

Abstract Submitted  
for the APR09 Meeting of  
The American Physical Society

**Search with VERITAS and SGARFACE for bursts of gamma-rays with energy greater than 100 MeV and with duration shorter than 15  $\mu$ s** MARTIN SCHROEDTER, Iowa State University, VERITAS COLLABORATION — Bursts of gamma rays above 100 MeV and with duration less than 15  $\mu$ s might be produced by pulsars (Lyutikov, 2007), by explosions of primordial black holes (Hawking, 1974), or via some as-yet undiscovered mechanism, for example during gamma-ray bursts. Bursts of nearly simultaneous gamma-rays above 100 MeV can be detected by their Cherenkov radiation using ground-based telescopes. SGARFACE piggy-backs on the Whipple 10 m imaging air-Cherenkov telescope to search for bursts of gamma-rays with duration less than 15  $\mu$ s. To eliminate cosmic-ray background events that mimic the expected image parameters of bursts, we search for correlations with VERITAS. VERITAS is the most sensitive array of air-Cherenkov telescopes in the northern hemisphere and is located about 7 km distant from the SGARFACE experiment. The fluence sensitivity of this search is 0.2 (0.01) photons/m<sup>2</sup> for 1 (10) GeV gamma-rays during a 100 ns burst. About 80 hours of observations have been taken with both instruments pointed at the same source in the sky. We present results of the search for bursts produced by the Crab pulsar, by GRBs, and by the explosion of primordial black holes.

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Date submitted: 09 Jan 2009

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