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### Continuing outburst from H 1658-298

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## Continuing outburst from H 1658-298

ATel #8699; *A. Bahramian, C. O. Heinke (Alberta), R. Wijnands (Amsterdam), N. Degenaar (Cambridge)**on 15 Feb 2016; 23:21 UT**Credential Certification: Arash Bahramian (bahramia@ualberta.ca)*

Subjects: X-ray, Neutron Star, Transient

H 1658-298 is an eclipsing transient neutron star X-ray binary with a history of long (>~years) outbursts. MAXI detected a new outburst from this source on August 21st, 2015 (ATel #7943). We monitored this source with Swift/XRT until it entered Swift Sun constraint on October 24th, 2015 (ATel #8046). We have now resumed our monitoring of this source since it left the Sun constraint on January 24th, 2016.

We observed H 1658-298 on Jan. 28th, Feb 2nd and Feb. 11th with Swift/XRT (for 170, 970 and 590 seconds respectively), with the first observation in PC mode and the rest in WT mode. H 1658-298 is known to show dips, flares and eclipses, however investigating the lightcurves from these observations, we found no evidence of rapid variability on a timescale of seconds/minutes.

We extracted a spectrum from each observation and performed spectral fitting in XSpec. Fitting the spectra with absorbed powerlaw and absorbed disk blackbody models, we found that the absorbed powerlaw model provides a better fit, with a reduced chi-squared of 0.8, compared to 1.6 for a disk blackbody fit, for 89 d.o.f.

H 1658-298 showed an unabsorbed 0.5-10 keV flux between  $1.5e-10$  and  $2.2e-10$  erg/s/cm<sup>2</sup> on Jan 28th and Feb. 11th, with an increased flux  $4.6e-10$  erg/s/cm<sup>2</sup> on Feb 2nd. These variable fluxes are consistent with previous observations of the source in October 2015.

Assuming the absorbed powerlaw model, we found no evidence of variation in  $N_H$  between observations, with an average value of  $5.5(\pm 0.4)e^{21}$  cm<sup>-2</sup>. However we found suggestive evidence of spectral hardening on Feb. 2nd (when the flux had increased by a factor of ~2). While observations performed on Jan. 28th and Feb. 11th showed a consistent photon index of  $2.3(\pm 0.1)$ , the observation on Feb. 2nd showed a photon index of  $1.9(\pm 0.1)$ .

Further Swift/XRT observations of this source have been planned. We thank the Swift team for scheduling our observations.

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