

High-energy Gamma-Ray Activity from V404 Cygni Detected by AGILE during the 2015 June Outburst

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Abstract

© 2017. The American Astronomical Society. All rights reserved. The AGILE satellite detected transient high-energy γ -ray emission from the X-ray binary V404 Cygni, during the 2015 June outburst observed in radio, optical, X-ray, and soft γ -ray frequencies. The activity was observed by AGILE in the 50-400 MeV energy band, between 2015 June 24 UT 06:00:00 and 2015 June 26 UT 06:00:00 (MJD 57197.25-57199.25), with a detection significance of $\sim 4.3\sigma$. The γ -ray detection, consistent with a contemporaneous observation by Fermi-LAT, is correlated with a bright flare observed at radio and hard X-ray frequencies, and with a strong enhancement of the 511 keV line emission, possibly indicating plasmoid ejections in a lepton-dominated transient jet. The AGILE observations of this binary system are compatible with a microquasar scenario in which transient jets are responsible for the high-energy γ -ray emission.

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Keywords

gamma rays: stars, stars: black holes, stars: jets, X-rays: binaries

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