

December 2012 News Notes

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Saltzman's group explores end-Permian extinction and Early Triassic recovery

A team of international scientists, led by SES graduate student Alexa Sedlacek and Professor Matthew Saltzman, have examined strontium and carbon isotopes in marine carbonate rocks from northwest Iran that span the end-Permian extinction and Early Triassic recovery. The data reveals that Siberian Traps volcanism warmed the Earth to a point that terrestrial ecosystems were devastated and weathering rates of continental crust increased. Marine animal life, stressed by high temperatures, and smothered in sediment, did not recover for millions of years while microbial life thrived. At the end of the recovery period in the Early Triassic, a fundamental shift in marine ecology had occurred such that the role of the Paleozoic fauna (e.g., brachiopods, crinoids, bryozoans) was forever diminished. SES Emeritus Professor Ken Foland and Jeff Linder contributed to this study, along with scientists from Austria and the University of Cincinnati.

See the article at OSU Research News: <http://researchnews.osu.edu/archive/lifewarm.htm>. Saltzman & Sedlacek's work was recently covered by the Columbus Dispatch: <http://www.dispatch.com/content/stories/science/2012/12/09/5-million-year-hangover.html>

While no photos are available of the rocks from Iran used in these analyses, below at left is a picture of Alexa Sedlacek in the field working on time equivalent Permian-Triassic boundary sediments in Nevada, and also (at right) a photo of the boundary sequence.

Panero's Group Suggests Solar Systems More Habitable than Ours

Professor Wendy Panero and doctoral student Cayman Unterborn suggest that there may be solar systems which are more conducive and hospitable to life than our own. Their findings are based on research that involved studying data from eight different stars that were “solar twins” of our Sun. Their work was presented at the recent American Geophysical Union Fall Meeting in San Francisco.

See the article at OSU Research News: <http://researchnews.osu.edu/archive/hotplanet.htm>

From the OSU Research News article:

[Panero and Unterborn] studied eight “solar twins” of our sun—stars that very closely match the sun in size, age, and overall composition—in order to measure the amounts of radioactive elements they contain. Those stars came from a dataset recorded by the High Accuracy Radial Velocity Planet Searcher spectrometer at the European Southern Observatory in Chile.

Of the eight solar twins they’ve studied so far, seven appear to contain much more thorium than our sun—which suggests that any planets orbiting those stars probably contain more thorium, too. That, in turn, means that the interior of the planets are probably warmer than ours.

“If it turns out that these planets are warmer than we previously thought, then we can effectively increase the size of the habitable zone around these stars by pushing the habitable zone farther from the host star, and consider more of those planets hospitable to microbial life,” said Unterborn, who presented the results at the American Geophysical Union meeting in San Francisco this week.

Undergrad Edwin Buchwalter wins scholarship

Edwin Buchwalter (SES undergrad working with Prof Ann Cook) won \$4000 from the Arts and Sciences Honors Committee for his undergraduate research proposal. Edwin is a senior and is working with Prof Cook to look for artifacts of gas hydrate occurrence in marine sediments from the Gulf of Mexico.

Brevia

Professor Anne Carey has just been elected to a three-year term on the Board of Directors of CUAHSI, the Consortium of Universities for the Advancement of Hydrologic Science, Inc. Ohio State is a charter member of CUAHSI, which was founded in 2001, after a series of NSF-sponsored workshops. CUAHSI is a 501(c)3 research organization representing more than 130 U.S. universities and international water science-related organizations. CUAHSI receives support from the National Science Foundation to develop infrastructure and services for the advancement of water science in the United States.