Swift detection of a third burst from SGR J1745-29

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*on **6 Aug 2013; 20:19 UT***
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At 02:09:09 UT on August 5th, 2013, Swift/BAT triggered on a short SGR-like burst (GCN #15069) consistent with the location of SGR J1745-29, a recently discovered magnetar near Sgr A* (e.g. Kennea et al., 2013). This is the third burst detected from SGR J1745-29 after its first on April 25th, 2013 (ATEL #5009) and second on June 7th, 2013 (ATEL #5124). ?

Analysis of the downlinked BAT data (GCN #15074) show that the burst consisted of a single peak with a duration of 0.011 +/- 0.002 sec. The time-averaged spectrum from T+0.00 to T+0.01 sec is best fit by functions exponentially declining with energy in the BAT energy range. Â A blackbody fit is formally the best fit with kT = 8.9 +/- 0.2. The fluence in the 15-150 keV band is 9.2 +- 1.6 x 10^{-9} erg/cm2. The 1-sec peak photon flux measured from T+0.00 sec in the 15-150 keV band is 22.1 +- 3.6 photon cm^{-2} sec. Â All the quoted errors are at the 90% confidence level.

The BAT spectral parameters of this new burst compare well to the initial burst seen from SGR J1745-29, which had a kT = 7.8 +/- 1.8 keV and a fluence of 7.8 +/- 1.8 x 10^{-9} erg cm^{-2} (Kennea et al., 2013).

As a result of the BAT detection, Swift autonomously slewed to the target and observed in PC mode for a total of 3.9 ks starting at 02:10:26UT on August 5th, 2013. SGR J1745-29 is clearly detected and fitted with a blackbody model, with absorption fixed to the value in Kennea et al. (2013), we find an absorption-corrected flux of 2.2 +/- 0.1 x 10^{-12} erg s^{-1} cm^{-2} (0.3-10 keV). The fitted black body temperature is 0.94 +/- 0.1 keV.

As the Galactic Center is being monitored every day by Swift/XRT we can compare this flux point to those taken before and after, and there is no evidence that the X-ray emission from SGR J1745-29 is in any way affected by the occurrence of this burst. Overall the flux of SGR J1745-29 has been slowly fading over the approximately 100 days since its first detection (ATEL #5006), with the overall trend being a fading of approximately 1 order of magnitude since initial detection. Similarly, the temperature since the onset of X-ray emission from SGR J1745-29 has been consistent with a value of ~1 keV.

Observations of SGR J1745-29 by Swift are on-going.

Reference:

Kennea, Burrows, Kouveliotou et al., 2013, ApJL, 770, 24

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