fice released a report critical of the lab's security. Senator Charles Grassley (R-Iowa) triggered the security reviews at Sandia earlier this year when lab employees contacted him to complain about security problems. Grassley, coauthor of the 1989 Whistleblower Protection Act, was angered by the lax security at all three of the weapons labs and said they "should be locked up tight like at Fort Knox." To "criminals and spies, the labs must be like a candy store with the front door left wide open and nobody at the register," he said.

Security problems at Los Alamos cost John Browne his job as director late last year (see PHYSICS TODAY, February 2003, page 22). Security at Lawrence Livermore underwent a major reorganization in June.

Jim Dawson

News Notes

Risky missile defense. The Bush administration's decision to deploy the first phase of a ground-based missile defense system by October 2004 means some of the technology will be deployed with limited or no testing, according to a General Accounting Office (GAO) report. The hurry-up nature of missile defense deployment, the report said, could result in technical failures and increased costs.

The report, *Additional Knowledge Needed in Developing System for Intercepting Long-Range Missiles*, is most critical of the Missile Defense Agency (MDA) decision to adapt the existing Cobra Dane early warning radar in Alaska to be the key tracking radar for shooting down incoming missiles. Tracking missiles is more demanding than simply providing early warning of an attack, and a host of software changes to Cobra Dane are being developed without real-world testing, the report says. "If failures ensue," the Pentagon "may have to spend additional funds in an attempt to identify and correct problems by September 2004 or accept a less capable system," according to the report.

The GAO, the nonpartisan investigative arm of Congress, created the report at the request of Senator Daniel Akaka (D-Hawaii), a member of the Armed Services Committee. "If the radar does not work," he said, "the system will not be able to intercept incoming missiles. MDA has no plans to use the radar in an intercept test." MDA officials told GAO investigators they hope to test the radar by tracking "targets of opportunity"—foreign missiles that happen to come within the radar system's range. **JLD**

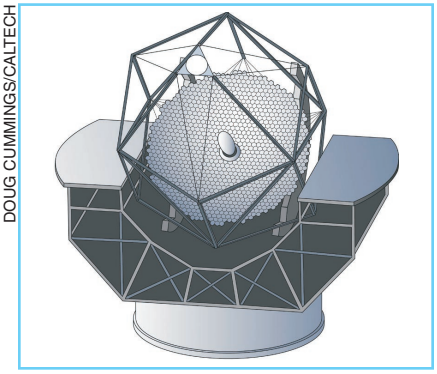
DHS research director. Lucent Technologies engineer and US Navy veteran David Bolka has been named as the first director of the Homeland Security Advanced Research Projects Agency (HSARPA), the Department of Homeland Security's equivalent of the Defense Department's Defense Advanced Research Projects Agency (DARPA). Bolka's job will involve "accelerating the prototyping and deployment of technologies that reduce homeland vulnerabilities," according to a DHS announcement.

"I am confident that his unique combination of skills will help build HSARPA and create a world-class scientific endeavor that will help protect our nation," said Charles McQueary, undersecretary for science and technology at the DHS. The new agency will conduct its activities primarily through contracts with universities and private industry, McQueary said in an earlier interview (see PHYSICS TODAY, July 2003, page 32).

Bolka has held several senior scientific positions at Lucent Technologies, including vice president for special projects. He was a major project manager for submarine combat systems and for the Naval Sea Systems Command. Bolka retired from the navy as a captain in 1986. He holds a PhD in engineering acoustics from the Pennsylvania State University. **JLD**

Moore for giant telescope. Plans for a 30-meter telescope (TMT) got a boost in late September, when the San Francisco-based Gordon and Betty Moore Foundation pledged $17.5 million for the project. The gift makes up Caltech's contribution to initial TMT planning; the University of California is trying to raise the same amount, and the Association of Universities for Research in Astronomy plans to pitch in $35 million (see PHYSICS TODAY, August 2003, page 22). The total construction cost is expected to be around $700 million.

"We hope this gift will leverage funding from the University of California,



DOUG CUMMINGS/CALTECH

the National Science Foundation, and the Canadian Foundation for Innovation," says Richard Ellis, a Caltech astronomer and leader in the drive to build a TMT. "There's nothing like funding to move a project ahead." **TF**

Element 110 named. Darmstadtium, Ds in shorthand, is how element 110 will now be known, the International Union of Pure and Applied Chemistry (IUPAC) agreed in August. The name recognizes Darmstadt, Germany, where, in 1994, the element was first created by a team led by physicist Sigurd Hofmann at the Laboratory for Heavy Ion Research (GSI; see PHYSICS TODAY, January 1995, page 19).

The heaviest element found in nature is uranium, which has 92 protons. Intense competition to artificially create heavier elements—chiefly by bombarding heavy nuclei with lighter nuclei—is ongoing at the GSI; at the Joint Institute for Nuclear Research in Dubna, Russia; at the RIKEN accelerator laboratory near Tokyo; and by a team of scientists at Lawrence Berkeley National Laboratory and the University of California, Berkeley. Six isotopes of darmstadtium have been created to date, with half-lives ranging from 180 microseconds for Ds-269 (whose nucleus consists of 110 protons and 159 neutrons) to 66 seconds for Ds-281 (110 protons and 171 neutrons).

Element 111 was also created at the GSI in 1994. It has been officially recognized by IUPAC, but not yet named. And, says Hofmann, elements 112–118 have been glimpsed in either Darmstadt or Dubna, but more data are needed before their creation can be confidently claimed. **TF**

Arecibo director. On 29 September, Sixto Gonzalez became director of the world's largest radio telescope, the 305-meter Arecibo Observatory in Puerto Rico. He was appointed by Cornell University's National Astronomy and Ionosphere Center, which manages the observatory.

TONY ACEVEDO/ARECIBO OBSERVATORY

Gonzalez

Gonzalez, the first Puerto Rico native at the helm, has been affiliated with the observatory for nearly 10 years and, for the past two years, served as its assistant director of space and atmospheric sciences. He succeeds Daniel Altschuler, who, after 12 years as director, now heads the observatory's new office for the public understanding of science, which was created to focus on outreach to the local Hispanic community.

Arecibo Observatory is celebrating its 40th anniversary this month. **TF** ■

WEB WATCH

http://www.aip.org/history/mod

Moments of Discovery is the latest online exhibit from AIP's Center for History of Physics. Two discoveries are featured: nuclear fission and pulsed optical emission from the Crab nebula. The Crab discovery is especially illuminating. On the night of the discovery, 15 January 1969, a tape recorder captured the conversation among the three discoverers, John Cocke, Michael Disney, and John McCallister. You can listen to those conversations at the exhibit.

http://stommel.tamu.edu/~baum/paleo/ocean

Oceanographer Steven Baum of Texas A&M University has compiled an online **Glossary of Physical Oceanography and Related Disciplines.** A work in progress, the glossary contains more than 4300 entries—from "AABW" (an abbreviation for "Antarctic Bottom Water") to "Zoppritz, Karl" (a pioneering German fluid dynamicist).

http://webbook.nist.gov

The NIST Chemistry WebBook is an extensive repository of physical chemistry data. Among its holdings are thermochemical data for over 7000 organic and small inorganic compounds, infrared spectra for over 16 000 compounds, mass spectra for over 15 000 compounds, and thermophysical data for 34 fluids.

To suggest topics or sites for Web Watch, please visit http://www.physicstoday.org/suggestwebwatch.html.

Compiled and edited by **Charles Day**