

In Brief

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Climate Change Technology Program

Plan The U.S. Department of Energy released its Plan for Climate Change Technology Programs (CCTP) at a 20 September hearing of the U.S. House of Representatives Science Subcommittee on energy. The goal of the hearing, which was chaired by Rep. Judy Biggert (R-Ill.), was to examine the Bush Administration's CCTP plan, review it in light of the Administration's stated goals, and determine what action might be undertaken to implement the plan. For details of the plan, see <http://www.climatechange.gov/stratplan/final/index.htm>

—EUGENE BIERLY, AGU Senior Scientist

Investigation of EPA library closures requested

Three Democratic ranking members of the U.S. House of Representatives Sci-

ence Committee have asked the U.S. Government Accountability Office to investigate the Bush Administration's plan to cut funding for the U.S. Environmental Protection Agency's (EPA) system of libraries by more than 30% in Fiscal Year 2007. The EPA already has closed one regional library and identified two others that will be closed on 1 October. The agency has said that the plan will save money without reducing access to environmental information. The congressmen expressed concern that the closures could harm EPA's ability to enforce environmental laws and could deprive the public of access to environmental information.

The letter is available at http://science.dem.house.gov/Media/File/ForReleases/gordon_epa-libraries_09sep06.pdf

—SARAH ZIELINSKI, Staff Writer

Dwarf planet named The dwarf planet 2003 UB313, which had been nicknamed 'Xena,' has been given the formal name of

Eris, the International Astronomical Union announced on 13 September. Eris, which was discovered in January 2005, was named for the Greek goddess of discord. Its moon has been named Dysnomia, for the daughter of Eris, the demon goddess of lawlessness. Eris was assigned dwarf planet status in an IAU resolution approved in August (see *Eos* 87(35), 2006) along with Pluto and Ceres. Pluto's demotion prompted the Minor Planet Center, which operates under the auspices of the IAU, to assign Pluto an asteroid number, 134340, on 7 September.

—SARAH ZIELINSKI, Staff Writer

FORUM

Walking on Water' and the Geoscientists' Fear of Social Controversy

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Communications with editors of 13 specialized scientific journals concerning the possible publication of a seemingly controversial manuscript, which was recently published, are analyzed. On the basis of this analysis, many geoscience editors (as well as many geoscientists) may be reluctant to publish articles with social controversies extending beyond the natural sciences, particularly when these issues involve religion. This hinders the progress of the geosciences rather than advances it, as it creates a detrimental and artificial separation between the geosciences and society at large.

Walking on Ice

McKeague, Paldor, and I addressed the question of whether there is a natural explanation for 'walking on water' in the Sea of Galilee in an article published in the April issue of the *Journal of Paleolimnology (JOPL)*, a journal that focuses on the reconstruction of lakes history (and hence is an ideal medium for this particular paper). We suggested in the paper (*JOPL*, 35, 417–439, 2006) that the legend of Jesus walking on water might be rooted in unusual freezing events that took place over relatively small parts of the Sea of Galilee. Such events probably happened during several cold episodes (lasting hundreds of years) that occurred during the past 2500 years. Because of salty and warm springs that

emptied into the lake, a localized 'convection free' freeze just above the plume created by the springs (covering an area of about 1000 square meters) probably occurred as a result of short cold spells lasting two to three days. These brief cold spells were superimposed on the much longer cold episodes that occur every 500–1000 years.

Just as astronomers calculate the likelihood that a meteor will hit the Earth, we calculated the likelihood that ice thick enough to support human weight can form directly above the plumes generated by the springs. We found that during cold episodes, such a localized freeze may occur every 100–200 years, giving a total likelihood of roughly once in a thousand years. Any person standing or walking on such an isolated frozen part of the lake would appear to a distant observer to be walking on water, particularly if it rained after the ice was formed. Because people were not used to seeing ice on the lake, this might have been interpreted as a 'miracle.'

Anticipating Obstacles

Although our article did not advocate or reject religious beliefs (and this is clearly stated in both the abstract and the text), and although the scientific analysis is rigorous so that the circumstances we attempt to explain represent a 'fair game,' getting the manuscript through the conventional editorial process was not as simple and straightforward as it

may have been. Our experience teaches us much about how we relate our science to society at large and warrants this discussion. Before describing the events that transpired and our interpretation of editors' reactions, it is appropriate to state that none of the article's authors is a believer, and I view myself as a hard-core atheist (though some of my colleagues would argue that I am agnostic). Two of the authors (myself and Paldor) have an Israeli-Jewish background, and the third (McKeague) was raised a Christian.

In 1992, Paldor and I published a paper offering a plausible scientific explanation for the origin of the biblical story describing the parting of the Red Sea. We sensed at the time that editors might be reluctant to publish a manuscript that could generate controversy outside the scientific community, so we initially sent only the abstract to a few editors, to see whether they would even be interested in considering the manuscript for publication. We approached editors of three journals that publish geophysical research. One editor displayed strong displeasure with both the topic of the manuscript and also with the very idea that we were writing such a manuscript. By contrast, the other two were positive and willing to consider it. The paper appeared in *Bulletin of the American Meteorological Society* (73, 305–314, 1992) a relatively short time after it was submitted.

We chose to follow a similar process with the recently published paper not knowing that our experience would be very different this time. Recognizing the recent worldwide shift to conservatism (symbolized by, among other things, discussions of 'intelligent design') and recognizing that most Christians would be more sensitive to a discussion of any issue that has to do with Jesus, in comparison with Moses, we expected more resistance than we had with the Red Sea paper. We sent the abstract to 13 editors, and their responses

surprised us. Because editors represent a section of the active scientific community at large, we propose that their responses adequately represent the entire scientific community and merit discussion.

Editors' Responses

Of the 13 editors, four were very positive and were willing to process the paper in the usual way. (One of them was Bill Last, who, together with John Smol, act as coeditors of the *Journal of Paleolimnology*.) On the other side of the spectrum, one editor of a publication with an extremely broad oceanographic scope merely said no without giving a reason. (My impression is that editors should give a reason for their unwillingness to consider a paper for publication, but this editor must think otherwise.)

In between the two extremes, there were four editors who said they were willing to consider the manuscript only if all (or most) of the implications to Jesus were removed. Although an editorial request to limit the religious implications is certainly understandable, I argue that stripping the paper of any religious implications is analogous to removing the motivation from our more conventional papers. This would have stripped the present paper of its principle scientific goal: to explain the 'miracle' in terms of natural processes. Another two editors said the manuscript did not fit the scope of their journal. Although I believe that in some sense they were correct, a manuscript (such as ours) that relates two seemingly unrelated fields will never fit into any existing scopes of conventional journals. Another editor indicated, on the basis of the abstract, that the paper 'will not be reviewed well' and on that basis was reluctant to consider it. Another did not wish to send it out to review because, in his or her words, the manuscript did not address

an 'important climatic problem.' Overall, more than half of the editors would not even consider the manuscript because of the social and religious implications.

There probably are very good reasons for the above responses. However, given some of these editors' requirements that we remove most or all religious implications prior to submission, my own interpretation is that many of them were simply reluctant to deal with issues that might be controversial in the eyes of their readers, and perhaps society at large. I find this puzzling and counterproductive to the interests of the scientific community. One would hope that the more light we shed on whatever the rest of society thinks and does, the more appreciated science will become. Restricting our efforts merely to research that advances the understanding of our particular scientific discipline does not speak well for how we fit into society as a whole.

Unfortunately, this attitude feeds the prevailing view that scientists are typically confined to their own ivory towers dealing only with those issues that they deem relevant. As natural scientists, our job should be to explain nature, not only as far as it advances the natural sciences, but also as far as it advances philosophy, religion, and other branches of the social sciences. I am certainly not the first to argue that the natural sciences are too far removed from the humanities and religion (see, e.g., *The Hedgehog, the Fox, and the Magister's Pox: Mending the Gap Between Science and the Humanities*, by Stephen Jay Gould, Harmony Books, 2003, 274 pp.). I am merely pointing out what I perceive to be a disturbing symptom. My view is that as long as our science is valid, we should be able to relate our research to any branch of the humanities, be it art, anthropology, philosophy, or religion. Also, it would be helpful if editors felt free to occasionally expand their journal's original scope.

Public Response

The editors' fears were not without basis. Since the original submission of this note and the publication of the 'Walking on Water' article, I received several thousand E-mails from the general public, primarily from extremists. Most were hate mail from those who think that science and religion should be kept separate and that no scientific attempts should be made to explain miracles. The editors of the *Journal of Paleolimnology* received similar E-mails and so did almost every administrator at Florida State University, including its president. Some E-mails stated that professors should not be allowed to do this kind of work. I also received indirect death threats. My responses to those E-mails is addressed in a frequently asked questions (FAQ) document that can be found at <http://www.doronof.net/walking-on-ice.php>

Acknowledgments

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Corrections

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In the 25 July issue (*Eos* 87(30) 2006), in the article titled "Outstanding Student Paper

Awards: 2006 Joint Assembly," an outstanding student paper award was presented to Joanne Muller by the Paleoclimatology and Paleoclimatology Focus Group, not the Near Surface Geophysics Focus Group.

Maynard Miller was incorrectly included in the 18 July Geophysicists column (*Eos* 87(29) 2006). *Eos* regrets these errors.