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INTEGRAL sees continuing activity from SAX J1747.0-2853, but not from SAX J1750.8-2900

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on 17 Feb 2011; 08:57 UT

Credential Certification: Erik Kuulkers (ekuulker@rssd.esa.int)

Subjects: X-ray, Binary, Neutron Star, Transient, Variables

Referred to by ATel #: [3181](#), [3183](#), [3930](#), [12576](#)

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The INTEGRAL Galactic bulge monitoring program (see ATel #[438](#)) observations obtained between 2011 Feb 13 11:30 and 15:11 UT show continuing soft X-ray activity from SAX J1747.0-2853 (ATels #[3123](#), #[3163](#)).

The JEM-X instrument detects strong flaring activity between 80 and 700 mCrab (3-25 keV). The average JEM-X spectrum is well described (reduced chi-squared is 1.1 for 11 degrees of freedom) by an absorbed black body plus power law (fixing the interstellar absorption, N_H , to $9e22 \text{ cm}^{-2}$, Natalucci et al. 2004, A&A 416, 699): $kT = 1.6 \pm 0.1$ keV and black-body luminosity of $(3.8 \pm 0.3)e37 \text{ erg/s}$ (at a distance of 9 kpc, Natalucci et al. 2000, ApJ, 543, L73), power-law index = 3.0 ± 0.1 with power-law normalization of 9 ± 2 photons/keV/cm²/s at 1 keV. The total unabsorbed 3-25 keV flux is $7.4e-9 \text{ erg/cm}^2/\text{s}$.

Although at the position of SAX J1747.0-2853 we do not detect any emission with IBIS/ISGR1, the analysis is complicated in this region because of the nearby 'blended' source 1E1743.1-2852 (see also ATel #[3170](#)). We, therefore, regard the emission seen in this region to be due to SAX J1747.0-2853, as it is the only active source as seen by the Swift/XRT (Atel #[3163](#)) and JEM-X. We find a flux of 15 ± 2 mCrab, which is

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consistent with the steep JEM-X spectrum.

SAX J1747.0-2853 is also burst active; we detected a type I X-ray burst starting near UT 13 Feb 13:34 which lasted at least 2 min, and had a net-peak flux of about 700 mCrab (3-25 keV).

The high, soft flux and strong flaring is the first of its kind seen in the Galactic bulge monitoring program, since its start in February 2005 (ATel #438). The behaviour is, however, comparable to that seen in March 2004 with INTEGRAL (ATel #256, see also Tarana et al. 2008, *PoS(Integral08)045*), when the source was also bright and soft.

We note that SAX J1750.8-2900, reported to be active a few days earlier (ATel #3170), is not seen in our observations, with a 3 sigma upper limit of 11 mCrab in JEMX1 (3-10 keV) and 8 mCrab in ISGRI (20-40 keV).

We thank the ISDC for providing us the results of their quick look analysis, on which this ATel is partly based.

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