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100 TeV Observations of the Cygnus Region by CASA-MIA

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Abstract content

The Cygnus arm of the galaxy contains a large number of energetic astrophysical sources, including numerous supernova remnants (SNRs), pulsar wind nebulae (PWN) and X-ray binary systems. Indeed, in terms of potential galactic sources needed to explain the origin of the high energy cosmic rays, Cygnus is the promising region accessible to northern hemisphere observatories using the air shower or atmospheric Cherenkov techniques. There have been a number of TeV gamma-ray source detections in Cygnus, including the unidentified source TeV 2032+4130, first detected by HEGRA, and three sources very recently reported by Milagro: MGRO J1909+06, MGRO J2019+37, and MGRO J2033+42. This paper reports results from observations of the Cygnus region by the CASA-MIA detector, operating between 1990 and 1997. Consisting of a large air shower array of 1089 detectors covering an area 0.25 km^2 and an underground muon array of 1024 counters, CASA-MIA was the largest and most sensitive experiment built to study sources of 100 TeV radiation. Results will be presented based on an extended survey of Cygnus, covering the important regions of interest to very high energy astronomy.

If this papers is presented for a collaboration, please specify the collaboration

CASA-MIA

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivio, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 2 (OG part 1), pages 771-774

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