



Publication Year	2015
Acceptance in OA @INAF	2020-05-14T14:32:55Z
Title	ATel 7783: Optical/UV, High Energy Gamma-ray activity from the FSRQ PKS 1502+106
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Handle	http://hdl.handle.net/20.500.12386/24826
Journal	The Astronomer's Telegram
Number	7783

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Optical/UV, High Energy Gamma-ray activity from the FSRQ PKS 1502+106

ATel #7783; **Luigi Pacciani (INAF-IAPS)**
on **10 Jul 2015; 15:57 UT**

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

Referred to by ATel #: [7801](#), [7804](#)

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We asked a Swift ToO campaign on the FSRQ PKS 1502+106 ($z=1.83853$), triggered by prolonged High Energy activity detected with FERMI-LAT. The HE trigger detected activity at $E > 10$ GeV with $TS \sim 153$, from 2015-06-17 to 2015-07-10, following the prescription of Pacciani et al. 2014, ApJ, 790, 45. The flux integrated on the whole period is $(96 \pm 4) E^{-8}$ ph cm $^{-2}$ s $^{-1}$ ($E > 0.1$ GeV). The gamma-ray flux, integrated for one day (starting from 2015-07-06 23:17:09) was $(89 \pm 13) E^{-8}$ ph cm $^{-2}$ s $^{-1}$, photon index 1.82 ± 0.14 , $TS \sim 268$ ($E > 0.1$ GeV). The FERMI-LAT revealed gamma-ray emission up to ~ 37 GeV.

The source has been already detected in high gamma-ray state from the end of may 2015 (ATel#[7592](#)).

The Swift Follow-up revealed the source in high state in optical/UV. The preliminary Swift-UVOT photometry on 2015-07-08 is:

$$V = 16.49 \pm 0.07$$

$$B = 16.88 \pm 0.05$$

$$U = 16.30 \pm 0.05$$

$$UVW1 = 16.59 \pm 0.06$$

$$UVM2 = 16.63 \pm 0.03$$

$$UVW2 = 16.84 \pm 0.05$$

Magnitudes are in the UVOT photometric system (Poole et al. 2008, MNRAS,

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383, 627) and have not been corrected for Galactic extinction.

The optical/uv flux level is comparable with the brightest uvot detected state for the source on 2008-08-08.

The simultaneous Swift-XRT observation gives a counting rate of 0.083 ± 0.005 cps, a photon index 1.62 ± 0.25 (90% c.l.), an unabsorbed flux of $(1.4 \pm 0.10 \pm 0.24) \times 10^{-12}$ erg/cm²/s.

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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