

Discovery of an orbital period in HESS J1832-093

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Unlike in supernova remnants or pulsar-wind nebulae, the characterization of high-energy and very-high-energy emission in binary systems allows the study of particle acceleration in shocks under periodically varying conditions. However, less than ten massive stars with non-accreting neutron star companions have been found to radiate most of their electromagnetic emission in gamma-rays. Therefore, each discovery of a gamma-ray binary provides new insights into these processes and allows us to distinguish between individual properties and general characteristics of the overall population.

Here, we present the discovery of an orbital period from the TeV source HESS J1832-093 using Swift-XRT and Fermi-LAT data (Martí-Devesa and Reimer 2020), allowing the identification of the 9th gamma-ray binary. This new binary resembles the system HESS J0632+057, providing evidence of a sub-population of binaries that display a notoriously faint GeV component.

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