

Long-term VERITAS observations of LS I +61° 303 and a multi-waveband perspective

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We present multi-waveband studies of the TeV gamma-ray binary, LS I +61° 303. LS I +61° 303 displays variable emission from radio to TeV, modulated with the orbital period of 26.5 days, and with a spectral energy distribution peaking at MeV-GeV energies. The imaging atmospheric Cherenkov telescope array, VERITAS, has been observing this binary since November 2006 and has collected a rich dataset spanning over a decade. In this work, we use 174 hours of VERITAS data, complemented by observations from instruments working at lower energies, Fermi-LAT and Swift-XRT. Contemporaneous observations with these datasets are used to probe the correlations between the three wavebands. Also, to study the broadband emission from this source, these simultaneous data are used to generate spectral energy distributions during the orbital phase bin of maximum TeV emission (0.6-0.8). The implications of the correlation study and possible broadband emission scenarios will be discussed in this work.

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