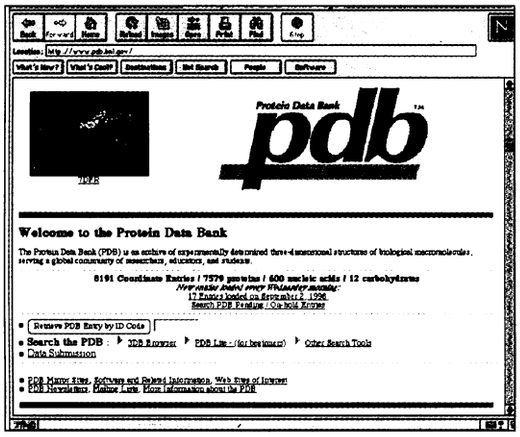
proved the efficiency and user-friendliness of the system, after a rocky period about 5 years ago. He and others who use PDB are asking: Why tinker with a system that seems to be working well?

The move shouldn't have come as a complete surprise, however. NSF announced in 1994 that it would put the PDB contract up for renewal in 1998. It chose this year's winner after a confidential peer review and a series of site visits that began last spring. The winning team is an experienced three-member coalition headed by Rutgers structural biologist Helen Berman. It includes Philip Bourne of the University of California, San Diego, and Gary Gilliland of the National Institute of Standards and Technology in Gaithersburg, Maryland. Berman says she cannot comment until a contract is awarded. But she notes that the coalition has already created a database that integrates PDB files and other structural data in a single format; her group demonstrated it at the Protein Society meeting last July. This new team, which is expected to take over from PDB on 1 November 1999, is proposing to implement the new system rapidly.



New structure. The contract for managing the PDB will be moved from Brookhaven to Rutgers University.

Nevertheless, when news about the decision leaked last week to Long Island's daily paper, *Newsday*, NSF officials and members of the peer panel were bombarded with calls and e-mails. One bioinformatics group, for example, posted an exchange between a French researcher who questioned the decision and Mary Clutter, NSF's assistant director for biological sciences. Without identifying the winner, Clutter wrote that "the decision was based on plans for the future and not on current or past performance."

Crystallographers read this to mean that Brookhaven was doing an excellent job, but that Rutgers promised more exciting new software. They worry that the review panel may have been wowed by promises of new technology, at the risk of losing reliability. Although Brookhaven is also planning to install a new database next year, its top priorities, says biology chair William Studier, were to improve efficiency and make PDB more accessible.

"We are concerned about the potential damage in terms of stability" during a transition to a new manager, says Axel Brunger, a structural biologist at Yale University. He says a dozen Yale colleagues—including Paul Sigler, Thomas Steitz, Donald Engelman, and Donald Crothers—signed a letter asking NSF for more information and possibly a second review. He is upset that the six-member review panel appears to have included only two crystallographers. But Brunger concedes that he hasn't seen the winning proposal, which may be excellent.

In a phone interview with *Science*, Clutter declined to elaborate on her comments. But she acknowledged that "I've been getting e-mails from all over the world ... asking if we're out of our minds." She believes that researchers will be pleased with NSF's decision when NSF releases the details, which she hopes to do "in a few weeks." The transition, she promises, "will be seamless" to the research community.

Like NSF staffers, members of the review panel, chaired by bioinformatics researcher Sylvia Spengler of the Lawrence Berkeley National Laboratory in Berkeley, California, declined comment. But one panelist, speaking on condition of anonymity, said the review involved a "very difficult choice between two very competent groups of structural biologists." He continued: "At the end of the day you have to choose," and in this case, NSF appears to have opted for the more adventurous course. **–ELIOT MARSHALL**

SOLAR PHYSICS

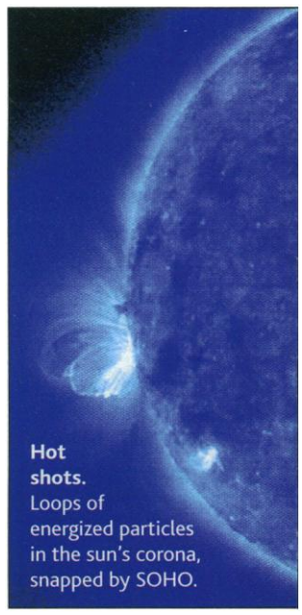
So Far, So Good For SOHO

Engineers who have been gingerly trying to bring the Solar and Heliospheric Observatory (SOHO) back from suspended animation have so far detected no permanent damage to the $1 billion spacecraft. The long process of thawing out the frozen satellite, which spun out of control and lost power after a series of ground-control errors in June, will take several more weeks. But officials from NASA and the European Space Agency (ESA) are now hopeful that they can bring the spacecraft back to life. That optimistic assessment was provided at a press briefing last week by NASA and ESA officials, who also released a final report confirming that errors by an overworked control team caused the spacecraft's problems.

Controllers reestablished contact with SOHO last month and directed the spacecraft to begin recharging its batteries (*Science*, 14 August, p. 891). That allowed them to turn on electric heaters to thaw the hydrazine propellant, which froze when the spacecraft's solar panels were turned away from the sun. The main tank is now thawed, and they are warming the pipes that connect the hydrazine tank to the thrusters outside. It is a delicate operation that may take up to 2 more weeks, since a quicker thaw could burst the pipes. But "so far the recovery [has been] fairly smooth," says Berhard Fleck, ESA deputy project scientist for SOHO at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

Fleck says the telemetry, power, and control systems appear to be undamaged. Once the thawing is completed, controllers will test the mechanism that adjusts the craft's position and attempt to stop the spacecraft's slow spin. "Finally," says Fleck, "we will point the spacecraft with thrusters back to the sun."

The final report on what caused the mishap contained few surprises. A panel of NASA and ESA scientists confirmed that the spacecraft spun out of control during routine maintenance procedures largely because of two software errors in preprogrammed command sequences and the decision by ground controllers to turn off one of the craft's gyroscopes, which detect roll, because they thought it was faulty (*Science*, 24 July, p. 499). "What should have been done instead was really to stop the operation and go into detail in the telemetry to identify exactly what caused the loss of the configuration of the spacecraft," says ESA Inspector-General Massimo Trella. The controllers were, however, under pressure to find a quick solution: "Any downtime for the scientific mission was considered to be a very heavy penalization," Trella says.



NASA

Hot shots. Loops of energized particles in the sun's corona, snapped by SOHO.

The report also pointed to several underlying factors that contributed to the accident. The computer display of telemetry data was not user-friendly, a situation recognized in 1994 but still not remedied. And when the

SOHO mission was extended from 2000 to 2003, NASA agreed to the extra time, "provided that there is some streamlining of the operations so that costs can be lowered," says Trella. This led to certain procedures being rewritten, with some simplifications. "By modifying certain procedures, which were correct for the last 2 years, they introduced some errors," says Trella.

–ALEXANDER HELLEMANS

Alexander Hellemans is a science writer in Naples, Italy.

SCIENTIFIC COMMUNITY

Five Researchers Die In Plane Crash

Jonathan Mann, former director of the World Health Organization's (WHO's) Global Program on AIDS (GPA), and his wife, Mary Lou Clements-Mann of Johns Hopkins University in Baltimore, were killed last week in the crash of a Swissair jet on its way to Geneva from New York. Mann was a charismatic and outspoken epidemiologist who earned high marks for his dedication to the fight against AIDS, even from those who did not always agree with his sometimes scathing criticisms of public health leaders. Clements-Mann, a virologist, was an expert on AIDS vaccine development.

Also killed in the crash were two physicists from Brookhaven National Laboratory on Long Island, New York: Klaus Kinder-Geiger, a German citizen who specialized in the quark-gluon plasma—the state of matter that existed moments after the big bang—and Per Spanne, a Swedish citizen who had helped pioneer techniques for medical x-ray imaging and cancer therapy. Spanne, a guest researcher at Brookhaven, was head of the medical x-ray facility at the European Synchrotron Radiation Facility in Grenoble, France. A fifth scientist on board, Roger Williams, was en route to chair a WHO meeting on early identification of heart disease. He was a cardiovascular geneticist at the University of Utah, Salt Lake City.

Mann and Clements-Mann were traveling to attend a meeting in Geneva on AIDS vaccines convened by UNAIDS, the United Nations' special program on AIDS, which replaced the GPA in 1994. In a press statement, UNAIDS Executive Director Peter Piot praised Mann as "a visionary global leader in the fight against AIDS" who "tirelessly promoted a response to the epidemic based on respect for human rights and human dignity." Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland—an institute of the National Institutes of Health (NIH) which coordinates federally funded AIDS vaccine trials—said the deaths of Mann and Clements-Mann are "a double great loss to the HIV/AIDS effort." Mann was the dean of Allegheny University School of Public Health in Philadelphia.

Appointed GPA's first director in 1986, Mann quit 4 years later, publicly accusing then–WHO chief Hiroshi Nakajima of a lack of commitment to fighting the disease. Earlier this year, he drew fire from many of his colleagues after accusing NIH of dragging its feet on AIDS vaccine research. "He said things that rattled some people," says Fauci. "But he did it to push a cause he believed in. He was the conscience of the field."

AP/COURTESY OF JOHNS HOPKINS UNIVERSITY

"Double great loss." AIDS researchers Mary Lou Clements-Mann and Jonathan Mann.

–MICHAEL BALTER

JAPAN BUDGET

Bad Economy Is Good News for R&D

TOKYO—Japan's recession is once again proving to be a boon to science. Last week government R&D ministries put in their bids for a slice of a $71 billion pie that the government has promised to distribute over the next 18 months to revive a stagnant economy. At the same time, along with their regular 1999 budget requests, they submitted proposals that include tapping into a one-time $1.1 billion appropriation to boost the nation's research and development infrastructure. However, the requests offer no relief for existing scientific facilities that have been forced to reduce operating expenses to shrink a large budget deficit (*Science*, 1 May, p. 669).

The latest developments reflect the impact of an 8-year economic slump. While ministries have been told to cut spending, politicians have looked for ways to stimulate the economy and reward constituents. The result has been a succession of sizable supplemental spending packages that provide a vehicle for funding projects rejected in the annual budget cycle. This summer, in an effort to create jobs, the Diet also created the R&D infrastructure fund that, although targeted at information technology, environmental facilities, and other science projects, seems open to all comers.

The Science and Technology Agency (STA), for example, is asking for a $2 billion slice of the government-wide supplemental pie in addition to a 5.3% increase, to $5.6 billion, in its regular budget. Big winners include brain, information science, and genetics research programs already under way, as well as a planned research vessel for ocean drilling. The Ministry of Education, Science, Sports, and Culture (Monbusho) has requested a jump of 22%, to $1 billion, in funding for its competitive Grants-in-Aid for Scientific Research program that supports small teams at universities and national labs.

The proposed budgets are likely to be trimmed in negotiations with the Ministry of Finance before they are finalized by the end of the year. And the details of the supplemental spending bill won't be resolved until next month. Still, the country's overall R&D spending seems certain to rise sharply from its current level of $25.7 billion.

In particular, STA is asking for $41 million to begin construction of a $500 million ship capable of drilling up to 3500 meters into the sea floor. "It's the project's official 'go' from the STA," says Takeo Tanaka, ocean drilling program officer for the Japan Marine Science and Technology Center, which is overseeing the project slated for completion in 2003. A 59% boost, to $197 million, in information science includes adding a genome informatics component to a new Genetics Frontier Research Center at the Institute of Physical and Chemical Research (RIKEN) in suburban Tokyo and simulating how the brain processes information as part of RIKEN's Brain Science Institute.

Although scientists welcome the increased funding, some worry that these special programs and supplemental budgets are distorting Japan's scientific portfolio by emphasizing applied fields over basic science and hardware over actual research. Akiyoshi Wada, a biophysicist at the Science Council of Japan, the nation's most prestigious scientific association, says government officials tend to focus on high-profile new buildings and equipment while providing too little for intangible operating expenses. "[Government] officials don't understand how real science is carried out," he says.

–DENNIS NORMILE