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A Pulsar Wind Nebula Origin for Luminous TeV Source HESS J1640-465

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TeV gamma-rays indicate the presence of extremely high-energy particles. While many discrete TeV sources have been identified in the Galactic plane, the origin of these particles is often unclear. This is especially true for HESS J1640-465, among the most luminous TeV sources in the Milky Way, which is coincident with both a radio supernova remnant and an energetic X-ray pulsar and pulsar wind nebula (PWN). In this talk, I will present the results of a recent *Chandra* observation of this source, which indicates the PWN is considerably larger and more X-ray luminous than previously thought, and fit to its broadband spectral energy diagram assuming a PWN origin for the observed X-ray and gamma-ray emission, which constrains both the spectrum of particles accelerated in this source and the birth properties of the central neutron star. These results are important for determining both the origin of the gamma-rays detected from this source, and how the production of the highest energy leptons in the galaxy.

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