

# NEWS

## Promoting Space Weather Studies in Eastern Europe and Western Asia

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A regional network and an international refereed scientific journal have been established to promote space weather studies in southeastern and east central Europe and in the Caucasus region. The main impetus behind establishing the Balkan, Black Sea, and Caspian Sea Regional Network on Space Weather Studies is to strengthen activities in the region in the field of space science—especially space weather-related studies—under the umbrella of the International Heliophysical Year (IHY).

The network promotes bilateral and multilateral joint projects and collaborations among network countries; the training of young scientists from network countries at participating institutions; and the organizing of annual regional summer/winter schools and colloquia on solar-terrestrial physics and network meetings in different network countries. In addition, the network promotes activities to popularize the knowledge of solar-terrestrial physics through network member-written popular scientific articles published on the network's Web site and in other network country publications. The

network also promotes school competitions for proposals for joint/collaborative astrophysical observations. It also promotes "astronomy olympiads," a competition to test young people on their knowledge of astronomy that remains popular in former Soviet block countries.

An initiative begun by scientists from Azerbaijan and Bulgaria, the network was established during the IHY Balkan and Black Sea regional planning meeting in Sozopol, Bulgaria, on 6–8 June 2005, and it was supported by representatives of 11 countries (Armenia, Azerbaijan, Bulgaria, Croatia, Georgia, Greece, Poland, Romania, Russia, Serbia and Montenegro, and Ukraine) attending the meeting. Although scientists from the Czech Republic, Slovakia, and Turkey could not attend, they expressed their intent to be included in the planned activities. Bosnia and Herzegovina later joined the network, which is also open to participation by other countries. Representatives from France and the European Office of Aerospace Research and Development participated in the meeting.

The second annual network meeting, held in Manavgat, Antalya, Turkey, on

30 March to 1 April 2006, followed the 29 March 2006 total solar eclipse and combined observational activities with a scientific meeting. Future annual meetings will be held during the 2–6 June 2008 United Nations Workshop on the International Heliophysical Year 2007 in Sozopol, and during a proposed spring 2009 International Astronomical Union symposium in Azerbaijan.

The *Sun and Geosphere* journal, also established during the 2005 meeting in Bulgaria, promotes space weather activities in eastern Europe and western Asia. The journal—published at least twice yearly on paper, CD-ROM, and online—is peer reviewed by international referees and has published papers by scientists from many countries. The editorial board consists of members from eastern European and western Asian countries as well as from other European and Asian countries and the United States, and each issue of the journal is managed by a guest editor. Coauthor Elchin S. Babayev, of the Shamakhy Astrophysical Observatory, Baku, Azerbaijan, is editor in chief.

For more information about the network, visit the Web site <http://www.stil.bas.bg/IHY>. For information about the journal, visit the Web site <http://www.shao.az/SG>.

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# MEETINGS

## Ocean Acidification's Effects on Marine Ecosystems and Biogeochemistry

***Ocean Carbon and Biogeochemistry Scoping Workshop on Ocean Acidification Research; La Jolla, California, 9–11 October 2007***

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Rising atmospheric carbon dioxide (CO<sub>2</sub>) concentration is causing global warming and ocean acidification. Nearly one third of the total anthropogenic CO<sub>2</sub> produced in the past 200 years has been taken up by the oceans. While oceanic uptake of anthropogenic CO<sub>2</sub> may lessen the extent of global warming, evidence suggests that effects of anthropogenic CO<sub>2</sub> on ocean chemistry have profound consequences for marine organisms, potentially altering ecosystem structure, food webs, and biogeochemical processes.

An assemblage of 93 scientists participated in a 3-day workshop to develop research strategies that address present and future ocean acidification impacts.

The Ocean Carbon and Biogeochemistry program (<http://www.us-ocb.org>) sponsored this workshop, with support from the U.S. National Science Foundation, National Oceanic and Atmospheric Administration, NASA, U.S. Geological Survey, and Scripps Institution of Oceanography.

Earlier reports on the impacts of ocean acidification emphasize knowledge gaps at the ecosystem level. Thus, this workshop focused on developing research strategies for four critical ecosystems: warm-water coral reefs, coastal margins, subtropical/tropical pelagic regions, and high-latitude regions.

Plenary talks reported a wide spectrum of ocean acidification impacts on calcification, carbonate dissolution, nitrogen fixation, community structure, and fisheries.

Talks described innovative approaches involving functional genomics, in situ instrumentation, remote sensing, mesocosms, and models for advancing understanding of ocean acidification effects.

Parallel discussion sessions focused on four critical ecosystems. Members of each discussion devised a 10-year research strategy involving field observations and perturbation experiments to investigate the impacts of ocean acidification on key ecosystem processes and organisms. Subsequent plenary discussions identified common approaches as well as ecosystem-specific differences. Discussions highlighted the need to integrate modeling into the design, execution, and interpretation of experiments, as well as recognizing the possibility for interactive effects (e.g., impacts due to interactions between increasing CO<sub>2</sub> and effects of climate-induced changes in temperature and nutrients).

Workshop participants agreed it was essential to develop standardized measurement protocols and data-reporting guidelines. For example, standardized methods for controlling the seawater inorganic carbon system in manipulative experiments and measuring essential parameters such as rates of calcification, dissolution, and respiration will allow comparisons across taxa and over space and time. Furthermore,

attendees noted an urgent need to quantify the distributions and abundances of calcareous plankton in regions projected to undergo substantial changes in carbonate chemistry over the next decades and emphasized the vital importance of developing autonomous systems for measurement of an additional parameter of the seawater CO<sub>2</sub> system, such as dissolved inorganic carbon or total alkalinity.

Participants strongly endorsed establishment of a U.S. national program on ocean acidification that would coordinate research activities among federal agencies. They also

stressed the need for early international cooperation to develop a coordinated, global network of ocean observations and studies that could leverage existing infrastructure and programs, while noting the need for additional sites for monitoring and process studies aimed explicitly at ocean acidification.

Plenary talks and the workshop report are available at <http://www.whoi.edu/sites/OceanAcidificationMeeting>.

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## ABOUT AGU

### Outstanding Student Paper Awards

The following members received Outstanding Student Paper Awards at the 2007 AGU Fall Meeting, in San Francisco, Calif. Awards for other sections and focus groups will be announced in subsequent issues of Eos.

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#### Global Environmental Change (GEC)

**Paul Spence**, University of Victoria, Victoria, British Columbia, Canada, *The Southern Ocean response to poleward intensifying winds: A model resolution sensitivity study.*

**Daniel Joswiak**, University of Idaho, Moscow, *A 100 yr ice core record of anthropogenic activity, volcanic eruptions, and biomass burning from the Siberian Altai.*

#### Earth and Space Science Informatics (IN)

**Jihua Wang**, University of Illinois at Urbana-Champaign, Urbana, *Solving large-scale spatial optimization problems in water resources management through spatial evolutionary algorithms.*

**Geoffrey Ely**, Institute of Geophysics and Planetary Physics, University of California, San Diego, La Jolla, *Verification of SORD, and application to the TeraShake scenario.*

**Christian Arnhardt**, Rheinisch-Westfälische Technische Hochschule Aachen University, Aachen, Germany, *Usage of wireless sensor*

*networks in a service based spatial data infrastructure for landslide monitoring and early warning.*

#### Ocean Sciences (OS)

**Cynthia Chen**, Dartmouth College, Hanover, N. H., *Anthropogenic osmium in precipitation.*

**Carroll D. Lopez**, University of Victoria, Victoria, British Columbia, Canada, *Frontal ridge slope failure at the northern Cascadia Margin: Fault control and possible relation with gas hydrate dissociation.*

**Katherine L. Maier**, Stanford University, Stanford, Calif., *The southernmost branch of the Lucia Canyon System offshore central California: New insights from high-resolution AUV bathymetry and chirp sub-bottom profiles.*

**Katherine R. Mackey**, Stanford University, Stanford, Calif., *Organic nutrient enrichment in the oligotrophic ocean: Impacts on remineralization, carbon sequestration, and community structure.*

**Nahysa Martinez**, Boston University, Boston, Mass., *Modern climate forcing of terrigenous deposition in the Tropics (Cariaco Basin, Venezuela).*

**Enrique Montes-Herrera**, University of South Florida, St. Petersburg, *Coupling of sinking biogenic particulate fluxes and primary production*

*in the euphotic zone of the Cariaco Basin, Venezuela.*

**Masako Tominaga**, Department of Oceanography, Texas A&M University, College Station, *Determination of volcanostratigraphy of ODP/IODP hole 1256D: Qualitative and quantitative core-log integration.*

**Digna Rueda-Roa**, University of South Florida, St. Petersburg, *Characterization of a secondary upwelling in the southeastern Caribbean.*

#### Planetary Sciences (P)

**Erwan Mazarico**, Massachusetts Institute of Technology, Cambridge, *Martian atmospheric density near 250km altitude from MRO radio tracking data.*

**Margarita Marinova**, California Institute of Technology, Pasadena, *Planetary scale impacts and consequences for the Mars hemispheric dichotomy.*

**Paul Byrne**, Trinity College, Dublin, Ireland, *Flank terraces of Martian shield volcanoes: Architecture and formation.*

#### Study of the Earth's Deep Interior (SEDI)

**Nicholas Schmerr**, Arizona State University, Tempe, *Upper mantle discontinuity topography from thermal and chemical heterogeneity.*

**Lijun Liu**, California Institute of Technology, Pasadena, *Joint inversion of mantle viscosity and thermal structure: Applications of the adjoint of mantle convection with observational constraints.*

**Christy Till**, Massachusetts Institute of Technology, Cambridge, *Extending the Wet Mantle Solidus: Implications for H<sub>2</sub>O transport and subduction zone melting processes.*