They concluded that the SES signaled a magnitude 5.5 quake that would strike something like 70 kilometers away sometime in the coming few weeks. The Athens quake came 5 days later, 140 kilometers away, with a magnitude of 5.9. "It is very impressive to see the signals and expect an event," says Claire Hadjicontis. "I think it's very promising."

The VAN group never made this prediction public, according to Varotsos, because of an understanding with the Greek government that they would only announce predictions of imminent quakes of magnitude 6.0 or larger. But Varotsos soon thought he had another prediction, which did fit the bill. The signal of 1 to 2 September, he had noticed, changed polarity before disappearing, something that had happened before when a single station had picked up merged SESs from two impending quakes. Then, on the 13th, the Lamia station picked up another SES of the same polarity as the end of the earlier signal—seemingly a continuation of the first.

"This strengthened our interpretation that the last part of the signal should correspond to future activity," Varotsos told *Science* on the 14th. On the 16th, VAN group member Kostas Eftaxias went public on national TV with both their "postdiction" of the 7 September quake and suggestions of another impending temblor somewhere around Lamia, this time with a magnitude of about 6.0.

Chouliaras is not impressed. "It is ridiculous to continue this debate," he says. In recent published papers, he says, he and colleagues have shown that the SES-like signals they recorded independently at the VAN station in western Greece are radio and phone transmissions, not crustal signals. Resvanis also remains to be convinced. "If they did predict [the 7 September quake], it would be random coincidence," he says. Adds Geller: "His 'predictions' are on the same level as those of the oracle at Delphi." To be taken seriously, he says, the group needs to change its ways. "Varotsos is simply not carrying out scientific research as it is understood by scientists. ... None of the necessary conditions—free availability of continuous raw data, publication of the prediction algorithm—are satisfied."

Even those who have offered some support in the past are being cautious. Stephen Park of the University of California, Riverside, says he "would back off and take a little more conservative view than in '95," when his analysis suggested VAN was doing better than chance at predicting quakes. With a longer VAN record to work from, Park now finds that any claims of real success "could be questioned by statisticians."

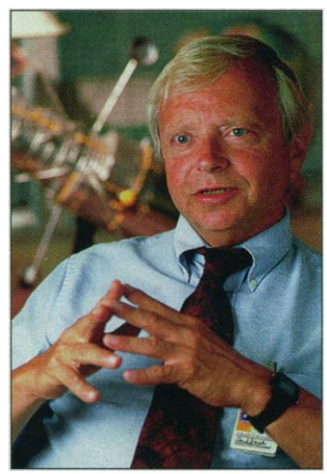
Varotsos has answers to all these criticisms. For example, he acknowledges that he and his colleagues "record a lot of noise, but we apply certain criteria and immediately classify noises versus signal," and he can point to a published algorithm. But he gets the feeling that his critics are actually sending a broader message: "The problem [of earthquake prediction] is very difficult, and therefore no one should try." Varotsos insists he must, although he now faces both the mysteries of earthquakes and the deep skepticism of his colleagues. **–RICHARD A. KERR**

NASA

Space Science Feels Budget Ax in Senate

Sighs of relief resounded everywhere at NASA last week, with Hurricane Floyd blowing past the Kennedy Space Center without damaging the shuttered shuttles, and a Senate panel granting the agency its full $13.6 billion request for 2000. Everywhere except Ed Weiler's office, that is. "This is bizarro-land," the space science chief complained after hearing that his division was the only one at NASA to get clobbered. "What have we done to deserve this?"

What distressed Weiler was the Senate Appropriations Committee's bottom line for NASA space science: $2.08 billion in 2000, $43 million less than this year's budget and a hefty $120 million shy of his request. The cut was especially painful because the committee granted NASA and the National Science Foundation (NSF) the overall amounts the White House asked for—thanks to a critical decision by Senate Republican leaders to break strict budget caps. NSF scored a 7.9% boost for research, putting it just over the $3 billion level, an outcome a relieved NSF chief Rita Colwell calls "wonderful."



Singled out. NASA's Weiler is frustrated over looming space science cuts.

CREDIT: BILL INGALLS/NASA

The proposed budgets are in stark contrast to the House plan to stick with the spending caps and chop funding for NASA and NSF (*Science,* 17 September, p. 1827). The full Senate is expected to vote this week, and the two chambers will meet in coming weeks to hammer out a final plan that will go to President Bill Clinton for approval. A White House official told *Science* that the Administration will fight to restore space science funding.

Although the Senate panel bit half as deeply into the space science budget as did the House, which had slashed $240 million from NASA's request, Weiler warns that even the more modest cut could cripple programs ranging from the Hubble Space Telescope to comet and planetary missions. "The irony is that this is the heyday of space science," he says. "We had eight successes out of 10 launches this year," including the Chandra x-ray telescope, which began sending back images this month.

But Senate members take a dimmer view of NASA's record. Appropriations Committee documents refer to "mixed successes and some outright failures," including the loss in space of the Wide Field Infrared Explorer mission in March and the unexpected need for an expensive mission to repair the Hubble's gyros. The panel also notes that NASA may be shortchanging data analysis—research and analysis account for one in four space science dollars—and asks the White House and NASA to consider developing a data warehouse. Weiler does not quibble with the need for better dissemination and analysis of the flood of data streaming back from probes circling Mars and Jupiter and from observatories like Hubble and Chandra, although other NASA officials note that much of the data is available on the Internet. But he warns that the proposed Senate cuts would mean less money for everything, including analysis.

The Senate panel finds more to praise in projects that will benefit particular states. For example, Senate Majority Leader Trent Lott's (R–MS) desire for more spending on space transportation—specifically, engine testing at Stennis Space Center in his home state—took precedence over space science, according to NASA officials. The Senate plan includes $100 million above the $1.1 billion requested for aerospace technologies. The bill also includes a host of pork projects having nothing to do with space, ranging from $1 million for a museum on "the underground adventure" of soil ecosystems to $14 million for a life sciences upgrade at the University of Missouri, Columbia. That's the home state of Senator Kit Bond (R–MO), who chairs the panel that appropriates NASA funding. The pork projects—some of which would have to be paid for out of Weiler's budget—put even more pressure on space science funding.

With space science likely destined for a big cut, finger-pointing has begun in earnest. Weiler worries that most scientists don't understand the extent of the threat and adds that congressional staffers have told him that only a handful of researchers have complained

about the proposed cuts. But Kevin Marvel, who heads public policy for the American Astronomical Society, says the problem is the larger politics of budget caps and the jockeying for funds inside NASA. "Blaming the community for a battle being lost internally is the wrong road," he says.

–ANDREW LAWLER

With reporting by Jeffrey Mervis.

BIOMEDICAL RESEARCH

AIDS Researchers Blast NIH Peer Review Plan

A scheme to overhaul peer review at the National Institutes of Health (NIH) is drawing intense fire from the AIDS community. Complaints from patient activists and scientists have been piling up for the past 2 weeks at NIH's Center for Scientific Review (CSR), which is considering recommendations from a panel headed by Bruce Alberts, president of the National Academy of Sciences, to reshuffle the groups that rank grant applications (*Science*, 30 July, p. 666).

The Alberts committee suggested grouping peer review panels under broad areas of science rather than specific disease categories or research methods, as many are grouped now. For example, the panel proposed doing away with the category "AIDS and AIDS related research" and moving the seven study sections grouped under this heading into new, more general science categories (such as immunology). The scheme allows reviewers to be moved readily from one panel to another within each grouping. But one critic, Mario Stevenson, a virologist at the University of Massachusetts, Worcester, says: "The logic [of the new proposal] isn't apparent to me. ... I think reviews in the AIDS area are working very well."

Stevenson is part of a group of scientists who endorsed a protest letter circulated by AIDS researcher Ron Desrosiers of Harvard University's New England Primate Research Center in Southborough, Massachusetts. They argue that eliminating the AIDS-specific category would dilute expertise and lower the quality of peer review. In addition, Charles Carpenter of Brown University, chair of the council that advises the NIH Office of AIDS Research, has sent CSR a letter on behalf of council members warning that the proposed reform could "cause irreparable harm" by exposing grant proposals "to review by investigators lacking the appropriate knowledge of AIDS research." Neal Nathanson, director of NIH's Office of AIDS Research, has also expressed his concerns about the plan in an informal e-mail to Elvera Ehrenfeld, director of CSR. Nathanson was unavailable for comment.

Ehrenfeld says she was surprised by the angry response from the AIDS community. She thinks AIDS researchers may be confused by "an unfortunate misunderstanding" that existing study sections would disappear. The AIDS panels would simply be placed in new groupings, she says. For example, the panel reviewing AIDS-related behavior research might be grouped with behavioral research, and other AIDS study sections might be grouped with virology or immunology. Furthermore, none of this is set in stone. Some of the criticism "may be valid," Ehrenfeld says, "and that's why we asked for comments." Alberts also wants to dispel concern: "Clearly we need to explore with the AIDS researchers exactly what it is that bothers them and why. After this detailed discussion, the committee will decide, based on science, how to modify our report."

Comments are due by 15 October. In early November, a CSR advisory council will discuss the next step.

–ELIOT MARSHALL

UNIVERSITY OF ILLINOIS

Chancellor Quits After Research Shutdown

Already reeling from a federal suspension of its clinical research, the University of Illinois, Chicago (UIC), got another jolt this month: the sudden resignation of its chancellor, David Broski, on 9 September. Broski appears to be the third—and highest ranking—school official to fall in the course of a simmering 2-year conflict involving the university's Institutional Review Boards (IRBs), which review research proposals that involve human subjects.

On 27 August, the National Institutes of Health's Office for Protection from Research Risks (OPRR), a watchdog agency that monitors compliance with federal rules on human subjects research, suspended about 1000 NIH-funded projects at UIC. This is the latest in a wave of OPRR crackdowns across the country, including one last fall at Rush-Presbyterian-St. Luke's Medical Center in Chicago. The office acted after determining that some UIC research had been conducted without IRB review, and in some instances it found that investigators had failed to obtain informed consent. Senior officials, OPRR said, "knew, or should have known, about these deficiencies."

> Technical support was "markedly insufficient"... it "undermined the mission of the IRB."
>
> —OPRR

According to Stanley Schade, professor of hematology and oncology and former chair of the biomedical IRB, the problems began about 2 years ago when a woman complained that her confidentiality had been violated after she was given brain scans while going through an induced episode of a dissociative disorder. When it was discovered that this study had never been submitted to the IRB, the university set up a task force to determine how to tighten up procedures. Despite these efforts, sources say, there was continuing friction between the IRB and its support staff, and university officials anxious to keep the stream of grants coming in. For example, Lynda Brodsky, the former staff chief, says one department would get preliminary NIH approval for a study and then "pressure the IRB to rubber-stamp it." Brodsky says she was removed from her job in July 1998. Then last January, 10 of the 12 members of the biomedical IRB resigned to protest, among other things, Brodsky's departure and staff shortages.

In March, after receiving a whistleblower's complaint, OPRR started investigating the university's human subjects research procedures. Three months later the vice chancellor for research, Mi Ja Kim, resigned. But if the move was meant to appease OPRR, it was either too little or too late: In addition to suspending UIC's human subjects research, the office said that staffing and technical support for the university's three IRBs was "markedly insufficient" to the point that it "undermined the mission of the IRB." On 30 August, immediately after the suspension, Broski told an open meeting at the university that "the buck stops at my desk, and I take responsibility for the findings." University president James Stukel would say only that Broski left for "personal reasons."

The university has since issued a mea culpa. In a statement, Eric Gislason, interim vice chancellor for research, admitted that "our office did not keep up with" the rapid growth in UIC's research program over the past 4 years, a period in which total funding from the Department of Health and Human Services doubled to its current level of $80 million. UIC has followed OPRR's orders, says UIC spokesperson Bill Burton. It has put relevant people through educational programs on research ethics and is revising its ethics procedures, which it plans to submit to OPRR before the end of the month. On 1 October, IRBs will start what is likely to be a yearlong process of re-reviewing all active projects. (See www.uic.edu/depts/ovcr/oprr/index.html for documentation of university actions.)

–CONSTANCE HOLDEN