SAX J1747.0-2853: 'normal' thermonuclear bursts resumed


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ATel #3217: SAX J1747.0-2853: 'normal' thermonuclear bursts resumed

ATel #3217; M. Linares (MIT), D. Altamirano, A. Watts, M. van der Klis, R. Wijnands, A. Patruno, M. Armas-Padilla, Y. Cavecchi, N. Degenaar, M. Kalamkar, R. Kaur, Y. Yang (Amsterdam), P. Casella (Southampton), N. Rea (CSIC-IEEC)
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Credential Certification: Manuel Linares (linares@mit.edu)

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We report the detection of a type I X-ray burst in a ~9ksec-long RXTE-PCA observation of the neutron star transient SAX J1747.0-2853. The burst bolometric flux was \(1.7 \pm 0.1 \times 10^{-8}\) erg/s/cm\(^2\) at the peak, on 2011-03-10 16:29:13 UTC, and the burst lasted for about 15 seconds. The blackbody temperature reached 2.4 \(^\pm\) 0.1 keV at the peak and decayed to 1.0 \(^\pm\) 0.2 keV within \(~8s\). We inspected 0.5-s, 1-s and 2-s long Fourier transforms and found no significant oscillations during the burst in the 10-1000 Hz frequency range.

A ~4hrs-long superburst from SAX J1747.0-2853 was recently reported by Chenevez et al. (ATel #3183), detected by INTEGRAL on 2011-02-13. SAX J1747.0-2853 was observed by RXTE on 4 other occasions between 2011-02-13 and 2011-03-10 for a total of \(~19\) ksec, and no bursts were detected. Superbursts are attributed to the ignition of a layer of carbon, after which normal bursting activity is quenched for about a month, presumably due to the heat injected by the superburst in the surface layers (Cumming & Macbeth 2004, ApJ 603 L37). We find an upper limit on the quenching time after the February 2011 superburst from SAX J1747.0-2853 of 25 days. This is, as far as we know, the second shortest limit on the quenching time following a superburst, after the upper limit of 19 days found by Kuulkers et al. (2010, A&A 514 65) in 4U 0614+09.
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R. E. Rutledge, Editor-in-Chief
Derek Fox, Editor

rrutledge@astronomerstelegram.org
dfox@astronomerstelegram.org