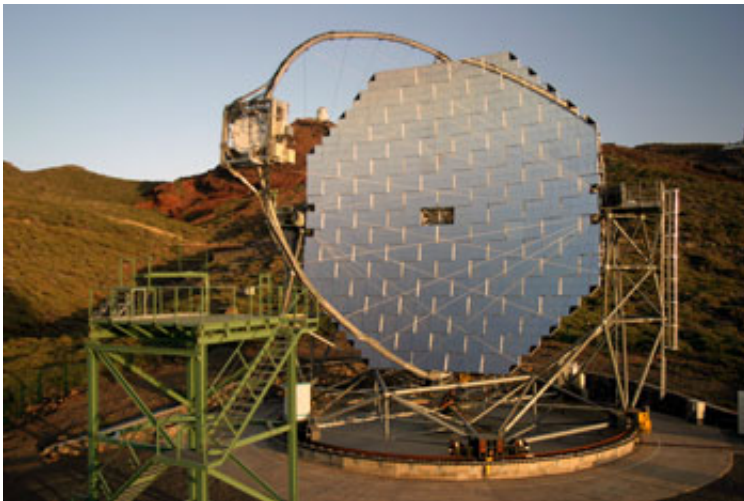


Tracking the Riddle of Cosmic Gamma Rays

August 23 2005

First simultaneous observation of a gamma-ray burst in the X-ray and in the very high energy gamma ray band.



For the first time a gamma-ray burst (GRB) has been observed simultaneously in the X-ray and in the very high energy gamma ray band. The MAGIC telescope at La Palma, Canary Islands, observed the enigmatic source GRB050713A, a long duration gamma-ray burst, only 40 seconds after the explosion, at photon energies above 175 GeV.

The puzzling nature of gamma-ray bursts is still not fully understood. Sometimes, GRBs are accompanied by photons 10 billion times more energetic than visible light, lasting typically less than a few tens of seconds. They are among the most distant and luminous sources in the Universe.

The capability of rapid tracking of the MAGIC telescope allowed the operators to start observing the source 20 seconds after the alert was given by the Swift satellite, which is in the Gamma ray bursts Coordinates Network, when the burst was still active in the X-ray range.

The first look at the MAGIC data did not reveal strong gamma ray emissions above 175GeV. The flux limit derived at very high energies by MAGIC is extremely low, 2-3 orders of magnitude lower than the extrapolation from lower energies. A detailed analysis is in progress. The upper limit for the flux of energetic gamma rays is consistent with the expected flux of a GRB at high red-shift, strongly attenuated by cosmological pair production. These observations were reported at the 29th International Cosmic Ray Conference which was held on August 3-10 in Pune, India

With its 240 square meters surface, MAGIC is the largest telescope in the world dedicated to the detection of gamma rays. It is managed by a collaboration of 17 institutes from Germany, Italy, Spain, Switzerland, Finland, USA, Poland, Bulgaria and Armenia. The Gamma ray bursts Coordinates Network, managed by NASA, can distribute locations of GRBs detected by spacecrafts (Swift, Hete, Integral, Ipn, etc.) and reports of follow-up observations made by ground-based and space-based optical, radio, and x-ray observers.

Source: Max Planck Institute of Physics

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