

Briefings

edited by DAVID P. HAMILTON

Déjà Vu in NASA Reorganization

Barely a week after receiving a critical review by the White House-backed Augustine commission (*Science*, 21 December 1990, p. 1654), NASA administrator Richard Truly announced that his agency had decided to comply with one of the commission's recommendations: namely, to create a high-level Office of Exploration that will develop "well thought out" options for future moon-Mars exploration.

Truly is treading familiar ground. NASA created an Office of Exploration in August 1987 at the suggestion of a commission headed by former astronaut Sally Ride. But last year, after President Bush declared his own moon-Mars initiative, Truly rolled the exploration office into the Office of Aeronautics and Space Tech-

nology. While it was in business, the office conducted "paper studies" of manned solar system exploration without considering costs, and was widely considered a haven for space cadets.

Will the new exploration office fare any better? NASA spokespersons say it will be a "beefed-up" operation with responsibility for major exploration initiatives. But it is Congress that will probably decide whether the office will be a real force at NASA: Last year, legislators zeroed out the President's request for \$290 million in moon-Mars funding.

Sandage Wins Crafoord Prize

When Alfred Nobel, the inventor of dynamite, established his famous prizes for physiology for medicine, physics, and chemistry, he managed to overlook a number of scientific disciplines. Eighty-one years later, Holgerd Crafoord, another Swedish inventor, remedied at



Allen R. Sandage

least some of the deficiency by establishing prizes for mathematics, astronomy, the geosciences, and the biosciences, to be awarded each year in rotation. This year it is astronomy's turn, and the Royal Swedish Academy of Sciences, which bestows the award, has selected Allan R. Sandage, an astronomer at The Observatories, a California facility maintained by the Carnegie Institution of Washington.

Sandage, who once worked under the "father of observational cosmology," Edwin Hub-

ble, was cited for developing methods to determine the age of globular clusters; deriving a distance scale for the universe; and refining measurements of a cosmological variable known as the "Hubble parameter," which has a bearing both on the age of the universe and the speed with which it is expanding. He will receive the \$260,000 prize on 25 September.

Science Initiatives in the 1992 Budget

According to presidential science adviser D. Allan Bromley, 1992 will be a banner year for Bush Administration science initiatives. In a meeting with *Science* editors, Bromley described two new programs in the 1992 budget, which will be delivered to Congress on 4 February: a coordinated federal program for education and human resources and a program emphasizing high-performance computing and communication. Both initiatives will be presented as focused, multi-

NASA's House Is Falling Down

The Hubble Space Telescope apparently isn't the only major piece of NASA hardware in urgent need of repair. According to the General Accounting Office, the agency's own buildings and utility systems have degenerated to the point that they "could pose safety hazards or threaten missions."

Among the problems GAO identified in its report*:

- At the Marshall Space Flight Center, "[t]he roof of a laboratory building leaked so badly that electricians working with 440-volt electrical equipment had to be moved...because of a severe shock hazard."

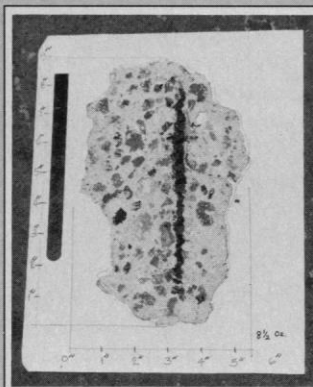
- The roof of the 52-story vehicle assembly building at the Kennedy Space Center, where the space shuttle is mated to its external tank prior to launch, has "leaked for several years," so badly rusting the roof deck's reinforcing bars that pieces of concrete "from small chips to 8-inch pieces weighing one-half pound or more" frequently break loose and fall. (NASA has erected nets beneath the roof to catch the falling concrete.)

- Loose electrical connections have caused a fire in a mission control building at Marshall.

- A cooling tower at Lewis Research Center partially collapsed under the weight of accumulated ice because water valves didn't work.

- Lewis also suffered over \$1 million in explosion damage when a steam shutoff valve braced by "deteriorated piping supports" ruptured.

These problems have a simple solution, says GAO—NASA should spend more money on maintenance. In its reply, NASA retreats into a familiar litany: The agency's \$13.9-billion budget is too small. "NASA headquarters did not always have sufficient funds available to give to the centers [for maintenance]," wrote assistant deputy administrator John O'Brien.



Get the cleanup crew. Aftermath of the Lewis steam explosion; a chunk of concrete from the vehicle assembly building at Kennedy.

*NASA Maintenance: Stronger Commitment Needed to Curb Facility Deterioration, U.S. General Accounting Office, GAO/NSIAD-91-34, December 1990.

agency programs, much like last year's global change initiative.

The computing initiative, which was sketched out in a 1989 report by Bromley's Office of Science and Technology Policy, will include support for advanced hardware and software development, the implementation of a national computer network known as the National Research and Education Network, and additional support for computer science education. Details about the education initiative are harder to come by, but Bromley has said it will involve all the nation's federal laboratories in attempts to improve the quality of math and science teaching. These laboratories will be "ordered" to make their personnel and facilities available to educators and students.

Two other major initiatives—one in materials science and another in biotechnology—are under development, and may appear in the 1993 budget, Bromley said.

Bromley also announced recently that two new panels will be added to the Federal Coordinating Committee on Science, Engineering, and Technology (FCCSET), an interagency group that coordinates federal science policy. Henry Habicht of the Environmental Protection Agency will chair a broad review of risk assessment methods used by federal science agencies, with the goal of forging a consensus on which methods are most effective. Another special task force, co-chaired by TRW executive John Foster and former Bell Laboratories executive Solomon Buchsbaum, will examine scientific and technology issues with national security implications.

Brown Picks Old Faces for a New Team

Whatever problems Representative George E. Brown (D-CA) may face as the new chairman of the House Science, Space, and Technology Committee, an inexperienced staff

This may be the Golden Age of biology, but wildlife biologists feel like they're missing the party. Squeezed by molecular biology on one side and trendy environmental sciences on the other, researchers like Harvard entomologist E. O. Wilson argue that their fields are being shortchanged. And this is happening, they say, just when their work is increasingly necessary, as the human species whittles away at biological diversity around the globe.

At a 10 January meeting of the President's Council of Advisers on Science and Technology in Washington, Wilson concluded a talk on biodiversity with a plea for support. After describing the present era as the "sixth mass extinction event in history," he noted the "parlous condition" of research in his own field. Some of the most important work today is being supported by museums, he said, but taxonomy "tends to be pushed aside as old fashion-

Fund taxonomy! E. O. Wilson.

Funding Unsexy Science

ed, intellectually dull, and largely complete—none of which is true." Although their research may not be particularly glamorous, he added, taxonomists create the foundation upon which all other studies of biodiversity depend.

Wildlife biologists cannot function effectively without well-supported natural history museums, Wilson argued. Such facilities keep the best

records and research labs for biodiversity studies. The most striking example of neglect, he said, is the decision to cut back the staff of the British Museum of Natural History. But even his own Museum of Comparative Zoology at Harvard gets by on a "skeleton staff." And others, like the San Diego Museum of Natural History, are facing the possibility of extinction themselves (see p. 375).

Wildlife biologists have been making similar pleas for years, but the novel thing about Wilson's pitch is that he made it to the top science policy committee in the country.



won't be one of them. Brown recently finished assembling his top committee staff, a collection of old congressional hands determined to "make the trains run on time," as one put it.

For the committee's top staff slot, Brown tapped Radford Byerly, Jr., a University of Colorado physicist, director of the university's Center for Space and Geoscience Policy, and member of the space science and applications subcommittee from 1975 to 1987. Michael Rodemeyer, previously staff director of the House science subcommittee on natural resources and the environment, will take on the challenge of turning science policy into legislation as committee counsel. For a legislative director, Brown chose William Stiles, Jr., who directed the staff of the House agricultural research subcommittee, which Brown chaired for many years. And Peter Didisheim, Brown's current administrative assistant, will become the committee's

assistant staff director.

Legislative aides perform much of the "detail work" in Congress, such as drafting legislation, selecting hearing witnesses, and researching issues. "Legislative assistants are to congressmen what graduate students are to principal investigators," says one aide. "They're the people who put things together, gather information, co-author articles, and so forth."

New T_c Record Fails to Materialize

For more than 2 years, researchers in high-temperature superconductivity have labored—without success—to create a material that loses its resistance to electricity at a temperature higher than 125 K (*Science*, 19 October 1990, p. 374). Then came word last September from a Japanese team at Hitachi that said it had succeeded in developing a vanadium oxide (Ti-Sr-V-O) supercon-

ductor with a critical temperature (T_c) of 130 K. The reaction in the community: excitement—and some skepticism. But the skeptics, it seems, have won out.

According to the superconductivity newsletter *High T_c Update*, experiments attempting to replicate the vanadium findings have all fallen short. University of Houston researcher Paul Chu reported in September that his efforts to fabricate Ti-Sr-V-O produced materials with "no superconducting transition." The latest attempt by a team at Beijing University did note "some interesting anomalies" in vanadium oxide's electrical resistance. But these fail to provide "any convincing evidence for superconductivity," the newsletter reports.

Shin-Pei Matsuda, leader of the original Hitachi team, isn't discouraged. "I believe that [replication] will occur in the future. The material is metastable, so our results are difficult to reproduce."