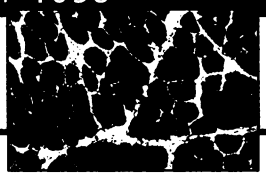


tinuing to make great contributions if restored to its full capacity," says John Bahcall, a neutrino expert at the Institute for Advanced Study in Princeton, New Jersey. "If I had the necessary skills, I would [go] to Japan to help with the repairs."

Equally encouraging is the supportive stance taken by the education ministry. Akira Yoshikawa, head of the ministry's Research Institutes Division, says that "the minister well understands the importance of this facility." Sobel says that he hopes to meet soon with officials at the Department of Energy, which funds the U.S. side of the collaboration, to see what support it might be able to provide. **–DENNIS NORMILE**

SPACE SCIENCE

European Programs Face Another Squeeze

European space scientists got an unsettling sense of déjà vu last week. The European Space Agency (ESA) had asked its 15 member governments for a 4% annual increase for its much-praised science program, but instead, government ministers meeting in Edinburgh approved only 2.5%—barely enough to keep up with inflation. A similar setback occurred in 1999, which means that space science funds have been stagnant for 6 years.

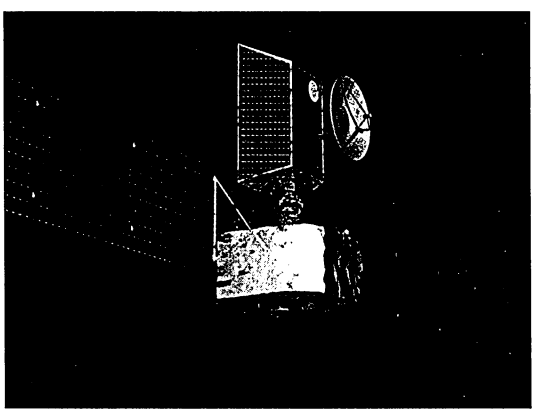
In contrast, Galileo, a program to build a European version of the U.S. Global Positioning System, and a plan to upgrade the Ariane 5 launcher received substantial boosts. "It's utterly unjust," says physicist Hans Balsiger of the University of Bern in Switzerland, a former chair of ESA's Science Program Committee (SPC). "I can see no reason why we are treated worse than everyone else."

The delegates also sent a strong signal of disapproval to the U.S. government on moves to cut back the size of the international space station. They reluctantly approved funds to meet ESA's obligations to the project, but they froze some 60% of the money until NASA makes clear its funding plans for the station and the number of astronauts that will live and conduct research there. SPC vice chair Giovanni Bignami, director of space science at the Italian Space Agency, called this a "wise decision," adding, "I would have made [the amount held back] bigger."

The SPC will meet early next month to decide how to carve up $1.65 billion for space science in 2002–06. Researchers contacted by *Science* believe that most missions planned for launch before 2010 seem secure, but some later ones, such as the Bepi-Colombo mission to Mercury, may have to be delayed. Missions beyond that, still in their planning stages, are threatened. David Southwood, ESA's head of science, told those meeting in Edinburgh that Gaia, an astrometry mission, was the most likely casualty. "Something has to give," he told *Science*.

Apart from the science program, to which all ESA members must contribute, a new optional program to develop missions to look for signs of life in the solar system, called Aurora, also got shortchanged. ESA had asked for $35 million to plan a series of robotic missions to other planets, moons, asteroids, and comets but came away with just $12 million. This should be just enough to set the ball rolling, however. "We can create a plan," says Paul Murdin, director of space science at the British National Space Centre. Italy had been one of the prime movers behind the Aurora project, but following a change of government last month the promised funds were not forthcoming.

Although space science was out of favor at the meeting, Ariane 5—the latest in a line of rockets that now account for more than half of all commercial launches worldwide—got a warm endorsement. It will be upgraded to increase its payload capacity, at a cost of $620 million. And in a groundbreaking collaboration with the European Union, ESA will launch its own fleet of 21 navigation satellites to help planes, trucks, ships, and even hikers pinpoint their positions with centimeter accuracy. Member governments pledged $470 million to design and develop the system, more than ESA asked for. **–DANIEL CLERY**



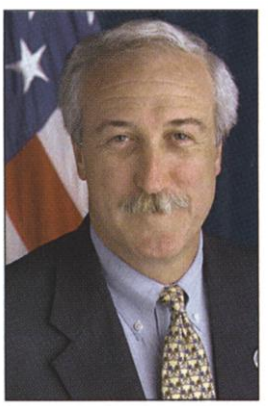
Stretched? Some medium-term projects such as the Bepi-Colombo mission may be delayed.

CREDITS: (LEFT TO RIGHT) ESA; AP PHOTO

SPACE SCIENCE

Insider Takes Over At NASA

Just over a week ago, Sean O'Keefe was publicly criticizing NASA for cost overruns and poor management. Now those problems are his responsibility. President George W. Bush nominated O'Keefe, 45, currently the deputy director of the Office of Management and Budget (OMB) and an influential Washington insider, on 14 November to NASA's top job, vacated on 16 November by Dan Goldin.



Connected. O'Keefe is plugged into the Bush White House.

O'Keefe's assignment is clear. "He is being sent to NASA to ensure fiscal responsibility," says one senior Administration official. "He will force things to be on time and on budget." Another manager who has worked closely with O'Keefe calls him "the consummate dealmaker." He has close connections to both Bush presidents and to Vice President Dick Cheney, having served in the first Bush Administration as Navy secretary and Defense Department comptroller. Senate confirmation is expected to be speedy.

O'Keefe's immediate task likely will be to address the concerns of NASA's international space station partners, who are angry at moves to scale back from six to three astronauts on the station, initiated by O'Keefe at OMB. European ministers warned in a press conference on the day of O'Keefe's nomination that they are prepared to scale back their own support in protest (see previous story). Meanwhile, NASA will be hard-pressed to resolve station cost overruns even if it adheres to O'Keefe's more modest version.

A second major crisis is brewing in the outer planet exploration program. Congress put $30 million into the 2002 budget for a flyby of Pluto, a program the White House

had terminated. But an OMB official warned on 15 November that the White House is unlikely to support Pluto funding in 2003 and that there is barely enough money to fund a mission to Jupiter's moon Europa, slated for launch around 2008. "The bottom line is we have no good options for planetary science in '03," OMB examiner Brant Sponberg told a National Research Council panel. As a result, he warned, "you guys are likely to lose money [for 2003 planetary efforts], not gain it." That would put the Europa mission, already estimated to cost about $1.1 billion, in jeopardy.

O'Keefe, who has been a defense appropriations aide in the Senate and more recently taught business and government at Syracuse University in New York state, has unusually strong connections to senior Administration officials for a NASA chief. "The Bush Administration clearly didn't want a space cadet," says John Logsdon, a political science professor at George Washington University in Washington, D.C. And that, after 10 years of a strong visionary with limited political clout, could work to NASA's advantage. **–ANDREW LAWLER**

ASTRONOMY

Dusty Young Star Gets New Birth Mates

Astronomers craving their first image of a giant planet beyond our solar system now have fresh targets to explore: newly identified siblings of Beta Pictoris, the most famous dust-shrouded star in the sky. A survey of the motions of nearby stars suggests that more than two dozen stars were conceived in the same womb as Beta Pic, thus exposing the closest and youngest stellar group yet known. Their youth and proximity to Earth make these stars "fantastically suitable for direct searches for warm, newborn planets," says astronomer Ray Jayawardhana of the University of California (UC), Berkeley.

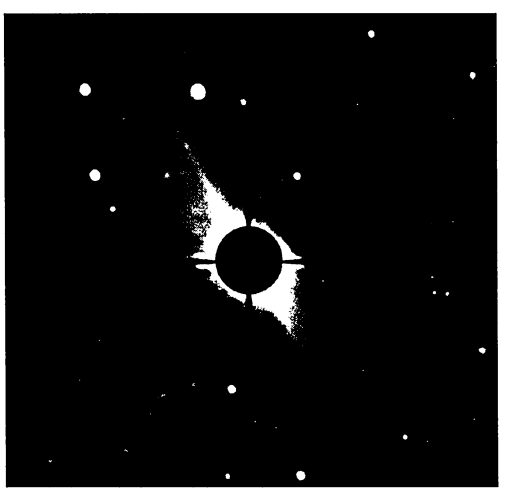
Beta Pic's fame dates to 1983, when the Infrared Astronomical Satellite photographed its vast cocoon of dust—the first glimpse of a suspected planetary system in the making. Theories predict that most stars arise in groups, so astronomers expected the apparently juvenile Beta Pic to have nearby companions hatched in a cluster from the same gaseous nursery. However, the first confirmed nest mates didn't turn up until 1999, when a team analyzed two youthful dwarf stars with trajectories that closely mimicked Beta Pic's path in space. The dwarfs raised hopes that more siblings were out there.

The family has indeed grown, according to a report in the 20 November issue of *Astrophysical Journal Letters*. Astronomers Ben Zuckerman and Inseok Song of UC Los Angeles and their colleagues describe 17 single and multiple star systems moving through space with Beta Pic. The stars were known before, but the team determined that the three spatial components of their velocities all match Beta Pic's three-dimensional motion to within 2 kilometers per second—an expected rate of drift from a dispersing cluster. Each star also exhibits at least one hallmark of adolescence, such as copious x-rays, rapid spin, or a dusty disk of its own. "Used together, the velocities and ages are powerful tools," says Song. "The chance that we have misidentified random stars as members of the Beta Pic group is extremely small."

The clan may hold the most promise for studies of emerging planetary systems, because young planets should be warm enough to shine brightly at infrared wavelengths. Although the stars have wandered to span one-quarter of the sky in the Southern Hemisphere, their average distance from Earth is a mere 100 light-years—the next town over, in cosmic terms. At about 12 million years old, they are younger than stars in the 30-million-year-old Tucana-Horologium association, which along with the Beta Pic group is the closest assemblage known. Another group, TW Hydrae, has the same age as Beta Pic's stars but is twice as far away.

Moreover, Beta Pic's group has the widest cross section of stellar types, including massive stars, dwarfs, and many stars like our sun. "These are the optimal stars to watch the evolution of dusty disks and to look for forming planets, especially if we're trying to make an analogy to our own solar system," Zuckerman says.

Others agree that the group is a boon for attempts to see planets directly. Adaptive-



CREDIT: PAUL KALAS/UC BERKELEY

Nuclear family. Dust-shrouded Beta Pictoris is the most visible member of a newly identified group of nearby young stars.

ScienceScope

Northern Exposure South Korean researchers are preparing to lift the lid on North Korean science with a Web site featuring research from their ultrareclusive neighbor. This month the Korea Institute of Science and Technology Information (KISTI) will begin uploading papers from North Korean scientists onto a Web site. The goal, says Choi Hyun-Kyoo, a researcher at KISTI, is "to improve communication and contacts with the North." The project, which has no formal input from North Korean researchers, will cost $55,000 for the first year.

The bulk of the North's research is defense-related, but Hahn Sun-Hwa, a KISTI senior researcher, says it also claims to do world-class work in chemistry and mathematics. A contingent of North Korean students has twice in recent years won an international "Go" tournament held in Japan, he notes.

Because North and South Koreans often use very different words for the same science, Hahn plans on building a North-South dictionary for the Web site. The content initially will be in Korean, but KISTI hopes to start posting English abstracts as soon as early next year.

Smallpox Lives Health officials have been debating for a decade whether to destroy or preserve the last remaining samples of smallpox—held in secure vaults in the United States and Russia. The U.S. government this week ended the dithering: It will save its stocks for research, says Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, who participated in Administration discussions.

Fauci says he's argued "for a couple of years that we should retain smallpox" for purely scientific reasons. "We need it to develop animal models of the disease, to conduct in vitro assays of new drug therapies and diagnostic tests, and to completely sequence various strains" for defense against potential variant forms, as well as a new vaccine. It was "verging on naïve," Fauci thinks, to assume—as a World Health Organization (WHO) plan for smallpox destruction did—that the only extant samples were those in official U.S. and Russian labs. He fears some Russian stocks may have fallen into "nefarious" hands.

The WHO's plan called for destruction of official smallpox samples by 2002. That agenda has now been nixed by U.S. bioterrorism concerns. Ironically, a chief designer of the defunct WHO plan is D.A. Henderson, a former smallpox fighter who recently became the top bioterrorism expert for the U.S. Department of Health and Human Services. Henderson could not be reached.