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

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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+/-1.4 mCrab and 23.6+/-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 +/-0.3, consistent with the findings of Degenaar et al. (ATel #3202). The estimated fluxes are 3.8E-10 erg/cm^2/s in 2-10 keV and 3.2E-10 erg/cm^2/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 ~3E36 erg s-1 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.

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