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We report on a radio non-detection of the newly discovered accreting neutron star transient and X-ray pulsar Swift J0243.6+6124 (Kennea et al., ATel #10809). Following its discovery, we performed Director's Discretionary Time observations of this source with the Karl G. Jansky Very Large Array (VLA).

We observed Swift J0243.6+6124 on 10 October 2017 from 05:11 UT to 06:10 UT (MJD 58036.230 +/- 0.014) at 6 and 22 GHz, with bandwidths of 4 and 8 GHz, respectively. The VLA was in B configuration during the observation. We observed 3C48 and J0244+6228 as primary and secondary calibrators, respectively. Following standard procedures, we used the Common Astronomy Software Applications package (CASA v4.7.2, McMullin et al. 2017, ASPC, 376, 127) to calibrate and image the data. We used Briggs weighting with a robustness of zero to balance sensitivity and resolution.

We do not detect any significant radio emission from the reported Swift position of Swift J0243.6+6124 (Kennea et al., ATel #10809) in either band. By measuring the RMS over the source position, we place 3-sigma upper limits on the flux density of 27 uJy/beam at 6 GHz and 33 uJy/beam at 22 GHz. Given the source's Galactic coordinates, we estimate corresponding luminosity limits (νL_ν) to these flux densities of 1.1E28 $(d/7.5\ kpc)^2$ erg/s and 4.9E28 $(d/7.5\ kpc)^2$ erg/s, respectively, by assuming the source lies at the edge of the Outer Arm. However, other probable distances of the source would correspond to the Perseus Arm, which is at about 2 to 3 kpc in this direction, and the local Orion spur, which is within around a kpc. We emphasize that we do not know the source's distance.

Swift observed Swift J0243.6+6124 quasi-simultaneously at 10 October 2017 09:53:13 to 11:47:00 UT. To estimate the X-ray flux, we extract the X-ray spectrum using the online Swift-XRT repository (Evans et al. 2009, MNRAS 397, 1177). This spectrum can be described by a simple absorbed powerlaw plus blackbody model with N_H = (1.25 +/- 0.03)E22 cm^{-2}, a photon

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index Gamma = 1.4 +/- 0.1 and a blackbody temperature of kT = 1.54 +/- 0.14. This yields an unabsorbed 0.5-10 keV X-ray flux of (8.9 +/- 0.1)E-9 erg s^{-1} cm^{-2}, which corresponds to an X-ray luminosity of 6.0E37 erg/s $(d/7.5\ kpc)^2$ erg/s. Combined with the VLA non-detection, we place a 3-sigma upper limit on the radio/X-ray luminosity ratio of 1.8E-10 at 6 GHz.

A second VLA observation is planned for later stages of the outburst. We thank the VLA schedulers for rapidly making this observation possible.

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