

TeV and Optical Observations of the Be/pulsar binary 1A0535+262 during the 2020 giant outburst

Friday 16 July 2021 13:18 (12 minutes)

1A 0535+262 is a Be X-ray binary pulsar and one of the only galactic pulsar systems to show radio jet emission. Characterizing the very high energy emission (VHE, >100 GeV) in these extreme microquasars is critical to understanding their contribution to the origin of galactic cosmic rays. The 2020 giant outburst of this system, where X-ray fluxes exceeded 12 Crab, marked a rare opportunity to investigate the gamma-ray and rapid optical variability of these transient systems while in such an extreme state. This month of activity marked one of the brightest flares ever measured in this system. VERITAS's developing optical capabilities in tandem with the ability to measure TeV gamma rays allowed for a unique campaign to be undertaken. VERITAS's observations of this system during the outburst will be presented in the context of observations at lower energies and previous observations of this system by imaging atmospheric Cherenkov telescopes.

Keywords

binaries; acceleration of particles; gamma rays

Collaboration

VERITAS

other Collaboration

Subcategory

Experimental Results

Primary authors: LUNDY, Matthew (McGill University); FOR THE VERITAS COLLABORATION

Presenter: LUNDY, Matthew (McGill University)

Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect