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Detection of very-high-energy gamma rays from RS Ophiuchi by the prototype Large-Sized Telescope for the Cherenkov Telescope Array

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The Cherenkov Telescope Array (CTA) will be the next-generation ground-based gamma-ray observatory, and will achieve unprecedented sensitivity in the energy range between 20 GeV and 300 TeV. The Large-Sized Telescopes (LSTs) provide the best sensitivity in the lowest part of the CTA energy range. The prototype LST (LST-1) for CTA was inaugurated in 2018, on La Palma, the northern site of CTA. LST-1 is currently finishing its commissioning phase and starting scientific observations. During its commissioning, LST-1 has observed various sources, including transient phenomena. Among them, LST-1 performed observations of the outburst of RS Ophiuchi, a recurrent nova in the Galaxy, in August 2021. The currently operating gamma-ray telescopes have reported the detection of very-high-energy gamma rays from the burst, which are the first reports of detection of very-high-energy gamma-ray emission from a nova. Our analysis of the LST-1 observations of RS Ophiuchi shows that LST-1 also achieved the detection of the nova. We will present the status of our analysis of the LST-1 observations of RS Ophiuchi.

Collaboration name

Cherenkov Telescope Array

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