

Agreement moves ITER forward

The seven international partners in the multibillion dollar ITER fusion energy project initialed an agreement in late May to begin construction of the facility in Cadarache, France, early next year. After the US Congress and the governments of the other participating nations approve the preliminary agreement, a final pact is expected to be signed on 29 November, with the eight-year construction process beginning a few months later.

Raymond Orbach, the new Undersecretary for Science at the US Department of Energy, and representatives of the six other ITER partners—the European Union, Japan, China, India, South Korea, and Russia—initialed the agreement in Brussels, Belgium. Orbach, who has been a strong advocate for ITER since joining DOE as director of the Office of Science in 2002, was passionate in discussing the implications of the agreement, and the eventual importance of fusion energy.

Calling the signing “a momentous occasion in the history of science,” Orbach told journalists that the project is “so important and has such consequences that not to pursue it would be an outrage.” ITER, Orbach said, “has the potential to free the quickly growing global economy and population from the looming constraints of decreasing energy supplies and the unfortunate effects of environmental degradation.”

Soon after the agreement was initialed, DOE officials announced that University of Wisconsin physicist Raymond Fonck will be the chief scientist for the US portion of ITER.

The US dropped out of the ITER project in the late 1990s because of the high cost. In response, the project was scaled back, and Orbach eventually convinced the Bush administration to rejoin. Or-

bach listed ITER as the top priority project in the Office of Science’s 20-year facilities plan released in 2003 (see PHYSICS TODAY, January 2004, page 23).

Under the agreement, the US will provide \$1.1 billion for construction, with 80% of that in contributions of material. The US has also agreed to pay 13% of the operating costs, says Orbach, “a little bit more than some of the other partners, but we chose to do that because we want a say in the nature of the research and the outcome of the research.”

Jim Dawson

Chilean site chosen for LSST

Cerro Pachón, in northern Chile, beat out Mexico’s San Pedro Mártir as the favored site for the Large Synoptic Survey Telescope, project leaders announced in May. If construction proceeds on schedule, ground will be broken in 2009 for the 8.4-meter LSST and first light will be in 2012.

The LSST “goes wide, fast, and

C. CLAVER, NOAO/LSST



El Peñón, on Cerro Pachón in Chile, is the selected site for the Large Synoptic Survey Telescope.

deep,” says project director Anthony Tyson of the University of California, Davis. The telescope will scan the entire visible sky every three nights, detecting objects that change or move, such as supernovae, near-Earth asteroids down to 100 meters in diameter, and Kuiper belt objects. Other key areas of study will be dark matter and dark energy. For such studies, Tyson says, “you’d like to have knowledge of the Hubble constant as a function of redshift and of how dark matter is clumped over cosmic time. LSST has multiple probes of both.”

What makes the LSST unique, says Tyson, is its etendue, or throughput—the product of the telescope aperture and its field of view. “Ours is 320 m² deg²,” he says. A similar but smaller project, PanSTARRS, under construction by the US Air Force in Hawaii and seen by many as a precursor to the LSST but also as a potential rival for funding and early observations, has an etendue of about 13 m² deg². Other existing and planned telescopes have etendues ranging from

2 to 50 m² deg², Tyson says.

The price tag for the LSST is expected to be around \$300 million, including infrastructure, telescope, camera, software, and US-based data centers. That money is still being raised, mostly from US government agencies and private investors. So far, NASA is not pitching in, although the project would satisfy the agency’s congressional mandate to search for potentially Earth-threatening asteroids (see PHYSICS TODAY, January 2003, page 19).

Toni Feder

news notes

Ex-LANL scientist settles case.

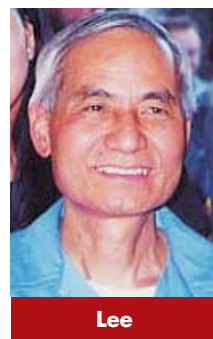
Wen Ho Lee, the Los Alamos National Laboratory physicist who in 1999 was accused by the FBI of spying for China (see PHYSICS TODAY, April 2000, page 53), has won a \$1.65 million settlement in his suit against the federal government.

Lee sued the government for leaking details to the media about his employment history, finances, travels, and polygraph tests. Although only the federal government was named as a defendant in the suit, the *New York Times*, the *Washington Post*, the *Los Angeles Times*, the Associated Press, and ABC News together are covering nearly half of the settlement costs. According to a statement by the five news organizations, their \$750 000 share will go directly to Lee. The \$895 000 from the government will cover Lee’s legal fees and taxes.

The news organizations became involved in the case because of their refusal to reveal who leaked them information about Lee. On 5 June, two days after the settlement was reached, the Supreme Court rejected the news organizations’ final appeal to keep their sources under wraps. The rejection is viewed by the organizations’ lawyers to be a warning not to expect favorable treatment in similar cases in the future.

In the run-up to his trial, Lee spent nine months in prison, largely in solitary confinement. The espionage charges against him were eventually dropped, but he did plead guilty to one count of mishandling classified data.

PKG



CECILIA CHANG

Lee

DOE



Representatives of the seven international partners in the ITER fusion energy project gathered in Brussels, Belgium, on 24 May to initial an agreement to begin construction of the facility.

at DOE. The new position, created as part of the Energy Policy Act of 2005, elevates Orbach to the same level as the other DOE undersecretaries and is expected to give science more visibility in the vast government agency (see PHYSICS TODAY, February 2006, page 23).

Orbach, who will continue as head of the Office of Science, told a Senate committee following his nomination by President Bush in March, "Creation of this position highlights the important role of science and scientific research at [DOE], and indeed in the American economy as a whole." Orbach, a theoretical physicist, told the senators that DOE will need to fund and perform "science that is world-class, science that is at the far frontier of human knowledge."

The science community has been pushing for the establishment of the undersecretary position since 2000, and former Office of Science director Mildred Dresselhaus said the high status that comes with the title will make it easier for Orbach to get things done within DOE. JLD

Deep space network fragile. NASA's deep space communications network is suffering from old age, years of deferred maintenance, and an ineffective management structure, all of which threaten its ability to handle the potential demands of President Bush's plan to send humans back to the Moon and to Mars. That is the conclusion of a May Government Accountability Office report that NASA officials largely agree with.

In addition to noting an "increasingly fragile" infrastructure that is "subject to breakdown at a time when demand is anticipated to increase," the report said the competing demands for communications time for old missions, such as the *Voyager* spacecraft launched in 1977, and new missions are straining the system. "Capacity limits constrain the amount of science data that can be returned from deep space by new missions that are added to [the network's] set of users," the report says.

The report recommends that NASA reorganize the network management to better integrate the communications system with agency-wide planning instead of the current mission-by-mission time allocation process.

The network consists of three sites—Goldstone, California; Madrid, Spain; and Canberra, Australia—each with a 70-meter antenna and several smaller antennas. The network is designed to communicate with spacecraft more than 1.2 million miles from Earth and supports 35 to 40 missions each year. JLD

UK research funding agencies. On 22 May, two UK funding agencies released a joint statement in support of their merging, a move suggested by the Treasury earlier this year. The government is expected to decide this summer whether to go ahead with the proposed merger of the Particle Physics and Astronomy Research Council (PPARC) and the Council for the Central Laboratory of the Research Councils (CCLRC), and to decide on the purview of the new agency.

The motivations for the proposed merger, according to government spokespeople, include positioning the UK to play a stronger role in the next generation of European and global projects and gaining clout with the business community, which could benefit technology transfer. Financial savings is not one of the motivations. Merging would aid in long-term strategic planning over a wide spectrum of scientific fields, says PPARC head Keith Mason. "If you have it all under one roof, it's easier to make decisions across the patch and to take advantage of synergies."

Although UK scientists widely support the merger, they want the individual grants currently under PPARC's auspices to stay in the new agency—for now called the Large Facilities Research Council—and not, as the government has suggested, moved to the Engineering and Physical Sciences Research Council. Also on the table is whether the new agency would incorporate nuclear physics and nuclear fusion, which are currently funded by EPSRC.

PPARC's annual budget is roughly £300 million (\$550 million), CCLRC's is £157 million, and nuclear physics and fusion grants currently at EPSRC total in the tens of million pounds.

The last major reorganization of UK research funding agencies was in 1993. TF

Historic observatory sale. As part of a land sale to private developers that still requires the nod of the local community, Yerkes Observatory would become an education and outreach center owned by the Village of Williams Bay, Wisconsin (see PHYSICS TODAY, November 2005, page 26). The University of Chicago announced the sale of its 109-year-old observatory on 7 June, with Don Randel, the university's president, saying that the plan "meets all three of our goals for Yerkes. It provides a secure funding stream to preserve [the observatory] as an outreach facility; it provides resources for future research in astronomy, and it proposes a high-quality and environmentally sensitive development."

The Mirbeau Company of Skaneateles, New York, is buying the property and will transfer the observatory and 30 acres to Williams Bay. On the remaining 48 acres, Mirbeau plans to build a retreat and about six dozen private homes. The sale proceeds of more than \$8 million will be used by Chicago's astronomy department. In addition, Mirbeau will contribute \$400 000 annually to support education and outreach at Yerkes, which will be run by a not-for-profit organization. TF ■

web watch

To suggest topics or sites for Web Watch, please visit <http://www.physicstoday.org/suggestwebwatch.html>. Compiled and edited by Charles Day

<http://iwaswondering.org>

Last year, the National Academies Press published the 10-book series *Women's Adventures in Science*. Aimed at middle-schoolers, the books seek to attract girls to science through the life and work of current women scientists. Now, much of the same material—and more—is available through **iWASwondering**, an interactive, multimedia website.



http://csee.lbl.gov/asteroid_impact

From the Lawrence Berkeley National Laboratory comes **Frank Asaro Asteroid Impacts: The Inside Story**, a detailed online account of chemist Frank Asaro's contributions to confirming one of the 20th century's most remarkable hypotheses—that a giant meteorite struck Earth and wiped out the dinosaurs.

<http://qwiki.caltech.edu>

A wiki is an online encyclopedia whose volunteer contributors cooperate to enhance and expand its entries. Barely a year old, **Qwiki** is devoted to all aspects of quantum science. Its curators, who work in Hideo Mabuchi's lab at Caltech, hope their burgeoning resource will prove useful to practicing scientists, "the people," as they put it, "who post content to the arXiv and quant-ph."