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

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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 1.1e-11 erg/s/cm^2 (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 1.2x10^20/cm^2 (Armas Padilla et al. 2013), we measure a power-law index of 1.61+/-0.4 and an unabsorbed 0.5-10keV flux of (7.13+/-0.02)x 10^{-12} erg/s/cm^2. This flux translates to an X-ray luminosity of L_X (0.5-10 keV)= 2.1x10^{34} (D/5)^2 erg/s.

The source was also detected with Swift/UVOT at the following magnitudes in the AB system: UBVW2 = 15.64 +/- 0.04 UVM2 = 15.56 +/- 0.04, (not corrected for extinction).

Further Swift observations are planned.

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Optical/NIR counterpart from GROND

Swift/BAT reports the detection of a new transient source Swift J1357.2-0933