

Observations of Shell-Type Supernova Remnants with VERITAS

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Shell-type supernova remnants (SNRs) accelerate particles at the shock front between the expanding remnant and the swept-up interstellar medium. If these particles include protons and nuclei, very-high-energy gamma-ray emission may result from the decay of pions produced in interactions between cosmic rays and the local interstellar medium. For SNRs that are interacting with a nearby molecular cloud, such as IC 443, the enhanced matter density provides a target medium that can amplify the gamma-ray emission. IC 443 also contains the pulsar wind nebula (PWN) CXOU J061705.3+222127. PWNe are the most plentiful galactic sources of very-high-energy gamma rays, which are produced in the shock formed at the collision of the pulsar wind with the ambient medium.

VERITAS is an array of four 12-m telescopes dedicated to gamma-ray astronomy in the energy band above 100 GeV. Located on Mt. Hopkins in southern Arizona, VERITAS operated during the 2006-2007 season in 2-, 3-, and 4-telescope observation modes. In this talk, results from three-telescope observations of the composite supernova remnant IC 443 during the 2006-2007 season are discussed.