgan, A Quye, and RP Evershed
Characterisation of 'bog butter' using a combination of molecular and isotopic techniques.
Analyst 1 Mar 2004 129(3): p. 270.
<http://highwire.stanford.edu/cgi/medline/pmid;14978532>

PHYLOGENY AND HISTORICAL BIOGEOGRAPHY OF LIMPETS OF THE ORDER PATELLOGASTROPODA BASED ON MITOCHONDRIAL DNA SEQUENCES
TOMOYUKI NAKANO and TOMOWO OZAWA
J. Mollus. Stud. 2004 February 1; 70(1): p. 31-41
<http://mollus.oupjournals.org/cgi/content/abstract/70/1/31?ct>

VINUNDU, A NEW GENUS OF GASTROPOD (CERITHIOIDEA: 'THIARIDAE') WITH TWO SPECIES FROM LAKE TANGANYIKA, EAST AFRICA, AND ITS MOLECULAR PHYLOGENETIC RELATIONSHIPS
ELLINOR MICHEL
J. Mollus. Stud. 2004 February 1; 70(1): p. 1-19
<http://mollus.oupjournals.org/cgi/content/abstract/70/1/1?ct>

PATTERNS OF MORPHOLOGICAL VARIATION OF THE DEEP-SEA GASTROPOD TROSCHELIA BERNICIENSIS (KING, 1846) (BUCCINIDAE) FROM THE NORTHEASTERN ATLANTIC OCEAN
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J. Mollus. Stud. 2004 February 1; 70(1): p. 59-66
<http://mollus.oupjournals.org/cgi/content/abstract/70/1/59?ct>

Bapx1 regulates patterning in the middle ear: altered regulatory role in the transition from the proximal jaw during vertebrate evolution
Abigail S. Tucker, Robert P. Watson, Laura A. Lettice, Gen Yamada, and Robert E. Hill
Development 2004 March 15; 131(6): p. 1235-1245
<http://dev.biologists.org/cgi/content/abstract/131/6/1235?ct>

Congruent Mammalian Trees from Mitochondrial and Nuclear Genes Using Bayesian Methods
Aurelio Reyes, Carmela Gissi, Francois Catzeffis, Eviatar Nevo, Graziano Pesole, and Cecilia Saccone
Mol. Biol. Evol. 2004 February 1; 21(2): p. 397-403
<http://mbe.oupjournals.org/cgi/content/abstract/21/2/397?ct>

Diego Cordoba, Charles Fefferman, and Jose Luis Rodrigo
Almost sharp fronts for the surface quasi-geostrophic equation.
Proc Natl Acad Sci U S A 20 Feb 2004.
<http://highwire.stanford.edu/cgi/medline/pmid;14978276>

T Hiraga, IM Anderson, and DL Kohlstedt
Grain boundaries as reservoirs of incompatible elements in the Earth's mantle.
Nature 19 Feb 2004 427(6976): p. 699.
<http://highwire.stanford.edu/cgi/medline/pmid;14973476>

SA Miller, C Collettini, L Chiaraluce, M Cocco, M Barchi, and BJ Kaus
Aftershocks driven by a high-pressure CO₂ source at depth.
Nature 19 Feb 2004 427(6976): p. 724.
<http://highwire.stanford.edu/cgi/medline/pmid;14973482>

PH Figueiredo, R Greeley, S Neuer, L Irwin, and D Schulze-Makuch
Locating potential biosignatures on Europa from surface geology observations.
Astrobiology 1 Dec 2003 3(4): p. 851.
<http://highwire.stanford.edu/cgi/medline/pmid;14987486>

GT Chae, K Kim, ST Yun, KH Kim, SO Kim, BY Choi, HS Kim, and CW Rhee Hydrogeochemistry of alluvial groundwaters in an agricultural area: an implication for groundwater contamination susceptibility.
Chemosphere 1 Apr 2004 55(3): p. 369.
<http://highwire.stanford.edu/cgi/medline/pmid;14987935>

J Maiti, S Chatterjee, and SI Bangdiwala
Determinants of work injuries in mines - an application of structural equation modelling.
Inj Control Saf Promot 1 Mar 2004 11(1): p. 29.
<http://highwire.stanford.edu/cgi/medline/pmid;14977503>

K Townsend and J Eyles
Capacity and transparency of potable water regulation in Tijuana, Mexico: challenges for ensuring water quality at community level.
Health Promot Int 1 Mar 2004 19(1): p. 77.
<http://highwire.stanford.edu/cgi/medline/pmid;14976175>

O Sracek, M Choquette, P Gelinas, R Lefebvre, and RV Nicholson
Geochemical characterization of acid mine drainage from a waste rock pile, Mine Doyon, Quebec, Canada.
J Contam Hydrol 1 Mar 2004 69(1-2): p. 45.
<http://highwire.stanford.edu/cgi/medline/pmid;14972437>

T Hiraga, IM Anderson, and DL Kohlstedt
Grain boundaries as reservoirs of incompatible elements in the Earth's mantle.
Nature 19 Feb 2004 427(6976): p. 699.
<http://highwire.stanford.edu/cgi/medline/pmid;14973476>

NJ Wilson, D Craw, and K Hunter
Antimony distribution and environmental mobility at an historic antimony smelter site, New Zealand.
Environ Pollut 1 Jan 2004 129(2): p. 257.
<http://highwire.stanford.edu/cgi/medline/pmid;14987811>

GR Strembeck, DR Vann, and AH Johnson
In situ experimental freezing produces symptoms of winter injury in red spruce foliage.
Tree Physiol 1 Oct 1991 9(3): p. 359.
<http://highwire.stanford.edu/cgi/medline/pmid;14972847>

O Junntila
Effects of temperature on shoot growth in northern provenances of Pinus sylvestris L.
Tree Physiol 1 Sep 1986 1(2): p. 185.
<http://highwire.stanford.edu/cgi/medline/pmid;14975895>

A Ernstsen and J Hansen
Influence of gibberellic acid and stock plant irradiance on carbohydrate content and rooting in cuttings of Scots pine seedlings
(Pinus sylvestris L.).
Tree Physiol 1 Jun 1986 1(1): p. 115.
<http://highwire.stanford.edu/cgi/medline/pmid;14975914>

M Brasier, O Green, J Lindsay, and A Steele
Earth's oldest (approximately 3.5 Ga) fossils and the 'Early Eden hypothesis': questioning the evidence.
Orig Life Evol Biosph 1 Feb 2004 34(1-2): p. 257.
<http://highwire.stanford.edu/cgi/medline/pmid;14979661>

O Prieto-Ballesteros, N Rodriguez, JS Kargel, CG Kessler, R Amils, and DF Remolar
Tirez lake as a terrestrial analog of europa.
Astrobiology 1 Dec 2003 3(4): p. 863.

<http://highwire.stanford.edu/cgi/medline/pmid:14987487>

Chicxulub impact predates the K-T boundary mass extinction
Gerta Keller, Thierry Adatte, Wolfgang Stinnesbeck, Mario Rebollo-Vieyra, Jaime Urrutia
Fucugauchi, Utz Kramar, and Doris Stuben
Proc. Natl. Acad. Sci. USA published 2 March 2004,
10.1073/pnas.0400396101

<http://www.pnas.org/cgi/content/abstract/0400396101v1?ct>

Evaluation of Xenobiotic N- and S-Oxidation by Variant Flavin-Containing Monooxygenase 1 (FMO1) Enzymes
Bjarte Furnes and Daniel Schlenk
Toxicol. Sci. published 19 February 2004, 10.1093/toxsci/kfh079

<http://toxsci.oupjournals.org/cgi/content/abstract/kfh079v1?ct>

Almost sharp fronts for the surface quasi-geostrophic equation
Diego Cordoba, Charles Fefferman, and Jose Luis Rodrigo
Proc. Natl. Acad. Sci. USA 2004 March 2; 101(9): p. 2687-2691

<http://www.pnas.org/cgi/content/abstract/101/9/2687?ct>

The vortex patch problem for the surface quasi-geostrophic equation
Jose Luis Rodrigo
Proc. Natl. Acad. Sci. USA 2004 March 2; 101(9): p. 2684-2686

<http://www.pnas.org/cgi/content/abstract/101/9/2684?ct>

Integrating the genotype and phenotype in hominid paleontology
Leslea J. Hlusko
Proc. Natl. Acad. Sci. USA 2004 March 2; 101(9): p. 2653-2657

<http://www.pnas.org/cgi/content/abstract/101/9/2653?ct>

• UNIVERSITY TODAY

WATER ONCE DRENCHED REGIONS OF MARS

Mar 2, 2004

NASA announced today that liquid water once soaked the environment around Opportunity's landing site, raising the chances that life once existed on the Red Planet. This announcement came from Opportunity's detailed examination of a region of exposed rock on the side of the crater it landed in. By analyzing the rock with every instrument at its disposal, scientists now have conclusive evidence that liquid water once acted on this rock, changing its texture and chemistry. Opportunity's next job will be to determine if the rocky outcrop was actually formed by water, or if it's volcanic in origin. This means that there was probably a long period of time on Mars where the environment would have supported life

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