Swift Observations of GRB 120913B

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1 Introduction

At 23:55:58 UT on 2012-09-13, the Swift Burst Alert Telescope (BAT) triggered and located GRB 120913B (trigger=533613). Swift did not slew because it is Sun constraint (Helder et al., GCN Circ. 13763)

The BAT ground-calculated position is given in Barthelmy et al. (GCN Circ. 13772) with RA-2000 = 14h 14m 38.3s, and Dec-2000 = $-14^\circ 30' 27.9''$ with an uncertainty of 1.0', (radius, sys+stat, 90% containment). The partial coding was 59%.

There were a few ground-based optical/NIR follow-up observations reported on this burst: (LaCluyze et al., GCN Circ. 13764,13767, Klotz et al., GCN Circ. 13765,13766, Covino et al., GCN Circ. 13768 and Jelinek et al., GCN Circ. 13770). In addition, the burst was detected by FERMI GBM (Pelassa et al., GCN Circ. 13773).

Due to the Sun observing constraint, Swift cannot slew to the BAT position until 20:57 UT on 2012 December 14. There will thus be no XRT or UVOT data for this trigger.

2 BAT Observation and Analysis

Using the data set from T-240 to T+882 s the BAT ground-calculated position is RA, Dec = 213.660, -14.508 deg, which is RA(J2000) = 14h 14m 38.3s Dec(J2000) = -14d 30' 27.9'' with an uncertainty of 1.0 arcmin, (radius, sys+stat, 90% containment). The partial coding was 59% (Barthelmy et al., GCN Circ. 13772).

The mask-weighted light curve (Figure 1) shows two main pulses riding on top of a broad peak. The burst starts at $\sim$T-50 s, with peaks at $\sim$T+5 and $\sim$T+39 s, and ending at $\sim$T+140 s. T90 (15-350 keV) is $126 \pm 4$ s (estimated error including systematics).

The time-averaged spectrum from T-51.70 to T+111.79 s is best fit by a simple power-law model. The power-law index of the time-averaged spectrum is $1.63 \pm 0.04$. The fluence in the 15-150 keV band is $1.11 \pm 0.02 \times 10^{-5}$ erg/cm$^2$. The 1-sec peak photon flux measured from T+38.46 s in the 15-150 keV band is $3.2 \pm 0.2$ ph cm$^{-2}$ s$^{-1}$. All the quoted errors are at the 90% confidence level.

The results of the batgrbproduct analysis are available at http://gcn.gsfc.nasa.gov/notices_s/533613/BA/
Figure 1: BAT Light curve of GRB 120913B.