STATUS OF THE MILAGRO GAMMA RAY OBSERVATORY

GREG SULLIVAN FOR THE MILAGRO COLLABORATION
University of Maryland

The Milagro Gamma Ray Observatory, located at an altitude of 8,600 feet in the Jemez Mountains of New Mexico, is the world\'s first large-area water Cherenkov detector capable of continuous monitoring of the entire sky at gamma-ray energies near 1 TeV. It is uniquely capable of searching for transient sources of VHE gamma-ray emission. The core of the detector, a 60m x 80m x 8m pond instrumented with 723 PMTs in two layers, has been completed and is operational. Initial studies including searches for gamma-ray sources are ongoing, and preliminary results are available. The final stage of construction is underway. We are deploying ~170 auxiliary \"outrigger\" water Cherenkov detectors in an area of ~ 40,000 square-meters surrounding the pond, which will significantly enhance our ability to reject background and more accurately reconstruct the gamma-ray direction and energy. In addition, we are lowering the energy threshold of the detector by using custom processing to enable real-time intelligent triggering. The lower energy threshold will significantly increase our sensitivity to gamma-ray sources, and in particular to sources of cosmological origin, such as GRBs, where the higher energy gamma-rays have sizable attenuation due to the interaction with the intergalactic infra-red light