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The Galactic center transient Swift J174535.5-285921 has returned to quiescence

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The Galactic center transient Swift J174535.5-285921 has returned to quiescence

ATel #3508; *N. Degenaar, R. Wijnands (UvA), J. A. Kennea (PSU) and N. Gehrels (GSFC)*

on 25 Jul 2011; 11:55 UT

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Subjects: X-ray, Binary, Black Hole, Neutron Star, Transient

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We report on continued Swift monitoring observations of the Galactic center, covering the field of the new transient X-ray source Swift J174535.5-285921 (ATel [#3472](#), [#3476](#), [#3481](#)). After the first detection on 2011 July 3 (ATel [#3472](#)), the source was detected with the X-ray telescope (XRT) on July 6, 8 and 9 at count rates of $\sim(2-5)E-2$ counts s⁻¹. Swift J174535.5-285921 is no longer detected in subsequent observations carried out between July 15-17, yielding a count rate upper limit of $\sim 5E-3$ counts s⁻¹. This suggests that the source returned to quiescence after an X-ray outburst that had a duration between 7-15 days. During continuing observations carried out on July 21, an excess of photons appears at the source position, corresponding to a count rate of $\sim 1E-2$ counts s⁻¹, which might indicate some residual activity. On July 24, however, there is again no sign of X-ray activity from Swift J174535.5-285921.

We utilized the tools described in Evans et al. (2009) to extract a summed X-ray spectrum of Swift J174535.5-285921 during its active phase (using total exposure time of ~ 4.1 ks). The XRT data can be described by an absorbed powerlaw with an index of 1.4 ± 1.0 and a hydrogen column density of $(5.7 \pm 5.0)E22$ cm⁻². The average 2-10 keV absorbed and unabsorbed source fluxes measured between 2011 July 3-9 are $(8.7 \pm 1.6)E-12$ and $(1.2 \pm 0.4)E-11$ erg cm⁻² s⁻¹, respectively. For an assumed source distance of 8 kpc, the latter implies an average 2-10 keV outburst luminosity of $\sim 9E34$ erg s⁻¹. Using these spectral parameters and a distance of 8 kpc, we estimate an upper limit on the 2-10 keV source luminosity of $< 6E33$ erg s⁻¹ between July 15-17 (for an accumulated exposure time of ~ 2.5 ks). The tentative weak detection during the 1.0-ks exposure of July 21 would imply a 2-10 keV source luminosity of $\sim 1E34$ erg s⁻¹.

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