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Swift/XRT confirmation of activity from H 1658-298, no detection of MAXI J1327-627

ATel #7957; [A. Bahramian](#), [C. O. Heinke \(Alberta\)](#), [R. Wijnands \(Amsterdam\)](#)
on 26 Aug 2015; 21:22 UT
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Subjects: X-ray, Binary, Neutron Star, Transient

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We report our follow up Swift observations of reported enhanced activity by MAXI from tentative sources MAXI J1327-627 and MAXI J1702-301 (ATel #7946).

MAXI reported enhanced activity from the direction of H 1658-298 (or MXB 1659-298) on 2015, August 21st (ATel #7943). This was later confirmed using INTEGRAL observations (ATel #7946). We observed this region with Swift/XRT in PC mode on August 25th. H 1658-298 is clearly detected in our observation. Performing XRTCentroid gives the coordinates of this source as RA = 17:02:06.50 and Dec = -29:56:40.86 (with radial uncertainty of 4 arcsec). This is consistent with the published coordinates of H 1658-298 (Wijnands et al. 2003, ApJ, 594, 952).

H 1658-298 is an eclipsing X-ray transient which has exhibited type-I X-ray bursts in the past (Lewin et al. 1976, IAU Circ. 2994, Cominsky & Wood 1984, ApJ, 283, 765). Due to heavy pile-up in our observation, we extracted a spectrum following the Swift/XRT pile up thread (<http://www.swift.ac.uk/analysis/xrt/pileup.php>). We fit the spectrum with an absorbed power-law, assuming Wilms et al. (2000, ApJ, 542, 914) abundances. This resulted in an acceptable fit with reduced χ^2 of 0.7167 for 78 d.o.f. We find $N_H = 4.1(+/-0.7)e^{21} \text{ cm}^{-2}$, photon index of 1.7 (+/-0.1) and an unabsorbed flux of $5.8(+/-0.3)e^{-10} \text{ erg/s/cm}^2$ in 0.5-10 keV band, implying a luminosity (for a 10 kpc distance, e.g. Oosterbroek et al. 2001, A&A, 376, 532) of $7e^{36} \text{ erg/s}$.

To compare hydrogen column density with previous studies, we also performed a similar fit assuming Anders et al. 1989 (GeCoA, 53, 197) abundances and we found $N_H = 3.3(+/-0.5)e^{21} \text{ cm}^{-2}$. This is higher than measured in quiescence by Cackett et al. (2008, ApJ, 687, L87), but consistent with suggested variations of N_H observed in later observations (Cackett et al. 2013 ApJ, 774, 131). We also looked for flares, type-I X-ray bursts and dips in the XRT/PC lightcurve, but did not find any.

We also observed the vicinity of MAXI J1327-627 with Swift/XRT. Due to large uncertainties in position of the initial detection (~ 20 arcmin around RA = 13:27:29, Dec=-62:47:39), we performed a 4-tile set of 500 second observations to cover the error circle (Obs.IDs: 34006-9). We found no sources in this region down to an X-ray flux (unabsorbed, assuming photon index of 1.7, $N_H=1e^{22}$) of $2e^{-12} \text{ erg/s/cm}^2$ in 0.5-10 keV band. It is unclear whether the MAXI J1327-627 detection was a very short outburst, a spurious detection, or produced by another, more distant source.

We thank the Swift team for rapidly scheduling our observations.

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