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

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

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

Credential Certification: Jamie A. Kennea (kennea@astro.psu.edu)

Subjects: X-ray, Neutron Star, Transient

Referred to by ATel #: [11067](#)

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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 $F(0.5-10\text{keV}) = 1.43\text{e-}08$ ergs/cm²/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): $N_H = (6.0\pm 0.3)\times 10^{22}$ cm⁻² and power law index = 2.3 ± 0.1 .

For the diskbb model we find an unabsorbed flux $F(0.5-10\text{keV}) = 6.72\text{e-}09$ ergs/cm²/s with Chi Sq= 1.4 for 69 degrees of freedom. Fit parameters are: $N_H = (4.5 \pm 0.2)\times 10^{22}$ cm⁻² and $T_{\text{in}} = 2.0\pm 0.1$ 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.

Related

- 11317 [Identification of AX J1620.1-5002 with MAXI J1621-501](#)
- 11272 [MAXI J1621-501 distance inferred from type-I X-ray bursts detected by JEM-X](#)
- 11252 [INTEGRAL detection of X-ray transient source AX J1620.1-5002](#)
- 11067 [Detection of Type-I X-ray bursts from MAXI J1621-501](#)
- [10969 Brightening of MAXI J1621-501 as seen with Swift/XRT](#)
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