

## Bromley Targets Superconductors

D. Allan Bromley, President Bush's science adviser and director of the Office of Science and Technology Policy, is preparing to sharpen the focus of the federal government's research effort to develop low- and high-temperature superconducting materials. On 31 October, he is expected to outline a 5-year plan aimed at providing better coordination of research on superconductivity and encouraging greater industrial investment in developing the technology.

Bromley also is expected to recommend increased funding for research at government laboratories and at federally supported universities over the next 5 years. A draft copy of Bromley's plan, obtained by *Science*, suggests that, on average, federal agency budgets for fiscal year 1994 could be 50% higher than in 1989. Total federal support for all superconductivity research was \$187 million in fiscal year 1989, with high-temperature work receiving \$129 million.

The report says there is an urgent need to identify weaknesses in the U.S. research effort and to utilize research funds more effectively to transform scientific knowledge into useful technologies. It also cites a need to consider the national security issues that might arise as the technology is developed and applied.

The 600-page draft, which is being revised, recommends that the Department of Defense (DOD) "be given primary responsibility for promoting advancements in [certain thin-film superconducting] technologies because of the many potential applications in defense systems." In particular, the Administration seems concerned about thin-film devices for earth observation and space communications applications that are being developed by the National Aeronautics and Space Administration.

The Superconductivity Action Plan, which is to be examined in a hearing by the House Subcommittee on Transportation, Aviation, and Materials at the end of the month, was mandated by Congress in 1988. But the undertaking languished in the last months of the Reagan Administration because of inadequate funding for the National Commission on Superconductivity and its parent organization, the National Critical Materials Council.

"Right now, there is really no . . . national focus or guiding direction" for the U.S. research effort, says Carl Rosner, president of Intermagnetics General Corporation. But Rosner, who also represents the Council for Superconductivity for American Competitiveness, says he has "high hopes" that this

will change since Bromley appears ready to crown himself the czar of superconductivity R&D. The draft plan would give OSTP a much stronger role in shaping the superconductivity research agenda. It would conduct a continuing review of government efforts, with advice from industry and nongovernment experts.

One request of industry officials like Rosner is that the Administration try to bring a better focus to research efforts in the civilian sector. "DOD may be the only agency that knows where it's going," says Rosner, citing the lack of a lead federal agency in superconductivity in the civilian side of government. But if DOD is the dominant research agency, as Bromley's

draft plan suggests, Rosner fears that the development of a strong, industrially oriented R&D effort could be stifled.

Bill Gallagher, a researcher at IBM's research center in Yorktown Heights, New York, says DOD's support in superconductivity is valuable, but he shares Rosner's concern. DOD's R&D "tends not to spill over into the commercial sector where manufacturing cost is a primary concern," he says.

Bromley's plan is certain to undergo change. Aides say that the next year will be spent studying basic and applied research needs in greater depth. Also to be examined are the creation of special R&D tax credits, health and environmental safety issues related to superconductor materials, and ways to expand American researchers' working relationships with their counterparts in Japan and Europe. ■ MARK CRAWFORD

## Landsat: Cliff-Hanging, Again

The Landsat program, while making a unique photographic survey of the earth from space, has also staged one of the longest running soap operas in the federal science budget. This fall it seems headed for yet another life-or-death drama.

The Landsats have dangled on the brink of oblivion for several years, and despite a celebrated rescue by Vice President Dan Quayle last spring (*Science*, 17 March, p. 1429), they are still in trouble. Unless Congress reverses a decision taken in the House earlier this year, the operations account will run dry in a matter of days.

"It's a crime," says Alden Colvocoresses, a federal map maker and former president of the American Society for Photogrammetry and Remote Sensing, speaking of the way the bureaucracy has poured money into the management of the program but failed to provide an efficient, reliable data resource for earth scientists. "Nobody seems to recognize that Landsat is a key element of the U.S. space program," he says.

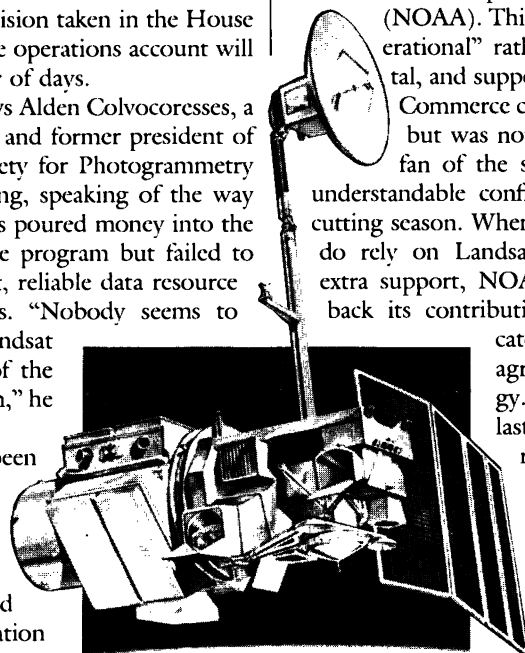
Instead, it has been treated as an orphan. In recent times, while billions of dollars have been promised for the space station and trips to the moon and Mars, Landsat has not been able to count on as little as \$19 million in federal support needed to keep the ex-

isting satellites running for a year. Researchers who use it have had to beg repeatedly for emergency help from Congress and the White House.

Landsat's troubles arose from a decision by the Carter Administration to "commercialize" the program and shift it out of the category of space research at the National Aeronautics and Space Administration into Commerce under the National Oceanic and Atmospheric Administration (NOAA). This made Landsat "operational" rather than experimental, and supposedly self-financing.

Commerce controlled the budget but was not a big user or great fan of the satellite. This led to understandable conflicts in the budget-cutting season. When other agencies that do rely on Landsat failed to chip in extra support, NOAA began trimming back its contribution. NOAA's advocates in Congress agreed with this strategy. This led to a crisis last spring when bankruptcy loomed.

Vice President Quayle, in his first major action as head of the newly created National Space Council, rode to the res-



**The edge of night?**  
Landsat, poised for another melodramatic rescue as funds run out.