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## First hard X-ray detection of the neutron star X-ray transient SAX J1806.5-2215 with INTEGRAL

ATel #3210; *M. Del Santo (INAF/IASF-Roma, Italy), P. Romano (INAF/IASF-Palermo, Italy), L. Sidoli, S. Mereghetti (INAF/IASF-Milano, Italy), C. Ferrigno (ISDC, Switzerland), N. Degenaar, R. Wijnands (University of Amsterdam, The Netherlands), E. Kuulkers (ESA/ESAC, Spain), A. Nucita (University of Salento, Italy), V. Savchenko (ISDC, Switzerland)*

on 7 Mar 2011; 21:13 UT

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

Referred to by ATel #: [3218](#), [3381](#), [3926](#), [4017](#)

In the framework of the INTEGRAL observations of the Galactic Inner Disc, we obtained the first hard X-ray detection above 20 keV of the source SAX J1806.5-2215 (in't Zand et al. 1998, NuPhS, 69, 228). The currently on-going outburst (ATels #[3202](#), #[3193](#)) of this so-called "burst-only" source (Cornelisse et al. 2004, NuPhS, 132, 518) has been detected by INTEGRAL on 2011 March 06 from 10:01 to 23:21. The IBIS/ISGRI (25.5 ks exposure time) significance levels are 15 sigma and 8 sigma in the 20-40 keV and 40-80 keV energy bands, respectively. The corresponding fluxes are  $21.2 \pm 1.4$  mCrab and  $23.6 \pm 3.0$  mCrab, respectively.

The source is also detected by JEM-X. The joint JEM-X1, JEM-X2 and IBIS/ISGRI spectrum can be well fitted (red.  $\chi^2=0.9$  (13 d.o.f.)) by a simple power-law with photon index  $2.0 \pm 0.3$ , consistent with the findings of Degenaar et al. (ATel #[3202](#)). The estimated fluxes are  $3.8E-10$  erg/cm<sup>2</sup>/s in 2-10 keV and  $3.2E-10$  erg/cm<sup>2</sup>/s in 20-80 keV. For a distance of 8 kpc (the upper limit reported in Cornelisse et al. 2002, A&A 392, 931), this translates into a 2-10 keV luminosity of  $\sim 3E36$  erg s<sup>-1</sup> which is roughly a factor of 1.5 higher than the last Swift/XRT pointing (ATel #[3202](#)). We found no type-I X-ray bursts either in the IBIS/ISGRI, or in the JEM-X light curves.

Further INTEGRAL and Swift observations are planned.

We encourage further monitoring at all wavelengths of this source.

## Related

- [8222](#) INTEGRAL detection of the faint X-ray transient SAX J1806.5-2215
- [4017](#) New INTEGRAL and Swift observations of the faint neutron-star X-ray transient SAX J1806.5-2215
- [3926](#) New Swift/XRT observation shows faint X-ray transient SAX J1806.5-2215 remains active 1 year after outburst
- [3381](#) Type-I X-ray bursts from SAX J1806.5-2215 with RXTE
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- [3219](#) Improved Swift-XRT position of SAX J1806.5-2215
- [3218](#) Chandra Localization of SAX J1806.5-2215
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- [3193](#) Possible outburst in neutron star LMXB SAX J1806.5-2215

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