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The accreting millisecond pulsar LMXB MAXI J0911-655/Swift J0911.9-6452 appears to be returning to quiescence

ATel #16358; *C. O. Heinke (U. Alberta), N. Degenaar (U. Amsterdam)*

on 3 Dec 2023; 15:51 UT

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Subjects: X-ray, Globular Cluster, Neutron Star, Transient

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MAXI J0911-655/Swift J0911.9-6452 is an accreting millisecond pulsar in the globular cluster NGC 2808 (Sanna et al. 2017, A&A, 598, A34), at a distance of 9.5 kpc (Watkins et al. 2015, ApJ, 812, 149). It was discovered in MAXI and Swift/BAT data at $L_x=3e36$ erg/s in February 2016 (Atels #8872, #8884). MAXI J0911-655 has appeared to remain consistently active until now, as tracked by MAXI, Swift/XRT, Integral, Chandra, and NICER (Atels #8914, #8971, #8986, #9738, #9740, #10425, #12869, #13754, #13760, #14761, #14767). However, it did drop down to $L_x=2e34$ erg/s over the course of May 2019, before returning to $L_x=1.5e36$ in early June 2019 (Atels #12831, #12846).

Daily MAXI count rates around Sept 10, 2023 were averaging 0.04 ct/s, but declined to average 0 ct/s around Nov. 20, 2023. NICER monitoring has shown a declining count rate from 60 counts/s in May and June 2023 (consistent with typical rates over the past 7 years), to between 35 and 26 counts/s on Sept. 17-19. We requested a Swift/XRT observation to test its current flux level, which took place on Nov. 30, 2023 for 846 seconds. No photons were detected from within 20" of the Chandra position (Atel #8971) of MAXI J0911-655, allowing a 3-sigma upper limit of $1.2e-2$ cts/s. Assuming $N_H=2.7e21$ and a photon index of 1.27 (Sanna et al. 2017), this gives a 0.5-10 keV flux limit of $8.2e-13$ ergs/cm²/s, which for a 9.5 kpc distance gives $L_x<9e33$ erg/s. NICER monitoring is also ongoing.

We thank the Swift team for their support.

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