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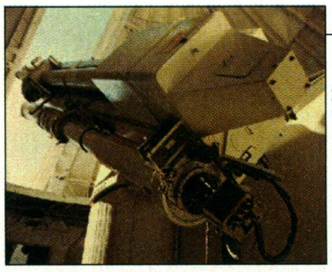

NSO

**Getting old.** NSF needs advice on upgrading solar telescopes such as this one in New Mexico.

## Taking Stock in Solar Astronomy

A host of new international solar projects in space and on Earth has made the sun a hot research topic (p. 1264; Articles). But the ground-based telescopes needed to support this work are becoming obsolete, and in U.S. universities, the outlook for solar physics is hazy. So the National Science Foundation (NSF) is hoping the National Academy of Sciences (NAS) will conduct a study on what's needed to keep the field strong.

For most ground-based observations, the country's several hundred solar physicists and astronomers rely on a half-dozen solar telescopes run by the National Solar Observatories (NSO), which gets about $3.4 million for the instruments from NSF and $700,000 from NASA and the Air Force. But NSO's telescopes haven't been upgraded since 1972, and the few run by universities are closing or barely staying afloat. Supporters say the field has lost out to nighttime astronomy, whose results are more likely to catch the public's eye.

The NAS study would be intended to tell NSF how to make the most of its ground-based solar physics budget, perhaps by consolidating facilities. A second issue, says NSF astronomy division director Hugh Van Horn, is whether the scientific community should be concerned about the dwindling supply of U.S. solar physicists. The field is thriving in Europe and Japan, but traditional U.S. strongholds such as the University of Hawaii and the California Institute of Technology have cut positions. "Is it really just a matter of transferring expertise [to other universities], or are we seeing a downturn that's a serious thing for the nation?" asks Janet Luhmann of the University of California, Berkeley, who heads the NAS committee on solar and space physics.

Although the NAS hasn't yet formally proposed the study, Van Horn hopes a panel can begin soon and finish within a year.

## Ocean Research Bill Steams Ahead

A plan to give at least $20 million to the Navy for oceanographic research involving partnerships with academia and industry is sailing through Congress and seems likely to become law this year.

This month the House voted to create the National Oceanographic Partnership Program as part of a bill to authorize 1997 spending levels for the Department of Defense (DOD). The bill is now pending before the Senate. Although President Clinton has threatened to veto the $267 billion defense bill because it would give DOD $12 billion more than he requested, the research partnership program enjoys bipartisan support and is expected to survive any legislative compromise. "Our goal is to sanction partnerships and set up a structure for them within the framework of meeting national security needs," says a congressional aide. "The oceanographic community will take it from there."

The program, backed by the university-based Consortium for Oceanographic Research and Education, drew favorable comments from several top Administration officials during a House hearing earlier this year (*Science*, 2 February, p. 591). The legislation would make the secretary of the Navy head of a policy-making council that includes top officials from the National Oceanic and Atmospheric Administration, the National Science Foundation, NASA, and the National Research Council. Although the bills differ in the level of proposed funding—$30 million in the House version and $20.5 million in the Senate—both include money for a peer-reviewed grants program, ship time on the U.S. academic fleet, and an ocean-sensing database.

## Now You're Talking Real Money

Lost: $9 billion in federal funds spent on industrial R&D. Last known address: the Defense Department. If found, call the National Science Foundation (NSF).

NSF officials aren't quite desperate enough to place such a classified ad. But they admit they can't explain why NSF's latest *Science and Engineering Indicators* report (*Science*, 24 May, p. 1094) shows that the Pentagon spent $24 billion on industrial R&D in 1993, while companies say they received just $15 billion in military R&D that year. "We're stumped," says NSF's John Jankowski. "This is a real mismatch." That difference also explains why the report's latest figure for overall federal R&D spending—$69 billion—is $9 billion higher than what industry, universities, states, and other performers reported getting from Uncle Sam.

The problem arises because NSF draws upon several surveys, as well as educated guesses based on statistical formulae, to compile the data that go into its 650-page biennial report. Although the totals for performers and sources have always differed slightly, says Jankowski, the gap was only $2 billion in the 1993 report.

NSF and Defense Department officials plan to meet next month to discuss the widening gap. Several explanations have already been rejected, Jankowski says, but he plans to keep looking for the right answer. "It's more than a little frustrating," he confesses.

## Smallpox Destruction Set for 1999

Disappointing a group of public health experts who had campaigned for swift action, the governing body of the World Health Organization (WHO) has voted not to destroy research stocks of smallpox virus for at least 3 years. Last week in Geneva, the World Health Assembly (WHA) unanimously agreed to set a deadline of 30 June 1999 for destruction of the stocks, provided WHA members vote to confirm the decision once again before that date.

WHO describes the official decision as a "breakthrough in the decade-long debate within the scientific community" because it sets a final date for eliminating the virus, after two proposed earlier deadlines were allowed to pass. Last week's WHA resolution calls for destroying not just variola (smallpox), but also "viral genomic DNA, clinical specimens, and other material containing infectious variola virus."

The deadline of June 1999, however, seems remote to some public health advocates, such as Donald A. Henderson, a former U.S. public health service adviser now at Johns Hopkins University. For several years, Henderson has pushed for destroying variola stocks immediately. In April, he and five other public health leaders joined Frank Fenner of Australia in a petition to WHO asking that variola stocks be disposed of in June (*Science*, 3 May, p. 637). But WHO staffers say the proposal never came up for debate at the WHA meeting.

Henderson notes that many WHA members were preoccupied with the controversies surrounding mad cow disease, and that a cash-strapped WHA had shortened its annual meeting, making it difficult to consider alternatives to the 1999 date for smallpox destruction. Henderson says that "it's always possible" that WHA will back away from the deadline before it comes up again in 1999, adding, "It's too bad that they missed this chance" to destroy the virus this year.