

Sacramento Peak Observatory to Close?

In the face of chronically short budgets, the National Optical Astronomy Observatories (NOAO) may soon recommend to the National Science Foundation (NSF) that its Sacramento Peak solar observatory in New Mexico be closed. This would mean mothballing a unique instrument, the 100-meter vacuum tower telescope, which produces the highest resolution images of the sun now available.

In recent weeks a letter warning of this possibility has been circulated by NSF to Congress and to the observatory users. The astronomers are distressed, and so are New Mexico Governor Tony Anaya, Senator Pete Dominici (R-N.M.), and Representative Joseph Skeen (R-N.M.), all of whom have expressed support for Sacramento Peak.

NOAO director John T. Jefferies emphasizes that nothing has been decided yet. On 28–29 March he will present a series of recommendations to the board of directors of the Association of Universities for Research in Astronomy, the consortium that manages NOAO; any decision made there will then have to be ratified by NSF. "So I'm not looking for any resolution short of mid-May," says Jefferies. And even if Sacramento Peak is eventually closed, he adds, it will certainly continue to operate through the end of the current fiscal year in October.

NOAO is an umbrella organization created in late 1983 to manage Sacramento Peak, the Kitt Peak National Observatory in Arizona, and the Cerro Tololo International Observatory in Chile. In each of the last three federal budget submissions, NSF has requested that NOAO be funded in the \$24-million to \$25-million range. But twice now, Congress has lopped off some \$2 million. "How bad it will be this year I don't know," says Jefferies. "The best case would be the President's budget [\$24.05 million], but that seems unlikely."

The cutbacks have come for a variety of reasons, most notably Congress' mandate that money be diverted from NSF's research programs into a new series of supercomputer centers (*Science*, 15 March, p. 1318), and the insistence of Representative Edward P.

Boland (D-Mass.), chairman of the appropriations subcommittee overseeing NSF, that money be diverted from astronomy into science education (*Science*, 18 January, p. 283). But the upshot is that Jefferies has felt compelled to plan for permanently lowered budgets—at a time when he also feels compelled to expand some of the observatories efforts.

"There are lots of frontier areas where I don't think the national observatories are doing the kind of job they need to do," he says, "areas such as instrumentation, detector development, or new telescope programs. So somehow we have to identify the funds to start doing those things too."

Jefferies and his colleagues have accordingly sought to rearrange some priorities. As it happens, the annual budget of Sacramento Peak is some \$2.6 million, which is almost exactly equal to the shortfall in NOAO's overall budget; thus, he is considering two scenarios for the facility. One is to close down everything but the vacuum tower, which would continue to operate at a bare bones level. The other is to shut down everything and move the vacuum tower instrumentation to the McMath solar telescope on Kitt Peak. (Moving the tower itself would be impractical: it is essentially a vertical vacuum chamber extending 60 meters below ground and 40 meters into the air.) This would preserve some of the tower's capability. But high resolution solar imagery would not be available again until the National Aeronautics and Space Administration's Solar Optical Telescope flies on the space shuttle in the 1990's.

Of course, a cynic might wonder if all this were just a ploy by the astronomers to keep Congress from cutting their budget again. It has certainly gained them the support of Senator Dominici and Representative Skeen. However, they do appear to have real grounds for concern about Boland and his house appropriations subcommittee. Boland has made no secret of his opinion that astronomers are getting too much money from NSF and that science education is not getting enough; last year he threatened to cancel NSF's top-priority Very Long Baseline Array of radio telescopes unless the science education budget were increased—he did win a delay—and this year he is threatening to do it again.

"The worst thing I can imagine would be for Congress to direct that Sacramento Peak be closed and then put the money into science education," says John Teem, director of the Association of Universities for Research in Astronomy, "because then the attempt to manage the observatories effectively would be perverted."

—M. MITCHELL WALDROP

Britain Moves to Increase Technology Incentives

The British government has just announced a series of measures designed to boost the growth of the nation's technological capabilities. These include the allocation of an additional \$48 million to higher education institutions, which will enable them to produce an extra 4000 technical and engineering graduates by the end of the decade, and the offer of new tax incentives for those investing risk capital in small research-based companies.

The increased funding for university and polytechnic degree courses was announced by the Secretary of State for Education and Science Keith Joseph. He told the House of Commons in a written statement that it had been agreed to by the government as a "substantial response to requests for industry" for graduates in areas such as engineering and computer sciences.

Discussions are currently taking place with the University Grants Committee on which institutions should receive the extra funding, which will be allocated over a period of 3 years. In the first year, support allowing for an increased student intake will be provided to a relatively small number of university courses which are already in a position to demonstrate a high academic standard and a guarantee of support from industry; in the second and third years, the money is intended to create a number of new courses meeting the same requirements in a wider range of institutions.

Areas to receive special emphasis under the government's plans include electronic and software engineering, as well as more conventional fields such as production engineering, applied physics, and materials science.

As part of this initiative, British Prime Minister Margaret Thatcher has written to the heads of 30 large high-technology companies asking them to support the government's goals either directly through financial aid to students and university departments, or indirectly through the donation of equipment and the secondment of staff.

Joseph also announced that the government is to spend \$28 million over the next 2 years boosting technology courses in high schools; a substantial part of this money will be used to retrain schoolteachers currently responsible for other subjects.

The new tax incentives favoring research-based companies were announced by the Chancellor of the Exchequer Nigel Lawson in his budget address and are continued in the revision of the Business Expansion Scheme first launched by the government in 1983.

Under the original terms of the scheme, individuals were entitled to write off against income tax \$45,000 invested in private trading companies based in Britain. The rules have been rewritten to include companies engaged in research and development, which had previously not been considered as engaged in "trading" since their income is derived from research contracts, royalties, and license fees rather than the sale of products.

—DAVID DICKSON

Reagan Endorses NAE's "Decade III" Program

A new program of the National Academy of Engineering (NAE) has been endorsed by President Reagan as a step toward achieving what the President calls the "Second American Revolution" based on progress in technology and engineering. The NAE has recently announced a plan to help "advance the industrial competitiveness of this nation" through an initiative called "Decade III." With funding from corporations, foundations, and other private sources, Decade III will include what the academy calls "detailed studies" of the competitive status of U.S. industries, the economic potential of emerging technologies, and ways of strengthening engineering education.

In a letter to NAE president Robert M. White and chairman Stephen D. Bechtel Jr., Reagan asked the academy "to marshal the nation's technical engineering-based expertise in a campaign that will ensure America's scientific, technological and engineering leadership into the 21st century."

Decade III will include a series of symposia on technology and society, as well as round tables on the management of technological innovation, ways of protecting the environment while promoting economic development, and similar topics. Says White, who has declared a strong interest in increasing the engineering academy's visibility, "... we are pleased that President Reagan has given the NAE's initiatives his personal expression of support."

—BARBARA J. CULLITON

Europe to Start Removing Lead from Gas in 1989

The ten member-countries of the European Economic Community have, for the first time, agreed on a series of steps to eliminate lead from gasoline—but on a considerably longer time scale than that recently announced for the United States by the Environmental Protection Agency.

Meeting in Brussels last week, the environment ministers of the ten countries adopted a resolution requiring each country to introduce lead-free gasoline (currently unavailable in Europe) by 1989. They also agreed that individual countries should reduce the maximum lead content of gasoline from 0.4 gram per liter to 0.15 gram per liter (the current minimum) "as soon as they see fit."

The general understanding is that all new cars produced by European manufacturers from 1989 onward will run on lead-free gasoline, but no date has been fixed for the complete elimination of lead.

The decision represents an attempt to balance conflicting pressures not only from different interest groups but also from the different countries involved. The German government, for example, had long been pushing for the elimination of lead from gasoline. Britain has argued for a ban but on a much extended time scale. France

and Italy reluctantly agreed to go along with their European partners but they continue to point to the heavy costs that they claim are likely to be imposed on their respective automobile industries, already suffering from stiff competition from Japan and other countries.

Both countries voiced the same reservations about an even more controversial package, also agreed to at last week's meeting in Brussels, under which all new European automobiles will eventually be required to be equipped with catalytic converters. These will be needed to meet strict emission limits broadly comparable to those that have existed in the United States for several years. Again, Germany wanted swift action, Britain preferred a longer timetable, and France and Italy resisted the move.

The final decision will require large cars, which are important in the German market, to meet the limits in 1989, while smaller cars, which the French and Italians mostly manufacture, will have to meet them in 1993.

—DAVID DICKSON

Charges Against Refusenik Lifted

Last year the KGB blocked an exit visa for Soviet microbiologist David Goldfarb on the grounds that the bacterial strains he wished to take with him were "national security material." The latest word is that the charges have been dropped for "lack of substance" and the material restored to Goldfarb, according to his son, Alex, a professor at Columbia University.

Now, however, the KGB has threatened Goldfarb with prosecution for "anti-Soviet propaganda" because he has expressed support for the moratorium, initiated by American and English scientists, on sending strains to Soviet scientists pending resolution of the case.

Alex Goldfarb says officials at the Soviet Academy of Sciences have expressed concern over the boycott, which is apparently being complied with by quite a few scientists here and abroad. "Obviously this thing has been working," says Goldfarb. But the matter of the visa is still up in the air.

—CONSTANCE HOLDEN