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Optical, X-, Gamma-ray flare of the FSRQ PKS 2032+107

ATel #7588; **Luigi Pacciani (INAF-IAPS)**
on **4 Jun 2015; 11:00 UT**

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Subjects: Optical, Ultra-Violet, X-ray, Gamma Ray, >GeV

Referred to by ATel #: [8043](#), [8274](#)

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We detected a gamma-ray flare from the FSRQ PKS 2032+107 ($z=0.601$), triggering on FERMI-LAT data at $E > 10$ GeV with $TS \sim 46$, from 2015-05-23 to 2015-06-02, following the prescription of Pacciani et al. 2014, ApJ, 790, 45. The gamma-ray spectrum changed from flat at the beginning of activity phase, to soft. The gamma-ray flux, integrated for one day (starting from 2015-06-01 20:11:15) was $(316 \pm 34)E^{-8}$ ph cm $^{-2}$ s $^{-1}$, photon index 2.30 ± 0.19 , $TS \sim 196$ ($E > 0.1$ GeV), to be compared with the catalog flux of $4.2E^{-8}$ ph cm $^{-2}$ s $^{-1}$ reported in the 3rd Fermi-LAT point-source catalog. The FERMI-LAT revealed gamma-ray emission up to ~ 49 GeV during the flat phase, and up to 11 GeV during the soft and brighter phase.

The source has been detected in high gamma-ray state also on April 2015 (ATel#[7453](#), ATel#[7457](#)).

The Swift Follow-up revealed the source in high state in optical and X-ray. The preliminary Swift-UVOT photometry on 2015-06-03 is:

$$V = 17.74 \pm 0.09$$

$$B = 18.70 \pm 0.08$$

$$U = 18.49 \pm 0.09$$

$$UVW1 = 19.2 \pm 0.1$$

$$UVM2 = 19.9 \pm 0.2$$

$$UVW2 = 20.4 \pm 0.2$$

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The optical/uv flux was ~50% brighter at the beginning of Swift follow-up (on 2015-05-28).

Magnitudes are in the UVOT photometric system (Poole et al. 2008, MNRAS, 383, 627) and have not been corrected for Galactic extinction.

The simultaneous Swift-XRT observation gives a counting rate of 0.083 ± 0.005 cps, a photon index 1.24 ± 0.18 , an unabsorbed flux of $(5.8 \pm 0.5) \times 10^{-12}$ erg/cm²/s which is ~3 times brighter than previously reported on 2015 April 28 (ATEL#7460). We encourage further multi-wavelength observations. We thank the Swift team and Swift Observatory Duty Scientist for rapidly scheduling our observations.

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