

Giant Magellan telescope site selected

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The Giant Magellan Telescope (GMT) Consortium announces that the GMT will be constructed at Cerro Las Campanas, Chile. This location was selected for its high altitude, dry climate, dark skies, and unsurpassed seeing quality, as well as its access to the southern skies.

“This decision represents a critical step towards realizing our goal of building the premier next -generation astronomical observatory,” said Dr. Wendy Freedman, leader of the GMT Board and director of the Observatories of the Carnegie Institution, which operates Las Campanas.

“The Giant Magellan Telescope represents the dawn of a new age of astronomical exploration,” stated Dr. Charles Alcock, director of the Harvard-Smithsonian Center for Astrophysics. “As telescopes get larger, we are able to see fainter, farther, and with more clarity than ever before. We can only predict a fraction of the scientific discoveries that will be made using this enormous telescope and the new insights into the universe that we will gain.”

The Las Campanas Observatory is home to the twin Magellan Telescopes, the predecessors of the new instrument. “The GMT builds on the partners’ collective experience in constructing and operating world-class telescopes. Locating the telescope at a proven world-class, mountain-top site in Chile will maximize its productivity and cost effectiveness,” said Prof. Nicholas Suntzeff, head of the astronomy program at Texas A&M University. “Excellent science has come from Las Campanas for several decades; the superb astronomical quality of the site is a significant contributor to this success,” Freedman said.

Scheduled for completion in 2016, the Giant Magellan Telescope will be the first of a new generation of ground-based telescopes. Its large size will offer exceptional resolving power, producing images up to 10 times sharper than the Hubble Space Telescope. The GMT will be composed of seven 8.4-meter (27.5-foot) primary mirrors, six of which will be off-axis encircling the seventh to produce a telescope with an effective aperture of 24.5 meters (80 feet).

The first GMT mirror was cast from molten glass in July 2005 and is currently being polished at the University of Arizona's Steward Observatory Mirror Laboratory. When completed in early 2009, the final surface will be smooth to an accuracy of 1 millionth of an inch and will follow the precise optical prescription needed to produce the best images theoretically possible.

The Giant Magellan Telescope will help answer a number of compelling scientific questions faced by astronomers today. It will open new avenues of scientific exploration, including:

- Understanding the origin and evolution of planetary systems beyond our own;
- Witnessing the formation of stars, galaxies and black holes;
- Exploring the properties of dark matter and dark energy in the cosmos.

Detailed information about the design of the GMT and the science that it will perform is located at www.gmto.org/ .

Source: Carnegie Institution

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