

cases paid for their flights to Egypt; the Egyptian organizers had booked and paid for hotel rooms for the Iranians; and Egypt did not issue visas to the Iranian contingent.

According to Hany Helal, Egypt's minister for higher education and scientific research, the lack of visas was the result of a misunderstanding and "there is no political issue behind it." The Iranians, he says, should have applied for their visas two or three months before the meeting. Had he known in time, Helal adds, "I could have helped push it [the visas] through."

But Sharif University of Technology's Reza Mansouri, one of Iran's two nonvoting representatives on the SESAME council, insists it was not a misunderstanding. "The office of Egyptian interests [in Tehran] said 30 to 40 days was what was needed. We applied 40 days in advance," he says.

Upset at Egypt for not issuing the visas and at the SESAME council for seeming to downplay the matter, Mansouri boycotted a SESAME council meeting in Jordan in December. Javad Rahighi, who heads the neutron physics group at the Atomic Energy Organization of Iran, attended the meeting as chair of the SESAME training committee but not in his role as a council representative. He adds, "This is not an issue we can leave under the carpet. We should make sure it will never happen again." The timing is especially sensitive, Rahighi says, because the Iranian parliament is preparing to vote on officially joining SESAME. "This issue puts a shadow over the whole thing. It would help if an Egyptian authority would come up with a clear explanation and an apology."

Schopper, for his part, says it's better for SESAME not to exaggerate this issue. "There are visa problems everywhere," he says. At its December meeting in Jordan, he adds, the council passed a resolution requiring that the organizers of future SESAME meetings provide information on obtaining visas for attending. SESAME's host country of Jordan, he notes, "is guaranteeing that everyone can enter."

Toni Feder

news notes

Extremely large telescope. The European Southern Observatory's governing council announced on 11 December that ESO would go forward with a final-design study for the European Extremely Large Telescope. With a

primary-mirror diameter of 42 m, the EELT would have about 20 times the light-gathering capacity of today's largest optical-infrared telescopes. The ESO council's decision follows a year-long conceptual-design effort.

The council's approval of a €57 million (\$74 million) budget for the final-design study makes it possible for construction to begin in about three years, assuming that the 12-nation ESO accepts the final design. The Czech Republic became ESO's 12th full member in January. The telescope's site should be chosen by 2008.

The EELT could be completed by 2017 at an estimated cost of €800 million. "Such an extraordinarily ambitious instrument requires a complete rethinking of how we make telescopes," says Catherine Cesarsky, ESO's director general. The primary mirror is envisaged as a mosaic of 906 hexagonal segments. Adaptive optics to compensate for atmospheric turbulence will be incorporated into the EELT's design from the start. The telescope's 4-m tertiary mirror will relay light to the adaptive-optics system's two 2.5-m mirrors, one of which will be backed by thousands of actuators that can distort its shape at kilohertz rates in response to turbulence.

The resulting image sharpness and sensitivity, at optical and infrared wavelengths, is expected to "revolutionize ground-based astronomy at all

distance scales," says Cesarsky. Nearby, for example, it will permit detailed studies of planets orbiting stars in our vicinity, and at cosmological distances it should let astronomers analyze the spectra of the very first generation of stars.

BMS

Mexico's millimeter telescope. On 22 November, the Large Millimeter Telescope was inaugurated by Mexico's outgoing president Vicente Fox.

Located 250 km east of Mexico City, at 4600 m atop Volcán Sierra Negra, the 50-m LMT is the world's largest single-dish millimeter-wave telescope. At this



Mexican President Vicente Fox inaugurates the Large Millimeter Telescope.

web watch

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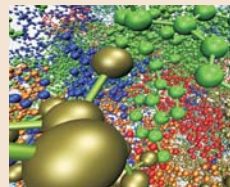
<http://www.ipy.org>

In 1879, the International Polar Commission, chaired by Georg von Neumayer and Karl Weyprecht, established 1882–83 as the first

International Polar Year. The third and latest IPY begins in March and will run through March 2009. True to its founders' vision, the new IPY will bring countries together to meet the cost and difficulty of exploring Earth's polar regions.



<http://www.envision.purdue.edu/4kstream/video.html>



Researchers at Purdue University have created a 10-gigabyte animation of a 90 000-atom cell structure from a bacterium—and then streamed the video through the high-speed National LambdaRail research network. The exercise foreshadows how scientists will be able to exchange rich, copious visual data. A clip from the video is available from Purdue's **Envision Center**.

<http://ep.espacenet.com>

In recent years, the world's inventors have submitted patent applications at a rate of about 1 million per year. More than 4 million patents are now in force worldwide. Most of that vast trove of human ingenuity and knowledge is available online through the **European Patent Office**, which provides a convenient search engine called **esp@cenet**.

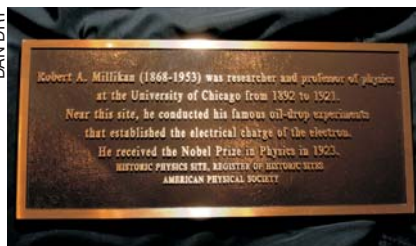


stage, the LMT can point and track, but to become fully functional, the reflector surface needs to be finished, the surface panels need to be aligned, and other subsystems need to be commissioned. "It will be a couple of years of fooling around before it's ready for scientific work," says Peter Schloerb of the University of Massachusetts at Amherst, Mexico's partner in the project. The aim is to start up in 2008, but the timing depends on raising roughly \$30 million to finish construction. So far, the telescope has cost about \$120 million, of which some \$40 million for hardware came from the US.

The LMT's wavelength range is 1-4 mm. One key area of research will be galaxy formation and evolution. Thanks to an array of bolometers in the focal plane, the telescope can map the sky quickly. "We should be able to point the telescope to any place on the sky and discover a new object in one second," says Schloerb. "The potential is to do mapping experiments and surveys and find interesting stuff" and then do high-resolution observations with ALMA, the Atacama Large Millimeter Array under construction in Chile. TF

Historic Chicago. Robert Millikan's oil drop experiment and other research he conducted at the University of Chicago have earned the university the designation of historic physics site. Millikan was awarded the Nobel Prize in 1923. On 30 November, the university became the 11th site to be thus honored by

DAN DRY



the American Physical Society (see PHYSICS TODAY, May 2005, page 35).

The historic physics site designation is "part of our broader efforts to reach the public with a positive message about physics," says Alan Chodos, associate executive officer of APS. TF

Schwinger Foundation. Physics research for which other sources of money are scant is the focus of the new Julian Schwinger Foundation. Schwinger, who shared the 1965 physics Nobel Prize, died in 1994. His

widow, Clarice Schwinger, set up the foundation according to his wishes and serves as its president.

Although the foundation will fund any area of physics research, priority will go to theoretical and experimental research on highly nonlinear processes giving rise to energy-concentrating phenomena—sonoluminescence is one example—which was of special interest to Schwinger. "We would like to help those people whose research is promising but not mainstream," says the University of North Carolina at Chapel Hill's Jack Ng, who studied under Schwinger and is the foundation's secretary. The foundation also supports workshops, summer schools, and the like. The first grant, awarded last fall, went to a conference on elementary particles, astrophysics, and cosmology.

Initially, grants will be up to \$25 000; this limit may eventually be lifted. TF ■



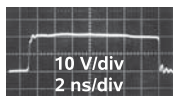
Schwinger

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