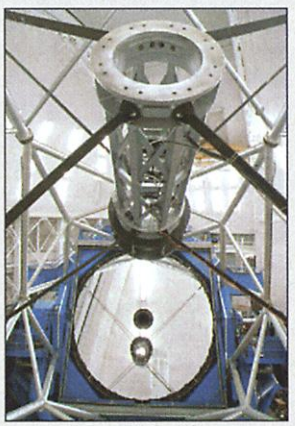
Budget Could Send Space Science Off in New Directions at NASA

The budget outline the White House unveiled on 28 February caps a week of startling news for NASA. On orders from the White House, NASA managers last week told Congress they intend to cancel plans for a Pluto flyby and a mission to study the solar wind. The agency is also following orders to make major cuts to the international space station after acknowledging huge cost overruns in the orbiting lab. Meanwhile, the president has called for a blue-ribbon panel of scientists to decide whether the space agency should swallow up the ground-based astronomy program run by the National Science Foundation (NSF).



Merger? Budget weighs shifting NSF astronomy facilities *(above)* to NASA's space science program.

Congress may not go along with all the directives in the president's budget, which would boost NASA's $14.3 billion budget by a modest 2%. But observers see the flurry of activity as a sign that the new Administration intends to grapple with difficult issues sidestepped by President Bill Clinton's team. "They seem interested in solving problems that have been left in the closet," says Bill Smith, a former Democratic House staffer who runs the Washington, D.C.–based Association of Universities for Research in Astronomy.

For example, the president's 2002 budget would kill off the Pluto and $350 million Solar Probe missions in favor of Mars exploration and high-energy astrophysics missions, setting clear priorities within a limited budget. But Congress may have other ideas: The current competition to build a cheaper and faster Pluto mission for a 2004 launch remains on track after a Senate spending panel told NASA space science chief Ed Weiler late last week not to pull the plug. Weiler has agreed to let bidders go ahead with their proposals, due this summer.

Support for some type of mission to Pluto also remains strong in the scientific community. "Stay tuned. Pluto isn't dead yet," says planetary scientist Michael Drake of the University of Arizona, Tucson, who chairs a NASA advisory panel on solar system exploration. "Pluto has not been targeted; it's just that it is seen as a new start, and there's not enough money." Indeed, the Bush budget contains money for new propulsion technologies that, if feasible, could allow a "future sprint" to Pluto before 2020, according to the budget plan.

Also controversial is the White House decision to create a blue-ribbon panel to examine the government's astronomy programs, which traditionally have been split between ground-based telescopes funded by NSF and space-based observatories funded by NASA. The panel, the budget plan says, should consider "the pros and cons of transferring NSF's astronomy responsibilities to NASA," which currently funds about two-thirds of the federal astronomy grant pie. The group, expected to consist of eight to 10 eminent outside scientists, is due to report its findings by 1 September.

The directive came as "a real shocker," says Weiler, adding that "NASA did not initiate this request." A recently released National Research Council report on the next decade of astronomy makes no mention of the need for such a transfer. But Smith and Administration officials say that there is dissatisfaction at the White House Office of Management and Budget over the lack of cooperation between the two agencies, institutional expertise, and concern about whether NSF's budget will have room for major facilities.

Although such a review is reasonable, says Robert Eisenstein, head of NSF's math and physical sciences directorate, "we can make a dramatically good case" for keeping the two agency efforts separate. "You need both players," he adds, pointing to NSF's track record on such recent large projects as the twin Gemini telescopes and the Laser Interferometer Gravitational-Wave Observatory. Weiler has his own concerns. Any transfer that takes place without an accompanying shift of staff and money, he warns, "would be a disaster for astronomy."

In human space flight, the Administration took NASA to task for allowing space station costs to balloon over the next 5 years by an estimated $4 billion. To pare back, agency officials say they will cancel a module devoted to crew quarters and a large rescue vehicle, shrink the crew size from seven to three, and put off decisions about future facilities. While the budget warns NASA to set aside enough money for "research equipment and associated support," fewer facilities and a smaller crew mean science may suffer in the long run.

–ANDREW LAWLER

With reporting by Jeffrey Mervis.

CREDITS: (TOP TO BOTTOM) GEMINI; ILLUSTRATION: CXC/TRW; SARAH MARTONE/AP

Counterweight. Societies hope Senator Pete Domenici will rescue physical sciences.

clares about recent efforts to do so. "There is no question that researchers will be more effective if grant sizes and duration are increased," counters computer scientist Anita Jones of the University of Virginia, Charlottesville, vice chair of the National Science Board, which oversees NSF. NSF-funded biologists, she notes by way of example, receive grants less than half the size of NIH awards. To clear up the confusion, the Administration wants NSF to enclose supporting data when submitting its 2003 budget request in the fall.

The Bush budget would also delay any new facilities. That includes the $400 million Atacama Large Millimeter Array, a joint project with the European Southern Observatory in the Chilean high desert that NSF had hoped to start next year, and two large networked facilities, for seismic monitoring and biodiversity assessment, that Congress deferred this year.

NSF's dark cloud has two silver linings. The first is a boost, from $18,000 to $20,500, in annual stipends for graduate students in a variety of discipline-based and agencywide programs. The second is an additional $20 million for mathematics research. But Colwell had also hoped to raise postdocs' stipends, and the math figure is a far cry from an NSF proposal to quadruple the division's current $122 million budget in 4 years.