

Abstract Submitted  
for the APR16 Meeting of  
The American Physical Society

**VHE Observations of TeV Gamma-Ray Binaries by VERITAS**

PAYEL KAR, Univ of Utah, VERITAS COLLABORATION<sup>1</sup> — Among many High Mass X-ray Binary (HMXB) systems, only a few exhibit TeV gamma-ray emission. Contemporaneous multi-wavelength observations of these sources are crucial for understanding their astrophysical properties. LS I +61 303 and HESS J0632+057 are two such TeV Binaries which have been observed by VERITAS and its multiwavelength partners over years. As previously seen at X-ray wavelengths, a TeV flux enhancement for HESS J0632+057 near orbital phase 0.75 has now been seen for the first time by VERITAS. This was found using updated analysis techniques implemented on the entire 200 hour data set spanning December 2006 to January 2015. From October 2014 to November 2014, LS I +61 303 exhibited its brightest flare ever observed. The flare provided evidence for TeV flux correlations with the emission at X-ray wavelengths. Previous flares of this system observed by VERITAS (2011-2012) had no such correlations. Studies made with multiwavelength observations facilitate our understanding of the gamma ray emission models from these HMXB systems. The results for the above two sources will be presented, along with other new results from VERITAS, improving our knowledge of this sparsely populated class of sources.

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Date submitted: 10 Jan 2016

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