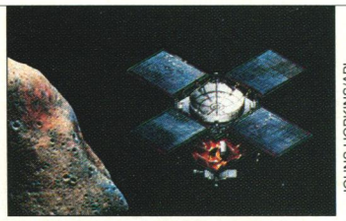
edited by RICHARD STONE

Space Scientists Face Grim Year

Space scientists anticipate that some of their projects will be maimed or killed in the National Aeronautics and Space Administration's (NASA) 1995 budget, due for release in early February. But even if the budget is better than expected, the negative vibes emanating from Congress and NASA headquarters have resulted in a wake-up call to space scientists to focus on cheaper and faster missions.

Space Science

Space scientists began fretting last October, when a letter from Congress urged NASA to keep its 1995 budget under $14 billion—about $550 million less than the 1994 budget. Subtract fixed costs of the shuttle program and the space station, as well as funds for White House pet projects such as the Earth Observing System and aeronautics research, and there isn't much money left for space science.



JOHNS HOPKINS/APL

Budget survivor? Asteroid mission may fly despite NASA cuts.

One NASA official estimates that the budget for the agency's Office of Space Science, $1.7 billion in 1994, could be slashed up to 40% over the next 5 years. Rumored to be on NASA's hit list are pricey, long-term projects such as the planned $4.5 billion Cassini mission to Saturn (*Science*, 17 December, p. 1807) and what's left of the $2.5 billion Advanced X-Ray Astrophysics Facility, a space telescope that would map the sky's x-ray sources.

The future seems brightest for projects that cost between $20 million and $150 million and would take less than 3 years to pull off. Of this ilk is the $150 million Near Earth Asteroid Rendezvous mission, a 3-year project set to begin this year. According to Stamatios Krimigis, who heads the space department at the Johns Hopkins Applied Physics Lab, cheap and fast missions must "become an institutionalized way of doing space science."

Turning Out-of-Africa Inside Out?

Anthropologists who trace human origins to Africa may need to put this scenario on ice next year. Archeologist Yuri Mochanov of the Russian Academy of Sciences has found stone tools that could be as much as 3.4 million years old—older than artifacts used to establish eastern Africa as our ancestral stomping ground—in, of all places, Siberia.

Archeology

No, Siberia wasn't a Garden of Eden back then—climate experts say it was probably at least as cold then as now. Nevertheless, Mochanov has unearthed 4000 stone artifacts, mostly choppers and scrapers, in deposits dating from 1.8 to 3.4 million years old. The "Diring" site is 2500 miles west of Anchorage, Alaska, in the Siberian province Yakutsk.

Mochanov's discovery—which implies that an unknown group of hominids arose in Siberia—is likely to cause quite a stir next year, says Robson Bonnichsen, director of Oregon State University's Center for the Study of the First Americans. Scientists already are lining up to examine the find. Still, even if the artifacts are only 100,000 years old, says Bonnichsen, the find "would not be accommodated by current theories of human evolution."

Mochanov's Diring-do goes on trial next month, when he presents his findings in lectures across the United States. He's bringing artifacts for scrutiny.

TRENDS 1994

Green Technologies Finally Coming of Age?

Policy wonks at the White House, Congress, and federal agencies talked endlessly in 1993 about boosting U.S. market share in environmental technologies, but they accomplished little. However, some real advances in "green" technologies may occur in 1994, when the Environmental Protection Agency (EPA) launches an initiative to infuse $2 billion over the next 5 years into green-tech development.

Environmental Science

Green technologies—processes or products meant to save the environment and yield profits—include everything from windmills to fungi that eat toxic waste. According to the Organization for Economic Cooperation and Development, the global market for such technologies in 1993 was about $250 billion, a number expected to balloon to $600 billion by 2000.

Despite enthusiasm over green technologies, however, the only substantive U.S. initiative to date has been an agreement between the Clinton Administration and Michigan automakers to jointly design a car that gets more miles to the gallon (*Science*, 8 October, p.172). Other efforts have had less tangible payoffs. For example, last November the EPA and the Departments of Commerce and Energy agreed to an export strategy on green technologies that's expected to do little more than school U.S. trade officials on the merits of green-tech.

The EPA initiative, on the other hand, will provide money—$350 million in 1994—directly to industry to spur development of green technologies. "Things finally appear to be moving now," says a congressional staffer who follows green tech.

Green gold. EPA will develop windmills and other "green" goods.

Getting Organized to Fight AIDS

For a decade the AIDS virus has resisted attacks from drug designers and vaccine makers. Now, AIDS researchers are regrouping: In 1994, they intend to mount a more coordinated offensive.

AIDS Research

Perhaps the most significant regrouping is at the National Institutes of Health (NIH), where the Office of AIDS Research (OAR) will have new coordinating authority. Thus far the office has been an obscure player in AIDS research, with little power over NIH's purse strings. In legislation passed last winter, however, Congress gave OAR authority to oversee NIH's AIDS budget, which is $1.3 billion in 1994. An OAR director is expected to be named by February.

Two other organizational shifts aim to coordinate work on drug development. The National Task Force on AIDS Drug Development, unveiled last month, promises to streamline a drug's journey from lab bench to pharmacy shelf by ensuring that drug companies work closely with federal scientists as well as activists to explore potential therapies. And a similar task force formed in April by 15 drug companies will allow the firms to share data from preliminary clinical tests.

Finally, projects like "Future Directions in AIDS Research"—a think tank of scientists, policy makers, and activists—will help AIDS researchers integrate efforts in 1994.