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Beri, A.; Wijnands, R.; Russell, T.; Degenaar, N.; van den Eijnden, J.; Gandhi, P.; Paice, J.A.; Altamirano, D.; Armas Padilla, M.

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Swift Observation during the 2019 outburst of Swift J1357.2-0933

ATel #12816; *Aru Beri (IISER Mohali), Rudy Wijnands, T. Russell, Nathalie Degenaar, J. van den Eijnden (U. Amsterdam), Poshak Gandhi, J. A. Paice, Diego Altamirano (U. Southampton), M. Armas Padilla (Instituto de Astrofísica de Canarias)*

on 29 May 2019; 12:58 UT

Credential Certification: *Aru Beri (aru.beri8@gmail.com)*

Subjects: X-ray, Black Hole, Transient

Referred to by ATel #: [12821](#)

The Galactic black-hole candidate Swift J1357.2-0933 has been reported to be in a new outburst by the Zwicky Transient Factory (ZTF; Bellm et al 2019, PASP 131, 018002). Where optical monitoring (ATel #[12796](#)) suggests the source was in outburst at least as early as 2019 March 21.

On 2019 May 23 the NICER X-ray telescope detected Swift J1357.2-0933 with a 0.3-10 keV flux of 1.1×10^{-11} erg/s/cm² (Atel #[12801](#)). In addition, flaring activity was reported from the source.

The Swift X-ray telescope observed Swift J1357.2-0933 on 2019 May 27. Swift/XRT observed for ~ 1.5 ks in Windowed Timing mode. The target was detected, with an average source count rate of ~ 0.07 c/s (0.5-10 keV) in the WT data.

These data were fit using an absorbed*power-law model and using W-statistics (background subtracted Cash statistics; Wachter et al. 1979). Fixing the N H to 1.2×10^{20} /cm² (Armas Padilla et al. 2013), we measure a power-law index of 1.61 ± 0.4 and an unabsorbed 0.5-10 keV flux of $(7.13 \pm 0.02) \times 10^{-12}$ erg/s/cm². This flux translates to an X-ray luminosity of L_X (0.5-10 keV) = 2.1×10^{34} (D/5)² erg/s.

The source was also detected with Swift/UVOT at the following magnitudes in the AB system: UVW2 = 15.64 +/- 0.04 UVM2 = 15.56 +/- 0.04, (not corrected for extinction).

Further Swift observations are planned.

Acknowledgement: We thank the Swift team members for scheduling the ToO observation.

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`rrutledge@astronomerstelegam.org`

`dfox@astronomerstelegam.org`

`mansi@astronomerstelegam.org`