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# Blind Search for Transient Bursts of Very High Energy Gamma-Rays Using Milagro

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## Abstract content

Milagro is a water-Cherenkov detector capable of observing air showers produced by gamma- rays. The wide field of view (˜2 sr) and high duty cycle (>90%) of Milagro make it ideal for searching for transient very high energy emission. We will report on the results of a blind search of the Milagro data for very high energy ranging from 160 µs to 6 minutes. While this analysis is primarily aimed at detecting -ray bursts (GRBs), it could also be sensitive to other phenomena like primordial black-hole evaporation and soft gamma -ray repeaters. No trigger from another instrument is required, instead the entire reconstructed data set is systematically searched in time, space and emission duration. Four years of Milagro data are searched, which corresponds to 2920 sr days of exposure. While the peak sensitivity of Milagro is above 1 TeV, the detector has substantial effective area at lower energies (˜50 mˆ2 at 100 GeV, ˜2500 mˆ2 at 1 TeV).

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

Milagro

## Summary

## Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 1135-1138

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