



GMT PROJECT OFFICE

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For Immediate Release:

Cover, Spin and Bake for Twelve Weeks

On Thursday, July 16, a huge spinning oven, incongruously located under the bleachers at the University of Arizona football stadium, will be fired-up in preparation for the historic GMT Mirror Casting Event on July 23rd.

Tucson, AZ – Engineers and technicians working at the University of Arizona’s Steward Observatory Mirror Lab have completed the painstaking task of preparing a mold for the first of seven huge mirrors for the Giant Magellan Telescope (GMT) project. A special rotating oven, intended to melt twenty metric tons of glass, is expected to be fired-up later this week.

Scheduled for completion around 2016, the GMT will have seven 8.4 meter mirrors, arranged in a floral-pattern, giving the GMT the resolving power of a 24.5-meter primary mirror (80.4 feet), far larger than any other telescope ever built. “The GMT will produce infrared images 10 times sharper than the Hubble Space Telescope,” according to Dr. Matt Johns, GMT Project Manager and Associate Director of the Carnegie Observatories. “This is an exciting time, the development of the GMT is proceeding according to schedule,” according to Dr. Johns.

The gigantic mirror’s mold fabrication was completed last month. The furnace lid cone has been installed, and everything is go for “pre-fire” on June 16, according to Steve Miller, Mirror Lab Manager. “The auxiliary power trench construction is complete, and the backup generators arrived yesterday,” says Mr. Miller.

The oven will be heated until the glass in the mold is brought to a temperature of 2150° Fahrenheit. On Saturday, July 23rd, the liquefied glass should begin to flow between the 1,750 hexagonal columns within the mold. This will ultimately result in the production of a mirror with a “honeycomb” structure, far lighter than a solid glass mirror. The oven will be rotated at a speed of 4.8 times a minute, giving the mirror a parabolic shape. After a carefully controlled cooling process, the mirror will later be polished with extraordinary accuracy and coated with a layer of reflective aluminum only 100 nanometers thick.

The Giant Magellan Telescope is being developed by a consortium of institutions recognized for their experience and innovation in the fields of astronomy and large telescope development. Participants include the Carnegie Institution of Washington, Harvard University, Massachusetts Institute of Technology, the Smithsonian Astrophysical Observatory, Texas A&M University, the University of Arizona, the University of Michigan, and the University of Texas at Austin.

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