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Search for Short Bursts of Gamma Rays with SGARFACE

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Abstract content

The Short GAMMA Ray Front Air Cherenkov Experiment is designed to search for bursts of gamma rays above 200 MeV lasting from 60 nanoseconds to longer than 20 microseconds. The custom-designed trigger and data-acquisition system of SGARFACE piggy-backs on the existing Whipple 10m telescope. The experiment has operated for more than 3 years during which time about 1.2 million events were recorded. The majority of events originate from cosmic-ray showers from which we see, both, Cherenkov emission and fluorescence light. Rejection of background events is achieved through timing and imaging information available for each event. Potential sources of bursts of gamma rays are evaporation of primordial black holes within about 240 pc and gamma-ray emission accompanying giant radio pulses. Results are presented on the search for evaporation of primordial black holes and gamma-ray emission coincident with giant pulses from the Crab Nebula.

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

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. 4 (HE part 1), pages 783-786

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