

Abstract Submitted
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Observations of recent flares of the blazar 1ES1959+650 with VERITAS YUYANG ZHOU, MARCOS SANTANDER, Columbia Univ, VERITAS COLLABORATION — VERITAS (Very Energetic Radiation Imaging Telescope Array System) is a an array of imaging atmospheric Cherenkov telescopes that carries out an extensive observation program of the gamma-ray sky at energies above 0.1 TeV. Blazars, active galactic nuclei powered by supermassive black holes, are gamma-ray sources of major interest. The relativistic jets they emit are among the most energetic phenomena in the universe and constitute a significant amount of study in high energy astrophysics. In particular, the blazar 1ES 1959+650 ($z=0.048$) has garnered special attention due to its emission of an orphan flare in 2002. An orphan flare is an extremely bright emission in gamma rays that is not coupled to X-rays. This phenomenon is incompatible with our current model of gamma-ray production, the self-synchrotron Compton (SSC) process. This study aims to characterize recent TeV flares of this source by analyzing the time variability of its light curve and spectrum and comparing these findings to observations made in other wavelengths. We hope to determine if these recent flares have also been orphan in nature, put an upper limit on the size of the emission region, and understand the nature of the gamma-ray emission in the source.

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