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The Bright γ-ray Flare of 3C 279 in 2015 June: AGILE Detection and Multifrequency Follow-up Observations

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Abstract

© 2018. The American Astronomical Society. All rights reserved.. We report the AGILE detection and the results of the multifrequency follow-up observations of a bright γ-ray flare of the blazar 3C 279 in 2015 June. We use AGILE and Fermi gamma-ray data, together with Swift X-ray andoptical-ultraviolet data, and ground-based GASP-WEBT optical observations, including polarization information, to study the source variability and the overall spectral energy distribution during the γ-ray flare. The γ-ray flaring data, compared with as yet unpublished simultaneous optical data that will allow constraints on the big blue bump disk luminosity, show very high Compton dominance values of ~100, with the ratio of γ-ray to optical emission rising by a factor of three in a few hours. The multiwavelength behavior of the source during the flare challenges one-zone leptonic theoretical models. The new observations during the 2015 June flare are also compared with already published data and nonsimultaneous historical 3C 279 archival data.

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Keywords

galaxies: active, gamma rays: galaxies, polarization, quasars: individual (3C 279), radiation mechanisms: non-thermal, X-rays: general

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