

## 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<sup>2</sup>. 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<sup>-2</sup> s<sup>-1</sup>. 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/>

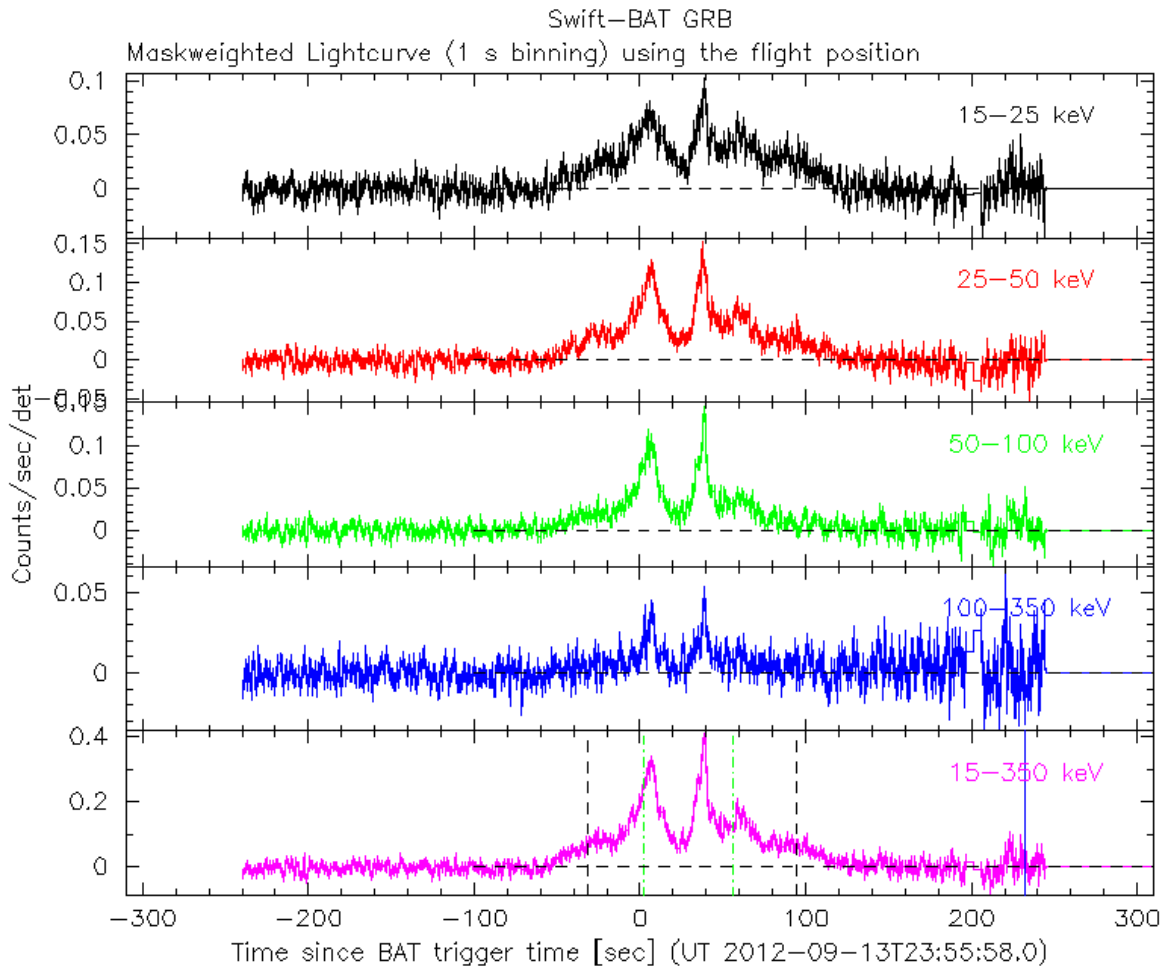


Figure 1: BAT Light curve of GRB 120913B.