Briefings

edited by RICHARD STONE

Failure Interrupts Venus Mapping

It wasn't the first snag in the highly productive mission, but it could be the most damaging. After 15 months of beaming detailed radar images of 95% of the cloud-shrouded Venusian surface, the Magellan spacecraft's main transmitter suddenly has fallen silent.

The transmitter failed on 4 January as Magellan was nearing completion of a second 8-month circuit aimed at mapping almost the entire planet. No amount of tweaking could get radar data from the transmitter even though it continued to broadcast its carrier signal, so NASA controllers switched to a backup transmitter. But the backup has its own problems—as it warms up, its signal weakens and it starts to "whistle." Engineers plan to sidestep this problem by keeping the whistle and the broadcast frequency from overlapping. Still, they say they're concerned about the backup's reliability.

NASA

On the fritz. *Tempermental transmitters are threatening the Magellan mission.*

The transmitter problems threaten to jeopardize a third circuit of the planet scheduled to begin 15 January, during which Magellan is supposed to map 60% of the surface in stereo. Such stereo-mapping and the resulting high-resolution topographic maps would "greatly enhance the value of the Magellan data set," according to project scientist Stephen Saunders of the Jet Propulsion Laboratory.

But Saunders and his colleagues aren't without hope: Even if the backup transmitter were to fail, the fourth circuit around Venus will be devoted to measuring the subtle variations in Venus' gravitational pull caused by the deep-seated churnings of the planet's interior. Such information is crucial to understanding Venus' unknown alternative to plate tectonics. For this part of the mission, all that would be required is a Doppler-shifted carrier signal, something even the speechless main transmitter seems willing to provide.

Could Creationism Be Evolving?

Classical creationists fight to get evolution out of the classroom—at least that's what many scientists think. Now comes a species that is seeking to keep it in!

In an effort to dispel the notion that good Christians and evolution don't mix, a group of evangelical scientists last month passed a resolution that calls on teachers to define evolution in a "scientific manner" and promote a "candid discussion of unsolved problems and open questions."

"We want to help teachers sort out the religious issues from the science," says Walter R. Hearn, a retired biochemist and newsletter editor for the American Scientific Affiliation. Hearn believes that there are enough unanswered questions about the birth of humankind to allow a supernatural creation and evolution to coexist. And he says: "I think there are a lot of people using science to promote a secular or atheistic view."

Promoters of evolution education aren't buying the argument, however. They bristle at the suggestion that teachers are trying to force-feed students with a "religious" form of evolution—called evolutionary naturalism by the creationists. "In my experience, that's just not happening," says Eugenie Scott, director of the Berkeley-based National Center for Science Education. To Scott, the far more worrisome problem is that "there's an awful lot of teachers who don't teach evolution because they don't want to take the flak for it."

Raking the Gulf War's Muck

WIDE WORLD

Cruel crude. *Surveying the environmental disaster, a Saudi policeman dangles a dead cormorant on oil-soaked Manifah Bay.*

One year after Iraqi forces dumped an estimated 6 million to 8 million barrels of oil into the Persian Gulf, a UN-sponsored team is embarking on the most comprehensive effort yet to assess the resulting environmental damage.

While about 5 million barrels of oil in the Persian Gulf either evaporated or were cleaned up soon after their release, "the spill has gone virtually untouched since then," said Sylvia A. Earle, chief scientist of the National Oceanic and Atmospheric Administration (NOAA), at a press conference. The vast spill of oil into marine and coastal ecosystems is serving as "a terrible experiment," Earle said. "Since it's there, there's an opportunity for us to learn."

More than 100 scientists from 10 countries are expected to arrive in Muscat, Oman, on 15 February aboard the *Mt. Mitchell*, a research ship owned by NOAA. The researchers—who include oceanographers, ecologists, chemists, and environmental scientists—will study the health of seagrass beds, coral reefs, and shrimp, damage to turtle and sea bird nesting sites, and the effectiveness of using bacteria to degrade oil.

Building a Better Beta Cell

Genetic engineers have overcome a major hurdle in their efforts to treat insulin-dependent diabetes mellitus (IDDM). And in the process they may have come closer to an improved means of testing for susceptibility to the disease. The wellspring of hope: an artificial beta cell.

In healthy people, beta cells in the pancreas secrete insulin, a hormone that regulates blood glucose levels. But in the roughly 1 million people in the United States with IDDM, beta cells are destroyed by the body's own immune system. Insulin injections used to treat IDDM often fail to prevent complications of

the disease such as atherosclerosis, gangrene, and blindness.

Two promising strategies have emerged for reducing the threat of complications: transplanting human pancreatic tissue into diabetics and creating artificial beta cells, says Christopher B. Newgard, a biochemist at the University of Texas Southwestern Medical Center. Now Newgard's team has announced progress in the beta route.

Working with a line of pituitary cells that University of California at San Francisco researchers engineered to secrete insulin, but which failed to respond to glucose, Newgard and his colleagues inserted the gene that codes for GLUT-2, a glucose transport protein. The second generation of engineered cells are sensitive to "sub-physiological" levels of glucose, Newgard says, and he published his findings in the 15 January *Proceedings of the National Academy of Sciences*.

One knowledgeable observer, University of Chicago biochemist Graeme Bell, who in 1979 helped clone the human insulin gene, calls the work "potentially very exciting." Newgard too is remaining cautious. "We're not claiming the cell that will save diabetics is here today," says Newgard. He recognizes that two major problems need to be solved before the cells might become therapeutically useful: increasing the cells' responsiveness to glucose and coating the cells with a polymer that protects them from being destroyed by the body's immune system.

Cold Confusion

Cold fusion codiscoverer Martin Fleischmann, who has been trying to breathe new life into his subject with claims of fresh supporting data (*Science*, 13 December 1991, p. 1582), came up with a bit of revisionist history when he gave a speech at MIT shortly after Christmas.

When a skeptical questioner, MIT fusion researcher Ian Hutchinson, asked Fleischmann why he did not seek a chemical explanation for the cold fusion reaction, he responded that, in fact, "I didn't call it fusion." Fleischmann went on: "The paper [published in the *Journal of Electroanalytical Chemistry*] was supposed to have a question mark. The mark was deleted and we never saw the galley proofs. We never made such an assertion."

MacArthur Fellows Director Resigns

The John D. and Catherine T. MacArthur Foundation Fellows Program, renowned for its gen-

MACARTHUR FOUNDATION

Ken Hope

erous "genius awards," will lose its longtime director when 44-year-old Ken Hope departs this summer. During Hope's 11-year tenure, the MacArthur Fellows Program has awarded 350 5-year, no-strings-attached awards ranging from $160,000 to $385,000 to scientists, artists, and public servants.

In a letter to MacArthur award recipients, Hope does not reveal his specific reason for resigning, but writes, "There is little I can do now to improve [the program]." Some sources, though, are hinting that the resignation wasn't entirely Hope's decision.

"It seems the right time to go," Hope told *Science*. He says he plans to write a book on "what makes the most fertile minds tick." Meanwhile, the program has begun its search for a new director, says spokesman Woodward A. Wickham, adding: "The fellows program will continue essentially as it has in the past."

UC to Standardize DOE Contracts

Every 5 years for most of the last half-century, the University of California (UC) and the Department of Energy (DOE) have danced a complicated waltz in order to renegotiate the contract under which the university runs the Lawrence Berkeley, Lawrence Livermore, and Los Alamos national laboratories. Ordinarily, the university leads the dance, since it can threaten to bolt if DOE attempts to impose too many onerous conditions.

This year, though, the negotiations come in the wake of a recent report* by the General Accounting Office (GAO) that recounts problems GAO auditors identified at Livermore, and blames them on "nonstandard" clauses in the existing management contracts. Now the university appears ready to accept a contract that will give DOE more say in how the university runs the three facilities.

GAO's complaints included the charge that Livermore managers were granting contracts without competitive bids and keeping a large, expensive car and truck fleet that DOE had not approved. Because the contracts for Los Alamos and Lawrence Berkeley are nearly identical to the Livermore contract, the report states, "the potential for abuse also exists at these laboratories."

University of California officials disagree that a standardized contract would have prevented the problems listed by GAO, but say they are moving toward accepting several of the recommended standard clauses anyway. Why the change? "There's quite a different mood in Congress and DOE regarding contractor accountability," says Tommy Ambrose, a member of the university's negotiating team. Accepting some standard clauses "would make life easier for both sides."

*"DOE Has an Opportunity to Improve Its University of California Contracts," GAO/RCED-92-75, December 1991.

The World's Most Prolific Scientists

Name, field, nation	No. of papers, 1981-90	Days Between Papers
1. Yury T. Struchkov, chemistry, USSR	948	3.9
2. Stephen R. Bloom, gastroenterology, UK	773	4.7
3. Mikhail G. Voronkov, chemistry, USSR	711	5.1
4. Aleksandr M. Prokhorov, physics, USSR	589	6.2
5. Ferdinand Bohlmann, chemistry, Germany	572	6.4
6. Thomas E. Starzl, surgery, USA	503	7.3
7. Frank A. Cotton, chemistry, USA	451	8.1
8. Julia M. Polak, histochemistry, UK	436	8.4
9. Robert C. Gallo, cell biology, USA	428	8.5
10. Genrikh A. Tolstikov, chemistry, USSR	427	8.6
11. John C. Huffman, crystallography, USA	403	9.1
12. Alan R. Katritzky, chemistry, USA	403	9.1
13. David J. Greenblatt, pharmacology, USA	383	9.5
14. John S. Najarian, surgery, USA	345	10.6
15. Willy Jean Malaisse, endocrinology, Belgium	344	10.6
16. Charles D. Marsden, neurology, UK	339	10.8
17. Anthony S. Fauci, immunology, USA	338	10.8
18. E. Donnall Thomas, oncology, USA	328	11.1
19. Noboru Yanaihara, biochemistry, Japan	322	11.3
20. Timothy J. Peters, biochemistry, UK	322	11.3

Source: *Science Watch*, Institute for Scientific Information

According to Science Watch, *a publication produced by the Institute for Scientific Information (ISI), these 20 scientists are the most prolific of the past decade. Of the 20, nine are American, four are (formerly) Soviet, four are British, one is German, one is Belgian, and one is Japanese. These figures are based upon a study of the papers of each scientist listed in ISI's article databases.*