Space Weather

AN AGU JOURNAL

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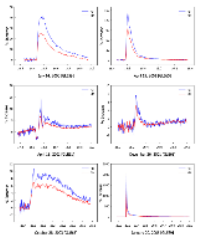

South Pole neutron monitor forecasting of solar proton radiation intensity

Count rates, as in Figure 1, for 6 additional GLEs.

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28 August 2013

Technical Papers

A survey of customers of space weather information

Open Access

DOI: 10.1002/swe.20092

C. J. Schrijver, J. P. Rabanal

Key Points

- We present the results of a survey to space weather users
- We interpret the responses of 2783 subscribers to the SWPC email alert list
- We discuss the value of SWx data for government and private sectors

Current Issue

Volume 11
Issue 9
1 September 2013

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Editors' Highlights

- New physical model calculates airline crews' radiation exposure
- Effects of space weather on satellite components
- Predictive model to protect satellites from space weather
- Characterizing the Moon's radiation environment

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Upcoming AGU Meetings

2013 Fall Meeting
9-13 December 2013
San Francisco, California, USA

Chapman Conference on Magnetosphere-Ionosphere Coupling in the Solar System
9–14 February 2014
Yosemite National Park, California, USA

Ocean Sciences Meeting
23-28 February 2014
Honolulu, Hawaii, USA

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Journals

Chinese Journal of Geophysics
Earth Interactions
Earth's Future Open Access
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Geophysical Research Letters
Global Biogeochemical Cycles
International Journal of Geomagnetism and Aeronomy
Journal of Advances in Modeling Earth Systems (JAMES) Open Access
Nonlinear Processes in Geophysics
Paleoceanography
Radio Science
Reviews of Geophysics
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Tectonics
Water Resources Research

Journal of Geophysical Research
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Biogenosciences
Earth Surface
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Planets
Solid Earth
Space Physics
Journal of Geophysical Research (1949-1977)
Formerly Terrestrial Magnetism and Atmospheric Electricity (1899-1948), Terrestrial Magnetism (1896-1898)

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Atmospheric processes

Biogeosciences
Biogeosciences

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Global change
Paleoceanography

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Electromagnetics
Radio science

Geochemistry, Mineralogy, Volcanology
Geochemistry
Geochronology
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Mineral physics
Mineralogy and petrology
Volcanology

Geology and Geophysics
Exploration geophysics
Geodesy and gravity
Geomagnetism and paleomagnetism
Marine geology and geophysics
Physical properties of rocks
Seismology
Structural geology
Tectonophysics

Hydrology, Cryosphere, and Earth Surface
Cryosphere
Hydrology

Mathematical geophysics
Computational geophysics
Informatics
Mathematical geophysics
Nonlinear geophysics

Ocean Science
Oceanography: biological and chemical
Oceanography: general
Oceanography: physical

Planetary Science
Interplanetary physics
Planetary sciences: astrobiology
Planetary sciences: comets and small bodies
Planetary sciences: fluid planets
Planetary sciences: solar systems objects
Planetary sciences: solid surface planets

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G3 Geochemistry Geophysics Geosystems

Themes

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- Topics in the news (25 themes)
- Conferences (5 themes)
- Metamorphic processes (9 themes)
- Biogeosciences (5 themes)
- Working group (2 themes)

Lithospheric Evolution of Cenozoic UHP Terranes: From Convergence to Extension

Metamorphic processes

Open for submission

Last updated: 2 October 2013

Theme Editors: S. Baldwin, P. Mann, T. Little, G. Abers

Examines the structural, petrologic, rheologic, and thermal evolution of lithosphere during the transition from convergence to rifting in active plate boundaries and exhumed Cenozoic (UHP) terranes.

Development of Isotopic Proxies for Paleoenvironmental Interpretation: A Carbon Perspective (DIPPI-C)

Biogeosciences Working group

Open for submission

Last updated: 29 August 2013

Theme Editors: C. Brodie, J. Casford, M. Leng, E. McClymont

Constraining the carbon (C) cycle is vital to understanding environmental processes at a variety of spatial and temporal scales. A robust quantification and interpretation of these processes requires an integrative interdisciplinary understanding of the complex, nonlinear mechanisms that control the behavior of C isotopes and biomarker distributions in the environment. This special theme forms part of the "Development of Isotopic Proxies for Paleoenvironmental Interpretation: A Carbon Perspective" (DIPPI-C) working group (www.dippi-c.org), which specializes in the synthesis, analysis, and interpretation of organic and inorganic carbon in the natural environment at all spatial and temporal scales. We seek contributions covering (but not limited to) plant physiology and biology; soil processes; ecology; diagenesis and recalcitrance; modern aquatic and sedimentary environments; carbon transport pathways; paleoenvironmental reconstructions; archeology; biogeochemistry; carbon capture and storage; and method development.

Geodynamics of oceanic islands at slow-moving plates

Open for submission

Last updated: 15 July 2013

Theme Editors: R. Urgeles, A. Villasenor, F. Costa, P. Llanes

Geochemical Heterogeneities in Oceanic Island Basalt and Mid-ocean Ridge Basalt Sources: Implications for Melting Processes and Mantle Dynamics

Published: 26 June 2012

Theme Editors: C. Beier, P. Asimow

EarthTime: Advances in Geochronological Technique

Working group

Open for submission

G3 Geochemistry Geophysics Geosystems

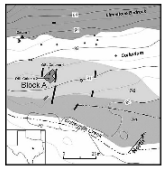
Short description of cover image

Theme

Magnetism From Atomic to Planetary Scales: Physical Principles and Interdisciplinary Applications in Geoscience

First published: 16 December 2004
Last updated: 26 July 2005
Editor: J. Feinberg
Associate Editors: S. McEnroe, B. Moskowitz, H. Oda, M. Purucker, A. Roberts

Magnetic measurements and imaging provide unique and valuable data for a wide range of applications in the geosciences and planetary sciences, notably in tectonics, paleoclimate and paleoenvironmental research, studies of the Earth's deep interior, and exploration of planetary surfaces and interiors. This theme includes modeling and studies of atomic and nanoscale magnetic properties as well as satellite, airplane, ship, and undersea surveys and imaging to illuminate the frontiers of magnetic science. This is a continuation of the theme originally organized by theme editors B. Moskowitz, J. Feinberg, F. Florindo, and A. Roberts from 2008 through 2011.

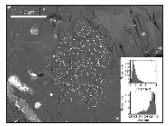


Rock magnetic properties of a soil developed on an alluvial deposit at Buttermilk Creek, Texas, USA

Anna K. Lindquist, Joshua M. Feinberg and Michael R. Waters

First published: 28 December 2011

Key Points
- Alluvial soils produce interpretable magnetic signals
- The soil and artifacts at the Friedkin site are in stratigraphic order

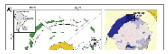


Mineral magnetism of dusty olivine: A credible recorder of pre-accretionary remanence

Lappe, S. L. L. et al.

First published: 17 December 2011

Key Points
- Dusty olivine is a credible carrier of pre-accretionary remanence
- Remanence is carried by both single-domain and single-vortex states
- Remanence blocks immediately below Tc and remains stable for 4.6 Ga at any T



Rock magnetism of hematitic "bombs" from the Araguainha impact structure, Brazil

AGU PUBLICATIONS

Earth's Future

EDITORIAL

10.1002/2013EF000221

Citation:
Brasseur, G. P., and B. van der Pluijm (2013), Earth's Future: Navigating the science of the Anthropocene, *Earth's Future*, doi:10.1002/2013EF000221.

Earth's Future: Navigating the science of the Anthropocene

Guy P. Brasseur[1] and Ben van der Pluijm[2]

[1]Founding Editor-in-Chief; Climate Service Center, Helmholtz-Zentrum Geestacht, Hamburg, Germany, [2]Editor-in-Chief; Department of Earth & Environmental Sciences, University of Michigan, Ann Arbor, Michigan, USA

Summary Understanding and managing our new and future relation with the Earth requires research and knowledge spanning diverse fields. *Earth's Future* will explore and foster interactions among the Earth and environmental sciences, ecology, economics, the health and social sciences, and more. Its mission is to focus on the Earth as an interactive, evolving system to help researchers, policy makers, and the public navigate the science.

During the last decades, decision makers in public service and private sectors have increasingly realized that the major challenges facing human society in the 21st century will be related to the evolution of the Earth system. Among the global challenges are the limitation of available natural resources, the rapid population growth and its concentration in large urban areas, climate change with its impacts on the environment and society, the human and economic impacts of hazards such as earthquakes and extreme weather, air and water quality, sea-level rise, reduction in biodiversity, and so on. International organizations, national, regional, and local governments, and private corporations will have to address these issues and, specifically, find appropriate approaches, such as fundamentally modify our energy supply system; preserve the biosphere from anticipated degradations; adapt to unavoidable effects of climate change and geohazards; provide sufficient and healthy food as well as clean water; improve access to education, medical, and welfare services; and ultimately improve the level of human well-being and development of the world's population. All such decisions will have to be based on scientific knowledge and understanding of the governing processes. It is, therefore, the responsibility of the scientific community to develop programs that will help society address these key challenges in the decades ahead.

Many of the questions posed by stakeholders require interdisciplinary approaches. They will not be left to individual scientists nor even to scientific teams, but will often require a close dialogue with various players in society and the co-production of knowledge involving different partners. Disciplinary science will remain extremely important to build the pillars of the "science temple," but at the same time, there will be a need to develop more holistic approaches that will integrate knowledge from individual disciplines and produce the roof of this temple.

About 2 years ago, the American Geophysical Union (AGU) constituted a task force to assess new journal concepts for the Union. The task force noted that the scientific landscape has been evolving toward more integrated, transdisciplinary science and toward more societally relevant research that is geared toward solutions to coupled human and planetary challenges. The task force noted that AGU has produced many successful journals in the past decades that cover a large spectrum of geophysical disciplines, but that there is a recognized need to better link these disciplines with, when appropriate, economic and social processes. We are pleased to introduce the first issue of *Earth's Future*, the new AGU journal that aims to address these issues and should become a primary tool for lively dialogue between a large multidisciplinary research community and stakeholders representing a broad spectrum of societal sectors.

Earth's Future deals with the state of the planet and its expected evolution. It publishes papers that emphasize the Earth as an interactive system under the influence of the human enterprise. It provides science-based knowledge on risks and opportunities related to environmental changes. *Earth's Future* is a transdisciplinary, open-access journal that is published electronically. The journal will