



**BITTER END:** Closing the gate on the HFBR at Brookhaven National Laboratory.

Martha Krebs, director of DOE's Office of Science, explained to reporters that the secretary's action "obviates the necessity to complete the EIS process." In a telephone conference with science writers, she asserted that the reactor's shutdown was "a difficult decision for the secretary," who, she said, "engaged in as deliberate a process as possible . . . considered all the scientific, programmatic, and community issues," and consulted with "neutron scientists and others, community leaders, and elected officials" before making up his mind.

According to Krebs, the annual cost of operating the reactor was about \$27 million, while maintaining the HFBR on standby is around \$23 million per year. In response to a reporter's question, Krebs said she could not determine whether it would be more expensive to decontaminate and decommission the reactor than to start it back up and operate it. Brookhaven officials earlier had estimated closing costs at \$178 million.

Environmental activists praised Richardson's decree. "It was a political decision," said Bill Smith of Fish

Unlimited, "but it doesn't matter. The important thing is, it's closed." Scientists mourned the loss. "The cost to the nation's science effectiveness is likely to be far greater" than the cost of restarting the reactor, said Marburger in a statement lamenting the HFBR's "untimely demise."

Richardson "pulled the rug out from under us; we weren't given a fighting chance," said Steven Shapiro, associate chairman of Brookhaven's physics department. "We have a facility with a replacement cost of a billion dollars, and for four or five million more than is already spent each year, we're told we can't get restarted." Shapiro pointed out that 280 researchers used the reactor, including 126 from US universities and 14 from industry.

Robert Birgeneau, dean of science at MIT, called the closing of the HFBR a "terrible event." Neutron scattering "is an important field of research in which America has been slipping, and in which it may now be abysmal." Now, HFBR users will have to fight for time at two other US facilities— Oak Ridge National Laboratory in Tennessee and the National Institute of Standards and Technology in Maryland—or go to France's Institute Laue Langevin. DOE officials hope to relieve the jam-up with upgrades at other US neutron sources and the completion of Oak Ridge's Spallation Neutron Source in 2006.

**IRWIN GOODWIN**

## Washington Ins & Outs

### Wolff to Leave as NOAO Head; Oertel Departs AURA

With two and a half years remaining in her third term as director of the National Optical Astronomy Observatories (NOAO), **Sidney Wolff** submitted her resignation, effective on 31 December. To many astronomers, her action seemed premature. A tough, outspoken, and smart administrator, she was the odds-on favorite for a fourth term as NOAO's director in 2002. But her decision to leave was characteristically emphatic. Her memo to the board of the Association of Universities for Research in Astronomy (AURA), released on 19 November, stated her intention to step aside, but also indicated her willingness to continue running NOAO's three national centers until her successor is in place "and can take over my responsibilities."

In her statement, Wolff explained

that her decision was not impulsive. "It is actually a vote of confidence in NOAO and its future," she wrote. "As you should know by now, I never quit when the going is tough! In fact, I have concluded that there is unlikely to be a better time than now to initiate recruitment for the next director." As Wolff sees it, NOAO faces no budget crisis this year, since Congress appropriated nearly as much as President Clinton had requested for the National Science Foundation (NSF) in fiscal 2000, and it seems likely that the agency will provide somewhat more than the inflation rate to operate the centers and to provide the main support of the seven-nation Gemini twin 8-meter telescopes in Hawaii and Chile. She noted that problems that plagued NOAO at this time last year have been resolved—



NOAO

**WOLFF:** Pragmatic and courageous.

notably, the Gemini Near Infrared Spectrometer (GNIRS), the Synoptic Optical Long-term Investigations of the Sun (SOLIS), and the Southern Observatory for Astronomical Research (SOAR) projects.

Wolff is credited with steering NOAO through a sometimes cloud-covered constellation of development and construction problems in the past decade, when the Gemini telescopes were being designed, funded, and built, and she was engaged in reallocating her budget so that astronomers could have greater access to state-of-the-art telescopes, through the Global Oscillation Network Group (GONG), the Wisconsin-Indiana-Yale-NOAO (WIYN) network, and the Southern Observatory for Astronomical Research (SOAR).

During her 12 years as NOAO's director, Wolff also has embraced independent observatories in the common cause of wider access. "Before Sidney came on the scene, 'Life with AURA' was one scrap after another," recalled Paul Vanden Bout, director of the National Radio Astronomy Observatory, who had been in graduate school with Wolff at the University of California, Berkeley in the mid-1960s.

At NSF, Hugh Van Horn, who heads the astrophysical division, which funds NOAO, characterized Wolff as "pragmatic, level-headed, and possessing courageous convictions and management abilities. She needed all that to navigate the turbulent waters of the astronomical community." Wolff has never feared taking on challenges, Van Horn said. In 1992–94, he recalled, "she was able to juggle" running NOAO, direct the founding of Gemini, and take on the presidency of the American Astronomical Society.

"Any one of those is a big job in itself," said Van Horn. More recently, Wolff led the preparation of NOAO's long-range plan, which includes a major new all-sky survey telescope, and bold proposals for a large aperture telescope in the range of 50–100 meters. She has also pioneered efforts to develop collaborations with NASA's Chandra x-ray telescope and Space Infrared Telescope Facility (SIRTF) to coordinate views from the ground with those in space. The plan for NOAO has been widely discussed among optical astronomers and is to be incorporated in the eagerly awaited decadal survey that is now just about completed by a committee of the National Academy of Sciences' National Research Council.

Wolff is convinced that "it is important to make the transition to new leadership to provide the continuity required to carry out the plan" or whatever parts of the plan the research council's committee accepts. "The responsibility for implementing the plan must necessarily belong to someone other than myself. . . . Never in my time as a professional astronomer have I seen so many qualitatively new opportunities opening up. The confluence of a deeper understanding of astrophysics and developments in technology make it possible to ask and answer questions that we could not have contemplated just a few short years ago."

After NOAO's new director is on board, Wolff intends to return to the scientific staff of the Kitt Peak National Observatory, where she had been director for three years before taking over NOAO in 1987. "It has been more than 20 years since I have had a chance to devote a significant amount of time to research," she said in her memo. "Having spent most of my life building facilities—first on Mauna Kea and now at NOAO—I would like an opportunity to use some of those telescopes."

**A**t the annual meeting of AURA's board of directors in Tucson last April, **Goetz K. H. Oertel**, the organization's president, announced his retirement on 1 June. Oertel had a long career in science administration at NASA, NSF, the Energy Research and Development Administration, and its successor, the Department of Energy, before his appointment as president of AURA in 1986. A graduate of the Christian Albrechts University of Kiel in Germany, Oertel came to the US under a Fulbright grant and earned a PhD in plasma spectroscopy and laboratory astrophysics from the University of Maryland at College Park in 1964. Under Oertel's leadership, AURA has grown in size and scope. It now has 29 member universities and five international affiliates.

Before his arrival, AURA, under cooperative agreements with NSF, operated NOAO, which included the Kitt Peak observatory near Tucson, the National Solar Observatory at Sacramento Peak in New Mexico, and the Cerro Tololo Inter-American Observatory in Chile. Under contract with NASA, AURA also operated the Space Telescope Institute in Baltimore. After Oertel arrived, AURA took on the responsibility of constructing and operating the interna-

tional Gemini twin telescopes, a partnership of seven countries and partly funded by NSF. Moreover, before his retirement, Oertel initiated negotiations with NASA to operate the Next Generation Telescope, which will replace the Hubble Space Telescope.

At the time of Oertel's departure from AURA, Wolff recalled that when he became president, a year before she took over at NOAO, she asked him about his primary task. He simply replied: "to support the observatories."

"He has done that with total commitment, and he was always there when I needed advice, help, or just someone to talk to. Equally important, he was not there when I did not need him. His belief was that you should hire outstanding staff and give them room to do their jobs. He stuck by that, even when the going got tough," said Wolff. Oertel's style also impressed Bruce Margon of the University of Washington. "It will be difficult to imagine AURA without Goetz. His endless energy, optimism, and patience have helped shape the astronomy of this decade and the next far more than many of our colleagues realize," Margon said.

AURA's board named **William Smith**, the organization's vice president for programs, as interim president until Oertel's successor is chosen. Smith, who received a PhD in chemistry from Texas A&M University in 1974, served as staff director for the House science committee's subcommittee on space before joining AURA.

**O**n 3 December, Neal Lane, director of the White House Office of Science and Technology Policy, announced his appointment of **Gerard L. Epstein** as assistant director for national security. For the past four years, Epstein has been serving as senior policy analyst in OSTP's national security and international affairs section. Prior to that, he had been a senior associate in international security and space programs at the Congressional Office of Technology Assessment, a uniquely nonpartisan think-tank on Capitol Hill that Congress abolished in 1995 (see *PHYSICS TODAY* October, 1995, page 53). In 1989–91, Epstein directed the dual-use technologies project at Harvard University's John F. Kennedy School of Government. He has also been a visiting lecturer in public and international affairs at Princeton University's Woodrow Wilson School of International Studies.

Epstein received a BS in physics

and electrical engineering in 1978 from MIT and a PhD in physics in 1984 from the University of California, Berkeley. As OSTP's assistant director for national security, Epstein has a full bag of policy issues relating to nuclear, chemical, and biological weapons of mass destruction, disposition of Russian excess weapons-grade plutonium, physical or computer-based attacks on critical infrastructures, counterterrorism R&D, international technology transfer, ballistic missile defense, and nonproliferation and arms control.

**A**t the turn of the millennium, **Alex Flint**, the highly regarded chief executive of the Senate appropriations subcommittee on energy and water development and once the legislative aide to Senator Pete Domenici, the influential Republican of New Mexico, who chairs the subcommittee, joined the lobbying firm of former Senator J. Bennett Johnston, the Louisiana Democrat who had ruled the same subcommittee before his retirement in 1997. That was the year Republicans took command of the Senate and Domenici replaced Johnston as subcommittee chairman. When that happened, Flint left Domenici's staff to take the subcommittee job.

Flint succeeded W. Proctor Jones, who had been an aide in the 1960s to

Senator Richard Russell, the powerful Democrat from Georgia. Jones joined the appropriations committee in 1971. Jones, like Flint after him, left the subcommittee's top job for Johnston's lobbying firm, which represents a galaxy of companies, universities, associations and organizations, including Lockheed Martin, Northrup Grumman, Battelle Memorial Institute, SBC Telecommunications, Drexel University, and Tulane University.

Flint had served in Domenici's office for eight years, the first two while attending George Washington University in the District of Columbia. The energy appropriations subcommittee is ultimately responsible for the annual budgets for the Department of Energy's nondefense programs as well as for many of the nation's waterways and harbors. In the past decade, the staff's most demanding work has centered on mitigating the damage under the budget caps. The caps were first set in place to limit discretionary spending in 1990, when Jones occupied the job, and were readjusted during Flint's first year in 1997, after President Clinton and Congress agreed to a deal to balance the budget. Jones described the work of the staff with a famous aphorism: "First, do no harm."

**T**wo former deputy secretaries at the Energy Department have taken new posts: **Charles Curtis**, who served under two secretaries, Hazel O'Leary and Federico Peña, has been appointed executive vice president and CEO of the United Nations Foundation, which was established in 1998 to administer broadcasting executive Ted Turner's gift of \$1 billion to support UN causes related to child health, human rights, and environmental problems. Former Colorado Senator Tim Wirth is the organization's president. When Curtis left DOE in 1997, he joined the Washington law firm of Hogan & Hartson as director of its energy group.

Another former DOE deputy secretary, **Elizabeth (Betsy) Moler**, has joined Unicom Corp, a Chicago-based electric utility (once known as Commonwealth Edison, the nation's largest operator of nuclear power plants), which is merging with a Pennsylvania company, PECO Energy. Moler, who succeeded Curtis, served in 1997-98. She was a partner in the Washington law office of Vinson & Elkins before she was appointed as Unicom's senior vice president for federal government affairs. She was chair of the Federal Energy Regulatory Commission from 1993-97, before joining DOE.

**IRWIN GOODWIN**

## WASHINGTON BRIEFINGS

▶ **One Too Many Mishaps on Voyages to Mars** The loss of two successive US spacecraft on their approach to Mars in the last four months is regrettable, embarrassing, and costly, but unless an investigation finds that the failures were caused by NASA's planning or engineering, there are unlikely to be serious repercussions on Capitol Hill. The Red Planet has often eluded Earth's intrepid space explorers. Of 25 previous US and Russian attempts to land robot spacecraft on Mars since 1962, 11 have ended in disaster.

"Heads will roll" if NASA blundered again, said Representative Dana Rohrabacher, the California Republican who heads the House Science Committee's space subcommittee. But Rohrabacher and many of his colleagues in Congress understand the enormous risks of space exploration, and that is exactly why Congress forced NASA to launch "faster, smaller, cheaper" missions—though strict adherence to that mantra may be a fundamental cause of the recent failures. "It's difficult to blame anyone or anything until we know what went wrong," said Rohrabacher. "Failure of two missions is lamentable, but at least it's not a \$1 billion project."

It was the disappearance of the \$1 billion Mars Observer as it neared the Martian surface in 1993 that led Congress to demand that NASA pursue a management philosophy that sought to lower the price tags of planetary exploration and to launch the missions more quickly. In the wake of the Observer debacle, NASA attempted to balance an ambitious program against declining annual budgets and waning political

support. Loss of the \$165 million Mars Polar Lander and its \$29.2 million probes in early December was "a crushing blow," said Edward Weiler, NASA's head of space sciences. It followed by three months the failure of the \$125 million Mars Climate Orbiter, which veered off course and into oblivion because of a navigation error caused by a mixup in using English measurement units (by the contractor, Lockheed Martin Astronautics) and metric units (by NASA's Jet Propulsion Laboratory). In all, the agency's entire \$356.8 million program of Mars exploration last year came to a wretched end.

Weiler and the agency's administrator, Dan Goldin, promised a thorough examination of the Polar Lander's failure and its implications, as well as NASA's space-on-a-shoestring approach. "Clearly, something is wrong, and we have to understand it," declared Goldin in a teleconference with news reporters. "It is conceivable that we will completely change our approach. . . . Everything is on the table." This month, NASA officials are expected to decide whether to proceed with plans to launch other spacecraft to Mars in 2001. At least three major Mars missions are on the drawing boards for later in the decade. All could be drastically revised and delayed. While NASA and JPL are assembling formal investigations, the 106th Congress, returning for its second session on 24 January, is almost certain to convene hearings on the failures.

▶ **NIF Faulted for Cost and Schedule Overruns** A panel of physicists that advises the University of California on the