In Brief

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NASA’s Mars lander completes mission

After 5 months of providing scientist with a better understanding of Mars, and 2 months beyond the planned operational life, instruments on NASA’s Phoenix Mars Lander are no longer receiving sufficient energy to operate due to an autumnal decline in sunlight reaching the lander’s solar arrays, the agency announced on 10 November. The lander’s last signal was received on 2 November, and scientists will be listening for any additional signals should the lander revive.

Since touching down on Mars on 25 May 2008, lander instruments verified the presence of water ice in the Martian subsurface. The lander has taken more than 25,000 pictures, among other accomplishments. Transmitted data have helped scientists learn more about the planet’s arctic environment and whether it has ever been favorable for microbes. “Phoenix has given us some surprises, and I’m confident we will be pulling more gems from this trove of data for years to come,” said Phoenix principal investigator Peter Smith of the University of Arizona, in Tucson, which leads the mission. For more information, visit http://www.nasa.gov/phoenix or http://phoenix.lpl.arizona.edu.

Earth TV The British Broadcasting Corporation (BBC) is seeking participation from primary investigators working on science projects in geology, geomorphology, climate, and history for a new series, “How Earth Made Us.” According to the BBC, the aim of this follow-up to the 2007 program “Earth: Power of the Planet” is to reveal the influence of planetary forces (geology, climate, and geomorphology) in shaping human history over the past 10,000 years. The BBC anticipates producing a series focusing on cutting-edge science and dramatic locations that have been rarely filmed.

Program producers are looking for exciting science projects under way in remote or visually stunning parts of the world; major projects or expeditions of a geological/historical nature that will take place over the next 12 months; and/or information on locations that have been rarely documented. For more information and to potentially participate in the program, contact BBC series associate producer Alex Hemingway by telephone at +44-020-8008-2513 or by e-mail at alex.hemingway@bbc.co.uk.

-RANDY SHOWSTACK, Staff Writer

GEOPHYSICISTS

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In Memoriam

Mark E. Boris, 37, 30 October 2008, Near-Surface Geophysics, 1999
Patrick M. Hayes, 52, Atmospheric Sciences, 2005
Vance M. Lynch, 80, 4 July 2008, Seismology, 1961

Honors

G. Jeffrey Taylor, planetary scientist at the Hawaii Institute of Geophysics and Planetology in the School of Ocean and Earth Science and Technology at the University of Hawaii at Manoa, is the 2008 recipient of the Carl Sagan Medal for Excellence in Public Communication in Planetary Science. The medal is awarded by the Division for Planetary Sciences of the American Astronomical Society to recognize and honor outstanding contributions by active planetary scientists to the public’s understanding of, and enthusiasm for, planetary science.

Stuart Ross Taylor, emeritus professor and visiting fellow at the Australian National University, has been appointed an Honorary Companion of the Order of Australia, the highest civilian award in Australia. The citation states that Taylor was honored “for outstanding service to science, particularly in the fields of geochemistry and cosmochemistry as a researcher, writer and educator… Over the past 40 years Professor Taylor has been considered to be one of the world’s pre-eminent geochemists, pioneering several analytical methods, and a dominant force in the field of trace element and lunar geochemistry.” Among Taylor’s accomplishments, the citation notes that he carried out the first analysis of the Moon rock samples brought back by Apollo 11 in 1969 and remained a principal investigator for NASA for the next 20 years.

MEETINGS

Progress in Understanding Earth’s Radiation Belts

Radiation Belts Saint Petersburg; Saint Petersburg, Russia, 4–6 August 2008

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Fifty years after their discovery, Earth’s radiation belts are an enduring major challenge, owing to the complex, interdependent phenomena controlling these particles, and motivated by the enormous role of space technology in our society. The recent Radiation Belts Saint Petersburg (RBSPb) workshop explored how to meet this challenge.

Considerable discussion focused on learning more from observations, especially by revisiting existing spacecraft data sets with new analysis techniques or updated paradigms. New techniques were reported, such as extraction of energetic electron data from signal contamination in proton detectors and conversion of auroral proton images into global wave proxies. New insight concerning global aspects of the system (e.g., plasmaspheric wave-particle interactions) enables less ambiguous interpretation of local measurements.

Meeting participants agreed that maximizing science yield from the data we have will help develop the skills needed for future missions such as NASA’s Radiation Belt Storm Probes (RBSP) and Balloon Array for Radiation-Belt Relativistic Electron Losses (BARREL). Canada’s Outer Radiation Belt Injection, Transport, Acceleration, and Loss Satellite (ORBITALS), Russia’s Resonance, and Japan’s Energization and Radiation in Geospace (ERG). Workshop participants were hopeful that these multiple overlapping missions will initiate an era of data-driven radiation belt research.

All of the global models presented at RBSPb predict that energization and loss of radiation belt electrons result from resonant interactions with various plasma waves whose frequencies range from millihertz to kilohertz. Thus, the radiation belts are
Ocean Carbon Cycling and Climate Impacts on Marine Ecosystems

Third Annual Ocean Carbon and Biogeochemistry Summer Science Workshop 2008; Woods Hole, Massachusetts, 21–24 July 2008

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The Ocean Carbon and Biogeochemistry (OCB) program is a coordinating body for the U.S. research community that focuses on the ocean’s role as a component of the global Earth system, bringing together research in geochemistry, ocean physics, and ecology to advance our understanding of ocean biogeochemistry. The third annual OCB summer science workshop, sponsored by the U.S. National Science Foundation, took place at Woods Hole Oceanographic Institution, convening 147 participants.

Daily plenary and poster sessions focused on three interdisciplinary themes: (1) climate sensitivity of ecosystem structure and associated impacts on biogeochemical cycles, (2) carbon uptake and storage, and (3) temporal trends in ecosystem variability.

Using observations and models, speakers from theme 1 addressed impacts of climate variability, climate change, and ocean acidification on marine calcifiers, pelagic food-web dynamics, benthic fauna, fluxes to the deep ocean, and oxygen minimum zone extent and evolution. Presentations from theme 2 summarized recent ocean carbon flux trends and key controlling processes in critical regions such as the Southern Ocean, the northern oceans, and the Gulf of Mexico. One speaker described a new tracer-based back-calculation method for reconstructing anthropogenic carbon uptake in the world’s oceans.

Presentations in theme 3 focused on how satellite- and ocean-based time series, paleoclimate records, and regional programs such as Global Ocean Ecosystem Dynamics (GLOBEC) advance our understanding of marine biogeochemical cycling and feedbacks between climate and marine ecosystems and provide critical data to improve complex ecosystem models. Breakout sessions provided a forum for discussing field-based, remote sensing, and modeling strategies to address knowledge gaps. Two common threads emerged repeatedly throughout the workshop: (1) the importance of the Southern Ocean in the global carbon cycle and (2) the need to expand observational capabilities for the OCB community by leveraging underway ship systems, autonomous platforms, and the Ocean Observatories Initiative (OOI). Specific observational challenges include improved quantification of planktonic functional group distributions, lateral transport, benthic-pelagic coupling, and air-sea CO2 fluxes and food-web changes.

Additional highlights included a planning session for OCB coordination of a coastal synthesis as part of the North American Carbon Program’s interim synthesis activities, a presentation of exciting new results on the spring 2008 plankton bloom as part of the North Atlantic Bloom Experiment, and a plenary discussion of OCB’s leadership role in defining future carbon cycle research directions, and plenary discussions following up on two recent OCB scoping workshops (one on ocean acidification and one on terrestrial and coastal carbon fluxes and exchanges in the Gulf of Mexico).

For further information (meeting agenda, list of participants, talks, live webcasts, etc.), please visit http://www.whoi.edu/sites/ocbworkshop2008.

—HEATHER M. BENWAY and SCOTT DONEY, Department of Marine Chemistry and Geochecmistry, Woods Hole Oceanographic Institution, Woods Hole, Mass.; Email: hbenway@whoi.edu