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Searching for TeV emission from Galactic PeVatrons with VERITAS

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Galactic PeVatrons are astrophysical sources accelerating particles up to a few PeV ($\sim 10^{15}$ eV). The primary identification of both electron and proton PeVatrons is gamma-ray radiation at ultra-high energies (UHE, $E > 100$ TeV). Recently, LHAASO detected 14 steady gamma-ray sources with photon energies above 100 TeV and up to 1.4 PeV. Most of these sources contain possible source associations, such as supernova remnants, pulsar wind nebulae, and stellar clusters. However, two sources are without any source association. Therefore, multiwavelength observations are required to identify the PeVatrons responsible for the UHE gamma rays, understand the source morphology and association, and shed light on the emission processes. Here, we will present the status of VERITAS observations of the PeVatron candidates identified by LHAASO and also discuss the VERITAS PeVatron search in general.

Collaboration name

VERITAS Collaboration

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