stein Observatory, the Hubble Telescope and the Very Large Telescope." Once it is completed at Cerra Paranal, the VLT will be the largest and most spectacular single facility in ground-based astronomy.

After screening more than a dozen outside candidates for the post of associate administrator for space science, NASA turned to a venerable insider to fill the slot. On 16 November, Dan Goldin, the space agency's administrator, named **Edward J. Weiler** to be the successor to Wesley Huntress Jr, who left the agency in late September to join the Carnegie Institution of Washington. Weiler, who has worked at NASA since 1978, is highly regarded in the space science community. For the past 12 years, he has been science director of the Office of Space Science's Astronomical Search for Origins and Planetary Systems, the directorate that sponsors studies of galactic and planetary formation and seeks scientific evidence of extraterrestrial life.

In his new post, Weiler is responsible for overall leadership of NASA's space science programs and projects, which aim to achieve a comprehensive understanding of the origin and evolution of the Solar System and the universe. Weiler also will continue to serve as program scientist for the Hubble Space Telescope, a position he has held since 1979, until a replacement is found.

An astrophysicist who earned a PhD in 1976 at Northwestern University, Weiler was a postdoc at Princeton University and later, at the NASA Goddard Space Flight Center in Greenbelt, Maryland, he became director of science operations for the Copernicus Orbiting Astronomical Observatory.

The National Science Foundation has chosen **Karl A. Erb**, senior science adviser to the agency's former director, Neal Lane, to head the Office of Polar Programs. As a member of NSF's senior management team, Erb acquired considerable familiarity with the agency's programs at the ends of the Earth and has been to Antarctica three times since joining the agency in 1993.

He represented NSF in the National Science and Technology Council review of the US Antarctic program, which resulted in the 1996 White House declaration on the continent's importance to the nation as a global ecological commons. Erb also coordinated the subsequent program review of Antarctica by the external Augustine Panel (named after its chairman, Norman Augustine, then chairman and CEO of Lockheed Martin Corp). His latest foray into the region (now in its summertime warmth) took place last month, when he led a team of govern-

WASHINGTON BRIEFINGS

House Speaker May Be Physics Asset When House Republicans picked J. Dennis Hastert to fill their leadership vacuum as Speaker on 6 January, it surprised many Washington watchers. Hastert, now in his seventh term, is an easygoing former high school history teacher and wrestling coach who represents an Illinois district with bedroom communities, fertile farmlands and Fermi National Accelerator Laboratory. His House colleagues consider him a consummate deal maker and without a whiff of scandal. Affable and accommodating, he was once given a teddy bear by Newt Gingrich of Georgia, who resigned as House Speaker after Republicans did so poorly in last November's elections. Hastert was chosen Speaker only days after Robert L. Livingston of Louisiana, who had been favored to replace Gingrich, shocked just about everyone with the public disclosure of marital infidelities and his announcement that he will leave the newly formed 106th Congress as soon as his home district elects his successor.

Hastert, in his new position, is just heartbeats away from the White House. Should President Clinton move out and Vice President Gore step aside for some improbable reason, Hastert would be in line to occupy the Oval Office. Although he is a political and social conservative, Hastert has not taken positions on many issues that are noticed in the press or on TV. So the news media covering his first public appearance after becoming House Speaker, at a school in a Chicago suburb, reported his remarks on education. He pledged to put education high on the congressional agenda—and to enact legislation on the subject with bipartisan support. "This is not a new passion for me," Hastert stated.

Hastert also has taken a stand on scientific research—at least the component featured in his district, at Fermilab. The lab's director, John Peoples, recalls that Hastert entered the House in 1987, the year that President Reagan approved construction of the Superconducting Super Collider and the Department of Energy (DOE) initiated an acrimonious site competition for the mammoth machine. A site adjacent to Fermilab was one of the eight contenders. Though he was a freshman in Congress, Hastert argued strongly for Fermilab. After a site in Texas was picked, Fermilab sought to upgrade its main injector in an effort to recapture US supremacy in high-energy physics from CERN in Switzerland, until the SSC could come on line in 2002. But each year the lab sought funds for the upgrade, the request was opposed by DOE. Worse yet, the lab's operating budget was also whittled (see PHYSICS TODAY, December 1991, page 53). "It was not the best time for Fermilab," Peoples remembers. "DOE seemed no longer interested in Fermilab's fate, and our future was in doubt. It was Denny Hastert who came to our rescue."

Once aware of the problem, Hastert recruited Bob Michel, the Illinois Republican who was then minority leader in the House, and together they rallied support from a bipartisan group of influential members of Congress. "DOE's attempts to kill the main injector project cold and perhaps Fermilab with it, were overruled," Peoples contends, and Hastert, "led the defense."

Not surprisingly, Peoples went to Washington on 6 January to watch Hastert sworn in as Speaker. "In some sense, I've been a physics mentor to Denny," Peoples says. "He's been a valuable asset to us and to high-energy physics in the country."

Moving Chairs in the House The fate of R&D budgets in the House will be in some different hands in the new 106th Congress. Of the 13 appropriations subcommittees, six will have new leaders. Because of their authority and influence over Federal spending, the 13 chairs are known as "cardinals."

Replacing Bob Livingston of Louisiana as chairman of the Appropriations Committee is C. W. Bill Young, a Florida Republican who headed the Defense subcommittee in the past two Congresses. Young is a military spending hawk and a tireless purveyor of pork, carved from Pentagon budgets and sent to universities in his district. A high school dropout from a Pennsylvania mining town, Young worked his way to success in the insurance business before entering politics. With his reelection last November, he is now in his 15th term. Young faces one of the House's toughest jobs: shepherding the 13 appropriations bills through Congress before the start of fiscal 2000, on 1 October. He has the backing of House Speaker Dennis Hastert, who has vowed to pass all appropriations bills by the August recess.

Young's successor at the top of the Defense subcommittee is Jerry Lewis of California. Lewis was the good-natured head of the appropriations subcommittee that ruled over the diverse

ment science administrators, including **Martha Krebs**, director of the Department of Energy's science office, and **Robert A. Eisenstein**, head of NSF's mathematical and physical sciences directorate. They were particularly curious about studies dealing with ozone monitoring and polar environmental conditions and were keen on knowing about the foundation's activities in astronomy and astrophysics.

As head of NSF's polar programs, Erb will oversee an annual budget of some $250 million. Among the office's research activities are SHEBA (an acronym for Surface Heat Budget in the Arctic), a yearlong international study of environmental conditions in the Arctic Ocean (see PHYSICS TODAY, November, page 17), and AMANDA (Antarctic Muon and Neutrino Detector Array).

Erb first worked at NSF in 1986 as a program manager in the physics division after spending 16 years at various institutions, including Yale University, Oak Ridge National Laboratory and the University of Pittsburgh. From 1989 to 1993, he was an associate director at the Office of Science and Technology Policy under two presidential science advisers, first D. Allan Bromley and then Jack Gibbons. In his position at OSTP, Erb monitored Federal R&D agencies involved in basic research in science and engineering.

On 6 January, President Clinton sent the Senate his nomination of **Carolyn L. Huntoon** to serve as assistant secretary for environmental management at the Department of Energy. Huntoon currently is executive in residence for program and project management at George Washington University's School of Business and Public Management. In this position, she conducts research on policy and management issues relating primarily to technology-based projects. If confirmed by the Senate, she will manage the evaluation and cleanup of DOE's inactive waste sites and facilities. This includes ensuring safe and effective waste removal and containment operations and coordinating the department's environmental restoration and related applied R&D programs.

After receiving her PhD in physiology from the Baylor College of Medicine in Houston, Texas, Huntoon joined NASA's Johnson Space Center, where, from 1968 to 1996, she served in several capacities—among these, head of endocrine and biochemistry laboratories, chief of biomedical laboratories, director of space and life sciences, and director of the entire space center. From 1996 to 1998, she represented NASA at the White House Office of Science and Technology Policy.

IRWIN GOODWIN ■

portfolio of veterans affairs, housing and urban development and such independent agencies as NASA, the National Science Foundation, the Environmental Protection Agency and the Office of Science and Technology Policy. He once called NASA "my favorite agency in my bill." Lewis, a graduate of the University of California, Los Angeles, also was a successful insurance broker before he turned to a political career.

Another new cardinal is Ron Packard of California, taking over from Joseph McDade of Pennsylvania, one of the "old bulls," who retired after 18 terms, as chairman of the energy and water subcommittee, which controls DOE budgets, among its many spending allocations. Packard is a graduate of the University of Oregon Dental School and practiced dentistry until 1982, when he won a seat in Congress as a write-in candidate, receiving a 37% plurality over several better-known rivals. One of his priorities has been to balance the government's financial books. Now that the Federal budget shows a hefty surplus, he will be able in his new post to indulge in another priority: dipping into the appropriations cookie jar for goodies in his district.

The House Science Committee continues to be chaired by F. James Sensenbrenner Jr of Wisconsin, but the chair of the basic science subcommittee is vacant, following the move of Charles W. (Chip) Pickering Jr of Mississippi to a potentially more rewarding seat on the Commerce Committee. The contenders to occupy the basic science chair are Roscoe G. Bartlett of Maryland and Vernon J. Ehlers of Michigan.

Bartlett, an engineer and physiologist with a PhD from the University of Maryland, holds 20 patents for respiratory support and safety devices that are used by pilots, astronauts and rescue workers. He is an unreconstructed conservative on issues ranging from abortion to welfare entitlements, views that are based on his strong religious beliefs (as a Seventh Day Adventist) and his emphasis on self-reliance and personal initiative.

Ehlers, who earned a PhD in physics from the University of California, Berkeley, was a loyal ally of Speaker Newt Gingrich. Gingrich had assigned him the job of setting up World Wide Web sites so that the House could be more user-friendly with constituents, and also asked Ehlers to prepare a wide-ranging report on improving US science policy. Ehlers delivered his 74-page document, "Toward a New National Science Policy," in September. Among the report's recommendations were to make Federal research funding "stable and substantial," maintain diversity in the government's research portfolio and promote "creative, groundbreaking research" to ensure US preeminence in world science. The son of a minister and a devout Christian himself (in the Christian Reformed Church), Ehlers is coauthor of several books that combine theology and science as guides to managing the environment. Among them is *Earthkeeping: Christian Stewardship of Natural Resources*.

IBM Tops Patent List For the sixth consecutive year, IBM Corp led the list of top ten patent recipients, according to the annual patents survey compiled by IFI/Plenum Data. IBM received 2682 US patents in 1998, about 750 more than the previous year and nearly 40% more than the runner-up, Canon Inc of Japan. In fact, six of the top ten were Japan's electronics giants, thus continuing the trend of recent years. South Korea's Samsung surged from 16th place in 1997 to sixth place last year.

Overall, the US Patent and Trademark Office granted 151 024 patents in 1998, a record high and 33% more than in 1997. The large increase is due almost entirely to patents related to the Internet, computers, pharmaceuticals and chemicals.

In IBM's case, the rise is based on redoubled efforts in the last three years to tap the company's vast research activities in software and Internet technology and to license these to other firms. "What you are seeing is IBM getting the lead out," said Nicholas Donfrio, the company's senior vice president for technology and manufacturing. "More than a third of the technologies represented by these patents already show up in products and solutions currently available from IBM." Its 1998 patent portfolio includes organic light-emitting diodes and silicon-germanium semiconductors.

After IBM and Canon, the other eight patent leaders, in descending order, were NEC, Motorola, Sony, Samsung, Fujitsu, Toshiba, Eastman Kodak and Hitachi. Together, these firms won some 50% more patents than were granted to the top ten in 1997.

IRWIN GOODWIN