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Swift/XRT discovers a new X-ray transient near the Galactic center: Swift J174535.5-285921

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Swift/XRT discovers a new X-ray transient near the Galactic center: Swift J174535.5-285921

ATel #3472; *N. Degenaar, R. Wijnands (UvA), J. A. Kennea (PSU) and N. Gehrels (GSFC)*

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Monitoring observations of the Galactic center performed with Swift's X-ray Telescope (XRT) reveal a transient X-ray source located $\sim 1.3'$ NE of Sgr A*. This object is clearly detected during a 1.0-ks photon counting (PC) mode observation obtained on 2011 July 3, but not in the proceeding 1.0-ks observation performed on 2011 June 30, nor in any previous XRT observations of this region carried out between 2006 and 2011 (Degenaar & Wijnands 2009, A&A 495, 547; 2010, A&A 524, 69). There is no X-ray transient known at this position, although the Swift error circle contains several weak X-ray sources from the Chandra catalogue of Munro et al. (2009, ApJS 181, 110).

The XRT coordinates of the new X-ray transient are R.A. = 17:45:36.00 and Dec. = -28:59:27.9, with an uncertainty of 3.8". The XRT-UVOT enhanced position is:

R.A. (J2000) = 17:45:35.50 (266.39793 deg)

DEC (J2000) = -28:59:21.5 (-28.98931 deg)

with a 90% confidence error of 3.3". Position enhancement is described by Goad et al. (2007, A&A 476, 1401) and Evans et al. (2009, MNRAS 397, 1177).

The new X-ray source, which we designate Swift J174535.5-285921, is detected at an XRT count rate of ~ 0.05 counts s⁻¹. The PC-mode spectrum can be described by a simple absorbed powerlaw model with a photon index of 2.1 \pm 1.0 and a hydrogen column density of (9.0 \pm 5.0)E22 cm⁻². The resulting absorbed and unabsorbed fluxes in the 2-10 keV energy range are ~ 9.6 E-12 and 1.9E-11 erg cm⁻² s⁻¹, respectively. For a

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distance of 8 kpc, the latter would translate into a 2-10 keV luminosity of $\sim 1.5E35$ erg s⁻¹.

Swift monitoring observations of the Galactic center are continuing. The reported analysis was performed utilizing the tools described in Evans et al. (2009).

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