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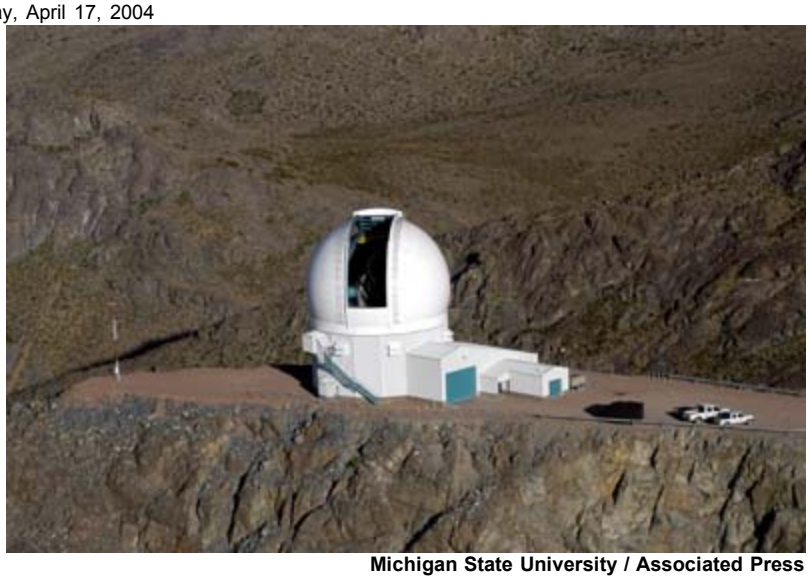
Saturday, April 17, 2004



Michigan State University / Associated Press

The Southern Astrophysical Research, or SOAR, Telescope, sits at 9,000 feet on the western edge of the Andes Mountains in Chile. The site offers astronomers extraordinary views of the Southern Hemisphere sky.

New telescope in Chili will be boon to MSU astronomers, visitors

By Kathy Barks Hoffman / Associated Press

LANSING -- A new observatory perched atop an 8,775-foot mountain in Chile will begin beaming images of the far reaches of the universe Saturday to Michigan State University.

The Southern Astrophysical Research Telescope will be linked directly to the East Lansing campus with a dedicated Internet line. Through computers, Michigan State astronomers will be able to direct the highly polished, 14-foot mirrored lens to look at supernovae that exploded millions of years ago and track

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stars that were around when the galaxies were assembling themselves 10 billion years ago.

"That gives us a picture of the universe from a very early age," said Wolfgang Bauer, chairman of the Department of Physics and Astronomy. "We're finding a lot of answers now to questions people haven't even really known how to ask. So this is really interesting."

Michigan State paid $6 million toward the $32 million telescope and also built the $1.6 million Spartan Infrared Camera, which will enable the telescope to capture images rivaling those captured by the Hubble Space Telescope.

The Spartan camera is a 250-pound collection of mirrors, wires and other equipment that rests in a large box, according to Michigan State officials. The camera's detectors can't function at room temperature and must be cooled by liquid nitrogen.

The SOAR telescope was built by a consortium made up of Michigan State, the University of North Carolina at Chapel Hill, the country of Brazil and the National Optical Astronomy Observatories. NOAO will operate the telescope atop Cerro Pachon near the community of La Serena. The nation of Chile also is a partner since it contributed the mountaintop.

The University of Michigan is part of a consortium that uses the twin 21-foot Magellan telescopes in Chile. Others in that consortium include the University of Arizona, the Harvard-Smithsonian Center for Astrophysics, the Massachusetts Institute of Technology and the Carnegie Observatories.

Michigan State scientists will be able to use the SOAR Telescope for 40 nights a year, while North Carolina will control 124 half-nights. The first images from the telescope were to be beamed Friday to the Morehead Planetarium and Science Center in Chapel Hill.

It took UNC 18 years to get the telescope built after a variety of partners, including the University of Colorado and Columbia University, bowed out. Michigan State became a partner in 2000.

"We jumped with this because it was exactly the kind of physics that we wanted to do," Bauer said. "I expect a big shot in the arm for our graduate program and undergraduate program."

Having access to their own telescope will be a huge help to professors

Michigan State University / Associated Press

The SOAR Telescope's primary mirror is 4.1 meters in diameter and 10 centimeters thick. It has "adaptive" optics that correct for both image motion and distortion due to atmospheric disturbances.

About the telescope

Facts about the Southern Astrophysical Research Telescope:

-- Sits atop 8,775-foot Cerro Pachon in the Andes Mountains near the community of La Serena, Chile.

-- Cost $32 million to build; Michigan State University's share was $6 million. The telescope will cost its owners $9 million to operate for 18 years.

-- Was built by a consortium made up of Michigan State, the University of North Carolina at Chapel Hill, the country of Brazil and the National Optical Astronomy Observatories. Chile also is a partner.

-- Will be dedicated at Michigan State during a 7 p.m. Saturday ceremony at the Biomedical and Physical Sciences Building. The Remote Control Observation Room also will be opened then, and the Michigan State-developed Spartan Infrared Camera will be on display.

Source: Michigan State University.

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doing research on the universe's early chemical composition, the nature of dark matter and why it appears the universe is expanding faster than before, Michigan State astronomy professor Timothy Beers said. Before, they had to get permission for limited use of a national telescope or fly to Chile.

"Being able to craft long-term programs knowing you will have access changes how you do your science," said Beers, who plans to use the telescope to examine the chemical makeup of stars that were around billions of years ago, but which are so far away their light is just now observable from Earth.

During Saturday's ceremonies at Michigan State, astronomers will dedicate the observation room that will collect data and images from the telescope. The room and its 16-by-5-foot screen will be visible through a large window in the Biomedical and Physical Sciences Building, so students and others passing by will "see astronomers at work and share in the excitement," Bauer said.

The Spartan Infrared Camera also will be on display Saturday. It's scheduled to be installed on the telescope in Chile later this year.

On the Net:

SOAR Telescope: http://www.pa.msu.edu/soarmsu/soar.html or http://www.soartelescope.org

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