Brightening of MAXI J1621-501 as seen with Swift/XRT

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ATel #10969; ***N. Gorgone, G. Younes, C. Kouveliotou (GWU), J. Kennea (Penn State), A. van der Horst (GWU), R. Wijers (U Amsterdam), D. Hartmann (Clemson U) report on behalf of the Swift Galactic Plane Survey Legacy team:***
*on **14 Nov 2017; 15:45 UT***
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Subjects: X-ray, Neutron Star, Transient

Referred to by ATel #: 11067

We observed the field centered on RA, DEC= 16h 20m 47.7s, -50d 01m 22.9s on 10/26/2017 as part of our ongoing Deep Swift Galactic Plane Survey Legacy project (Kouveliotou + 2016), with Swift/XRT in pc mode. The new transient source, MAXI J1621-501, resides within this field, as first reported in ATel #10869 (Hashimoto+) with follow up in ATels 10874 (Bahramian+) and 10876 (Pessev). Our observation (Swift obsid 00087355002) started at 2017-10-26 07:25:09 UT and ended at 2017-10-26 07:34:53 UT with a total exposure of 567s.

We fit the source spectrum (0.5-10 keV; corrected for pileup and background subtracted) using two models: an absorbed power law (PL) and a disk blackbody (diskbb). For the first model, we find an unabsorbed flux of F(0.5-10keV) = 1.43e-08 ergs/cm^2/s (corresponding to ~41 cts/s in Swift/XRT in the same band). This fit resulted in Chi Sq=1.30 for 72 degrees of freedom with fit parameters (90% confidence regions): N_H = (6.0+/- 0.3)*10^22 cm^-2 and power law index = 2.3+/- 0.1.

For the diskbb model we find an unabsorbed flux F(0.5-10keV) = 6.72e-09 ergs/cm^2/s with Chi Sq= 1.4 for 69 degrees of freedom. Fit parameters are: N_H = (4.5 +/- 0.2)*10^22 cm^-2 and Tin = 2.0+/- 0.1 keV.

In both cases, we note that the source flux has increased by a factor of ~6, 4 for the PL and diskbb models, respectively. This occurred over a timeframe of ~ 7 days between the first XRT observation reported by Bahramian+ and our observation, indicating that the source is brightening significantly. We also note a slight spectral softening in both models tested. Unfortunately, due to solar constraints, most X-ray telescopes cannot follow up the source until about January 2018. We, therefore, strongly encourage radio follow up observations.

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