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New X-ray transient outburst in Terzan 5

Altamirano, D.; Degenaar, N.D.; Heinke, C.O.; Homan, J.; Pooley, D.; Sivakoff, G.R.; Wijnands, R.

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New X-ray transient outburst in Terzan 5

ATel #3714; *D. Altamirano (U. Amsterdam), N. Degenaar (U. Amsterdam), C. O. Heinke (U. Alberta), J. Homan (MIT), D. Pooley (Sam Houston State U.), G. R. Sivakoff (U. Alberta), R. Wijnands (U. Amsterdam)*

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Credential Certification: *Craig Heinke (cheinke@virginia.edu)*

Subjects: X-ray, Request for Observations, Globular Cluster, Transient

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We have been monitoring the globular cluster Terzan 5 with weekly RXTE observations. Our observation from 4:57 to 5:28 UT on Oct. 26, 2011 found an RXTE PCA intensity of 0.008(2) Crab, vs. typical quiescent intensity of 0.002(1) Crab (2-16 keV). No indications of pulsations are visible yet, but the countrate is only 43 cts/s/PCU including background. Swift/BAT daily-averaged flux measurements (<http://swift.gsfc.nasa.gov/docs/swift/results/transients/weak/EXO1745-248/>) confirm the flux increase, reaching 0.0058(8) cts/cm²/s (15-50 keV), vs. typical quiescent flux of +/-0.001 cts/cm²/s.

This could be a new outburst of EXO 1745-248 (Markwardt & Swank 2000, IAUC # [7454](#); Wijnands et al. 2005, ApJ, 618, 883), or of IGR J17480-2446 (Atel [#2919](#), [#2922](#), [#2929](#), [#2933](#), [#2937](#), [#2946](#), [#2952](#), [#2974](#)), or of one of the numerous other quiescent X-ray binaries in Terzan 5 (Heinke et al. 2006, ApJ, 651, 1098). Identifying which X-ray binary is undergoing outburst is critical for understanding the outburst behavior of X-ray binaries, and for studying the cooling of their crusts after outbursts (e.g. Degenaar & Wijnands 2011, MNRAS, 414, L50). Swift, RXTE and Chandra observations have been requested to identify the source's position and measure its X-ray characteristics. We encourage rapid observations with X-ray and radio instruments (due to the high N_H and cluster environment, optical/IR observations are very difficult).

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rrutledge@astronomerstelegam.org

Derek Fox, Editor

dfox@astronomerstelegam.org