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Optical, X-, Gamma-ray flare of the FSRQ PKS 1441+25

ATel #7402; **Luigi Pacciani (INAF-IAPS)**
on **16 Apr 2015; 12:08 UT**

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

Referred to by ATel #: [7416](#), [7417](#), [7429](#), [7433](#)

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We detected a gamma-ray flare from the FSRQ PKS 1441+25 ($z=0.939$), triggering on FERMI-LAT data at $E > 10$ GeV with $TS \sim 44$, from 2015-03-21 to 2015-04-15, following the prescription of Pacciani et al. 2014, ApJ, 790, 45. The gamma-ray flux was $(38 \pm 3) \times 10^{-8}$ ph cm $^{-2}$ s $^{-1}$, photon index 1.93 ± 0.07 , $TS \sim 760$ ($E > 0.1$ GeV), to be compared with the catalog flux of 1.3×10^{-8} ph cm $^{-2}$ s $^{-1}$ reported in the 3rd Fermi-LAT point-source catalog. The FERMI-LAT revealed gamma-ray emission up to 33 GeV. The source has been detected in high gamma-ray state also on January 2015 (ATEL#[6878](#)). The Swift Follow-up revealed the source in high state in optical and X-ray. The preliminary Swift-UVOT photometry on 2015-04-15 is:

$$V = 16.79 \pm 0.06$$

$$B = 17.01 \pm 0.03$$

$$U = 16.21 \pm 0.02$$

$$UVW1 = 16.36 \pm 0.03$$

$$UVM2 > 18.4$$

$UVW2 = 16.59 \pm 0.03$ which is ~ 4 times brighter than the optical flux on 2015 January 5th and 28th (swift obsid 00040618005, 00040618003, see also ATEL#[6895](#), ATEL#[6923](#)). Magnitudes are in the UVOT photometric system (Poole et al. 2008, MNRAS, 383, 627) and have not been corrected for Galactic extinction. We verified the optical photometry using SDSS J144357.93+250051.0 as a reference. The simultaneous Swift-XRT observation gives a counting rate of 0.109 ± 0.006 cps (to be compared with 0.045 ± 0.004 cps of the brightest state on 28th January 2015, Swift obsid


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00040618005) and an unabsorbed flux of $(5.3 \pm 0.5) \times 10^{-12}$ erg cm⁻² s⁻¹ (0.3-10 keV). 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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