



VERITAS

*Very Energetic Radiation Imaging Telescope Array System*

*veritas.sao.arizona.edu*

For release: April 16, 2007.  
[Contact information at end]

## **New High-Energy Telescope Array Marks “First Light”**

Mt. Hopkins, Ariz. -- VERITAS, a new array for very-high-energy gamma-ray astronomy, has just begun observations of gamma-ray air showers at the Smithsonian Institution's Fred Lawrence Whipple Observatory in southern Arizona, U.S.A. A "first light" celebration will mark the event on April 28, 2007, at Whipple Observatory. (See <http://veritas.sao.arizona.edu> for details).

The Very Energetic Radiation Telescope Array System is a set of large optical reflectors used for the ground-based detection of high-energy gamma rays by observing light from secondary showers of particles generated in the atmosphere. “This technique was pioneered at the Whipple Observatory where the initial work produced the first detections of galactic and extragalactic sources at these high energies,” says Smithsonian astrophysicist Trevor C. Weekes.

The new observatory consists of four 12-meter-diameter reflectors coupled to fast cameras containing arrays of hundreds of photomultiplier tubes which are digitized at a rate of 500 MHz. These sensitive instruments have an energy threshold for gamma rays of ~100 GeV and can readily identify sources with an intensity of ~1 photon per minute with an observation lasting an hour. “This makes it the most sensitive instrument in the northern hemisphere at these energies,” says Prof. Simon P. Swordy, VERITAS spokesperson.

The telescopes are located at a temporary site in the Coronado National Forest where they will be operated for two years in an engineering mode while a permanent site is acquired. During these two years a number of key science projects will be undertaken, as well as collaborative observations with NASA's next generation gamma-ray space telescope, GLAST, scheduled for launch later this year.

Work on two of the four Key Science Projects of VERITAS, the study of Active Galactic Nuclei and of Supernovae Remnants has already begun to produce significant results. Observations of Active Galactic Nuclei aim to answer the questions on how supermassive black holes accrete matter and accelerate particles into highly relativistic jets. Such observations can indirectly help in the determination of how much electromagnetic radiation the Universe has produced since recombination created the cosmic microwave background radiation through the interaction of the gamma rays with infra-red photons given off from star formation.

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Other observations of supernovae and pulsar wind nebulae aim to test theories on the origin of cosmic rays, charged particles that "rain" from space, the source of which remains mysterious one hundred years after their initial discovery.

During the spring/summer of 2007, VERITAS will begin a third Key Science Project, a sky survey of the Cygnus region of our Galaxy.

VERITAS is a multi-national collaboration of groups from the U.S.A., U.K., Ireland, and Canada. The \$20 million project is funded in the U.S.A. by the U.S. Department of Energy, the National Science Foundation and the Smithsonian Institution.

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*The VERITAS View of the TeV Gamma-ray Universe*  
Trevor Weekes, Harvard-Smithsonian Center for Astrophysics

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## *First Light Fiesta*

Fred Lawrence Whipple Observatory

Amado, Arizona



*Very  
Energetic  
Radiation  
Imaging  
Telescope  
Array  
System*

Science Workshop  
First Light Ceremony  
Open House

Friday  
Saturday  
Sunday

April 27 - 29, 2007

<http://veritas.sao.arizona.edu/>