

has been revised, with the energy scaled up from 1 GeV to 2 GeV. The reason, says Einfeld, is that “the users of the Middle East region are asking for hard x-ray photons—it will go up to 20 keV.” Because of modifications to the design, the higher energy does not translate into a higher price, he adds.

And Herman Winick, who came up with the idea for SESAME in the first place, has hit on the idea of scrounging parts from other synchrotron sources. He’s starting at home, where next year Stanford University’s SPEAR ring will be dismantled in preparation for a major upgrade. “All equipment upgrades generate bone yards,” says Winick. “I’m making some progress in convincing people not to cannibalize.” The next step is for the SESAME council to send engineers and technicians to pack up the parts. The people for the job, says Winick, would be some of the roughly 20 young scientists from the Middle East who have been training in Europe to build and operate synchrotrons. “For about \$30 000 in expenses, they might get \$1 million in equipment. In many cases, the stuff is not so bad. And with SESAME, we have a lot of labor and not as much money. It also has symbolic value when we give to this peace project.”

Within the past year, Bharrain, Pakistan, and the United Arab Emirates joined SESAME. The project’s other members are Cyprus, Egypt, Greece, Iran, Israel, Jordan, Morocco, Oman, the Palestinian Authority, and Turkey. Armenia, the runner-up to host SESAME, has downgraded its participation to observer status so it can focus on a more recent domestic synchrotron initiative, CANDLE (see PHYSICS TODAY, June 2000, page 51, and June 2001, page 32). With those changes, SESAME now has 13 members. But membership will be revisited now that SESAME is under UNESCO’s auspices: For the project to gain legal status, six partners must ratify its new statutes and pay membership dues.

TONI FEDER

Lo to Lead NRAO

Fred Lo has been tapped for the top job at the National Radio Astronomy Observatory, according to a 20 June announcement by Associated Universities Inc, which runs NRAO for NSF. He will replace Paul Vanden Bout, who was director for more than 17 years and left on 1 June to oversee, on an interim basis, construction of the Atacama Large Millimeter

Array (ALMA) in Chile. Lo comes on board on 1 September; until then, W. Miller Goss is serving as acting director of NRAO.

Lo moves to NRAO from Taipei, Taiwan, where, since 1997, he has been director of the Academia Sinica’s Institute of Astronomy and



LO

Astrophysics (ASIAA). Among the projects he’s been involved with while there are the Sub-Millimeter Array (SMA), a collaboration on Mauna Kea, Hawaii, with the Smithsonian Institution, and the Array for Microwave Background Anisotropy, an interferometric array slated to be completed in 2004 that will measure the polarization of the cosmic microwave background. Before going to Taiwan, Lo spent more than a decade at the University of Illinois at Urbana-Champaign. His research interests include star formation, starbursts in near and distant galaxies, megamasers, and the determination of the structure of Sagittarius A*, a compact radio source at the center of the Milky Way.

As NRAO director, Lo will oversee the Very Large Array in Socorro, New Mexico, the Robert C. Byrd Green Bank Telescope in West Virginia, the far-flung Very Long Baseline Array, and North American participation in ALMA. “It’s a tremendous challenge and responsibility that I couldn’t refuse,” says Lo. “It’s also important that NRAO works with the university community to make sure that radio astronomy stays strong and attracts more students.”

SMA project scientist Paul Ho, of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, will replace Lo as director of the ASIAA.

TONI FEDER

Totsuka Tapped as KEK Chief

Yoji Totsuka will take the reins for a three-year term as director general of the High Energy Accelerator Research Organization (KEK) in Japan. On 1 April 2003, he will replace Hirotaka Sugawara, who plans to return to the University of Hawaii.

Totsuka received his PhD in physics from the University of Tokyo in 1972.

Currently the director of the Kamioka Observatory, which hosts Super-Kamiokande, the world’s largest neutrino detector, Totsuka has worked closely with KEK for years. Totsuka says that he accepted the position to help the next generation of physicists reach their potential. “I am honored to be chosen,” he says, “but not particularly pleased, because the job will be a tough one, and I will find little or no time to enjoy physics any more.”

KEK, originally established in 1971, was reorganized in 1997 to promote cooperation among researchers in fields related to accelerator physics. One of the two institutes that emerged from that reorganization, the Institute of Particle and Nuclear Study, is known for the Belle B-factory electron-positron experiment and K2K, a joint investigation into neutrino behavior with the Kamioka Observatory. K2K is picking up the pieces after an accident late last year in which its detectors at Super-Kamiokande imploded (see PHYSICS TODAY, January 2002, page 22). The second KEK research facility, the Institute of Materials Structure Science, specializes in chemical, biological, and physical research with synchrotron light sources. KEK is currently working with the Japan Atomic Energy Research Institute to build a \$1.3 billion high-intensity proton accelerator facility at Tokai, 130 km northeast of Tokyo.

PAUL GUINNESSY



TOTSUKA

KAMIOKA OBSERVATORY

NEWS NOTES

General Gordon to White House. Two years after he became the first administrator of the National Nuclear Security Administration, retired US Air Force General John Gordon has moved to the White House as a deputy assistant to President Bush to coordinate the federal government’s counteroffensive against terrorism. Gordon is replacing retired US Army General Wayne Downing, a hawk in the war on terrorism who reportedly became frustrated by his lack of influence in the administration. Gordon’s new title is national director and deputy national security adviser for combating terrorism.

“I am, of course, honored that the president has selected me for this

important position, but saddened that I must leave NNSA before the entire job is done," Gordon wrote in a 27 June departing message to NNSA employees. Gordon worked in the 1970s as a physicist at the Air Force Weapons Laboratory and at Sandia National Laboratories in Albuquerque, New Mexico. After working in a number of national security positions during his air force career, he became a deputy director of the Central Intelligence Agency in the late 1990s. Gordon moved from the CIA to NNSA in June 2000.

Department of Energy Secretary Spencer Abraham, in announcing Gordon's departure from NNSA, said he "launched an ambitious effort to revitalize the nuclear weapons complex and its infrastructure after a decade of decline. He has also ensured that the nation's nuclear weapons stockpile is safe and secure, that our nonproliferation programs are effective, and that we are continuing to meet the nuclear propulsion needs of the US Navy." —JLD

NASA on campus. This month, in a new partnership with universities, NASA is establishing seven University Research, Engineering, and Technology Institutes. Each URETI, consisting of three dozen or so researchers from as many as 11 universities, will get roughly \$3 million a year for five years. The Department of Defense may contribute to some of the institutes.

The URETIs will undertake research and educational activities in specific areas of long-term strategic interest to NASA. The areas are aerospace propulsion and power, led by the Georgia Institute of Technology; the intersection of bio-, nano-, and information technology, led by UCLA; nanoelectronics and computing, led by Purdue University; third-generation reusable launch vehicles, with two separate URETIs, led by the University of Florida, Gainesville, and the University of Maryland, College Park; and bio- and nanomaterials and structures for aerospace vehicles, again with two institutes, led by Princeton and Texas A&M universities.

The lifetime of the URETIs can be extended once, to a total of 10 years, and additional institutes will be selected every two or three years, says program architect Michael Reischman. The new institutes are loosely modeled on research centers that NASA set up in the late 1980s but that were phased out a few years later, he adds. "NASA sees the URETIs as a component of their overall plan to

reengage and reenergize the intellectual horsepower in the nation's academic community." —TF

Research reactor funds. Four university-led consortia have been awarded a total of \$5.5 million in the first year of five-year grants intended to improve campus nuclear research reactors and related educational programs and to counter a predicted shortage of nuclear engineers and scientists. The funding, from the Department of Energy's new Innovations in Nuclear Infrastructure and Education program, which commenced in July, is the most significant infusion of federal money to the nation's aging research reactors since they were built, many of them 40 or more years ago (see PHYSICS TODAY, April 2002, page 23).

The INIE awardees are consortia led by MIT; Pennsylvania State University; Oregon State University and the University of California at Davis; and Texas A&M University. DOE national laboratories are participating in several of the consortia. Three additional consortia are on a waiting list in case DOE scrapes together more money for the INIE program. —TF

Pendulum project. Can the pendulum enhance science education and literacy? That's the aim of the International Pendulum Project, launched this year by Michael Matthews, an education professor at the University

of New South Wales (UNSW) in Sydney, Australia.

The project focuses on using different aspects of the pendulum in developing curricula for all levels of science, math, technology, history, music, literature, and the interconnections among these fields. The project has initial funding of \$30 000 a year for three years from the Australian Research Council.

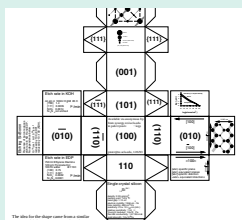
The pendulum project grew from Matthews's book, *Time for Science Education: How Teaching the History and Philosophy of Pendulum Motion Can Contribute to Science Literacy* (Kluwer Academic/Plenum, 2000). In the 17th century, Matthews writes, pendulums transformed the precision of marking time, which in turn transformed not only measurements in mechanics and astronomy, but also in navigation, mapping, work, religion, and social customs. On finishing the book, says Matthews, "I realized that it was just an introduction to the wider and deeper fields of pendulum study."

Among the project's planned activities are teacher-development workshops, a special pendulum issue of the journal *Science & Education* in 2004, and a pendulum conference this October at UNSW. For more information about the project, visit <http://www.arts.unsw.edu.au/pendulum/> or e-mail Matthews at m.matthews@unsw.edu.au. —TF ■

WEB WATCH

<http://www-bsac.eecs.berkeley.edu/~pister/crystal.pdf>
<http://www-bsac.eecs.berkeley.edu/~pister/guidelines>

Kris Pister of the University of California, Berkeley, has written down "all I know about silicon on one sheet of paper." The compact reference source takes the form of a **foldup crystal**, which is available as a PDF file on Pister's Web site. Pister, a member of Berkeley's department of electrical engineering and computer sciences, also shares his **philosophy and info for new students**, a set of guidelines on such topics as publishing, collaboration, and the purchase of lab equipment.



<http://www.pp.okstate.edu/ehs/manuals>

Compiled by Oklahoma State University's environmental health and safety department, **OSU Safety Manuals** address laboratory safety. Among the topics covered are lasers and what to do if your lab is threatened by a tornado.

<http://whitedwarf.org/education/vis>

White dwarf stars pulsate in modes that can be described with spherical harmonics. To see what these modes look like, Travis Metcalfe, a theoretical astrophysicist at the University of Aarhus in Denmark, has created **Visualizations**, a set of online animations of various spherical harmonics.



To suggest topics or sites for Web Watch, please e-mail us at ptwww@aip.org.

Compiled by CHARLES DAY