

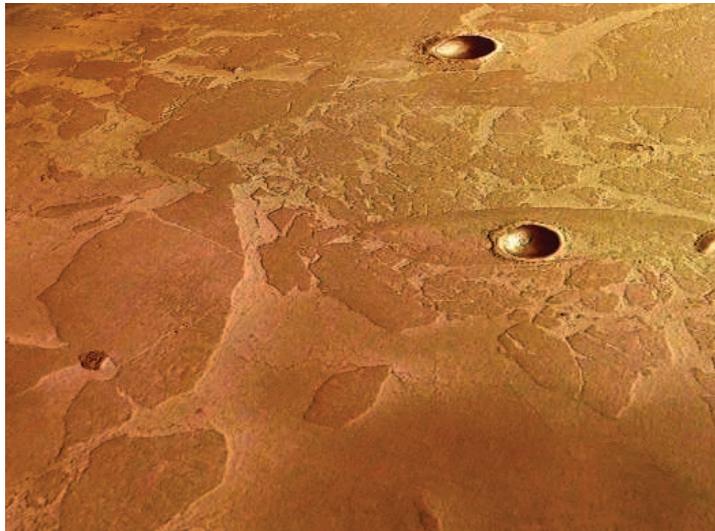
Ice or Lava Sea on Mars? A Transatlantic Debate Erupts

The déjà vu was palpable when U.S. planetary scientists heard the news last week that a frozen sea the size of the North Sea had been found on Mars. “We went through all this 7 years ago when [Mars Global Surveyor] first imaged these terrains,” says planetary geologist Alfred McEwen of the University of Arizona, Tucson. “Our immediate reaction then was, ‘Gosh, that looks like frozen ice.’ But we quickly realized it had to be lava.”

“It can’t be lava,” says volcanologist John Murray of the Open University in Milton Keynes, U.K. He and his teammates running the High Resolution Stereo Camera (HRSC) onboard the European Space Agency’s Mars Express orbiter reported at the First Mars Express Science Conference last week that the “lava” is actually an ice floe-covered sea frozen in place. That would make the Elysium Plains a fetching place to land and look for microfossils of martian life, Murray notes.

Everyone agrees that both water and lava have gushed from the ground in the vicinity of Elysium (*Science*, 30 November 2001, p. 1820). McEwen and others had traced lava

and water flows back to the great ground cracks of the 1000-kilometer-long Cerberus Fossae. Apparently, rising magma intersected subterranean water and drove it through the cracks to the surface, carrying



Sea ice or lava sea? No doubt parts of Mars look like a frozen sea off Antarctica, but looks can be deceiving, say many U.S. planetary scientists.

with it any debris of life past or present. Murray and his colleagues now see signs that about 5 million years ago such a gusher did not just seep into the ground but pooled to a depth of 45 meters over an area about 850 kilometers across. Once its surface froze,

they say, the waters moved again, breaking the ice into floes now locked into a frozen sea that has become buried under a protective layer of volcanic ash and sediment.

In a paper to be published 17 March in *Nature*, Murray and his colleagues will detail the ice signs they see in the images, which are among the first European data returned from another planetary body. A pivotal claim is that the level of the putative sea has dropped since its surface froze. Mapping elevations using HRSC stereo imaging as well as laser altimetry from Mars Global Surveyor, they find that flood material inside as well as outside some craters has sunk about 15 meters below the crater rim. Floodwaters could have seeped or sublimated away, says Murray, but lava could not. In addition, “the edge [of the flow] ties in well with a sea rather than lava,” says Murray. Where HRSC has looked, he sees a beach swept by turbulent flows, a high-water mark, and the final sunken level with pack ice at the bottom.

American Mars geologists, who have dominated the field by dint of returning almost all the previous data from Mars, aren’t persuaded. “I think it’s unlikely they’re right,” says Michael Carr, planetary geologist ▶

CONFLICTS OF INTEREST

NIH Scientists Raise Fuss About Scope of New Rules

Scientists at the National Institutes of Health (NIH) are rallying to challenge strict new ethics rules that many feel go much too far. A group of intramural leaders met with NIH Director Elias Zerhouni last week to air their concerns. Meanwhile, NIH officials say they have cleared many of those on a list of scientists who apparently had failed to report ties to drug companies.

The new ethics rules, imposed last month, came in response to revelations in the press and in Congress that some NIH scientists have had lucrative consulting deals that weren’t always publicly disclosed or even reported to NIH. In addition to barring all consulting for industry and nonprofit health-related organizations, the regulations prohibit senior staff members and their families from owning stock in drug and biotech companies. Everyone else can own no more than \$15,000 in holdings from any one company (*Science*, 11 February, p. 824).

The rules have outraged NIH scientists. Among their worries are their own stock portfolios and how the rules might affect the recruitment of fellows, who spend only a few years at NIH. Last week, a newly elected, 18-member executive committee of the Assembly of Scientists—a revival of a defunct body—shared their views with Zerhouni. He “clearly understand how difficult some of these issues are,” says committee member Cynthia Dunbar of the National Heart, Lung, and Blood Institute. NIH officials were sympathetic to recommendations to craft exemptions for fellows and to extend the 150-day deadline for divesting stock, she says. But Zerhouni advised them to send their concerns to the Department of Health and Human Services, which developed the rule along with the Office of Government Ethics.

Dunbar says the Assembly of Scientists is now working on a set of proposals more

in line with the recommendations of a blue-ribbon panel last year that urged Zerhouni to ban consulting by senior leaders but allow limited consulting by others (*Science*, 14 May 2004, p. 936). Other scientists are weighing a legal challenge to the stock ban, says Abner Notkins of the National Institute of Dental and Craniofacial Research.

Meanwhile, NIH clarified a press report regarding the status of about 100 scientists accused by a congressional committee of not telling NIH about their consulting activities. The committee compiled its list from information supplied by drug companies. As many as 80% of those on the list have been exonerated, according to a 23 February story in *The Washington Post*. But NIH Deputy Director Raynard Kington says only about half have been cleared, and investigations of the rest are still under way.

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