

Swift Observations of GRB 130215A

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1 Introduction

The Swift BAT triggered on and located GRB 130215A at 01:31:30 UT (trigger=548760) (D'Elia et al., GCN Circ. 14204). Due to a Moon observing constraint, Swift could not slew to the BAT position, thus there are no XRT or UVOT data for this trigger.

The best Swift position is the BAT localization at RA(J2000)= 43.486 deg, Dec(J2000)= 13.387 deg, RA(J2000)= 02^h53^m56.7^s, Dec(J2000)= +13^d 23' 13.6", with an error radius of 1.5 arcmin (90% confidence).

The GRB was also detected by Fermi/GBM (Younes and Bhat, GCN Circ. 14219). The afterglow was detected in the optical, near-infrared and radio bands by several ground-based telescopes. The redshift is $z = 0.597$ (Cucchiara & Fumagalli, GCN Circ. 14207).

2 BAT Observations and Analysis

Using the data set from T-239 s to T+963 s (Barthelmy et al., GCN Circ. 14214), the BAT ground-calculated position is RA(J2000)= 43.486 deg, Dec(J2000)= 13.387 deg, RA(J2000)= 02^h53^m56.7^s, Dec(J2000)= +13^d 23' 13.6", with an uncertainty of 1.5 arcmin, (radius, sys+stat, 90% containment). The partial coding was 8%.

The mask-weighted light curve (Figure 1) starts at \sim T-10 s, shows a single peak starting at \sim T+10 s, and slowly returns to baseline at \sim T+170 s. T_{90} (15–350 keV) is 65.7 ± 10.8 s (estimated error including systematics).

The time-averaged spectrum from T-5.83 s to T+73.38 s is best fit by a simple power-law model. The power law index of the time-averaged spectrum is 1.59 ± 0.14 . The fluence in the 15–150 keV band is $(5.4 \pm 0.5) \times 10^{-6}$ erg cm⁻². The 1-second peak photon flux measured from T+11.16 s in the 15–150 keV band is 2.5 ± 0.7 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/548760/BA/

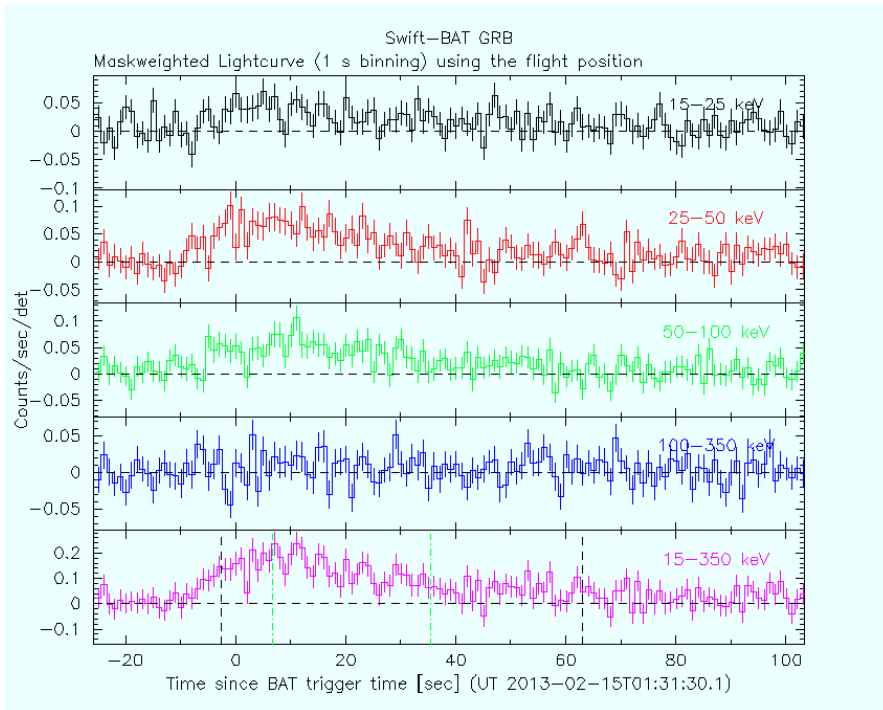


Figure 1: BAT light-curve. The mask-weighted light curve in the 4 individual plus total energy bands. The units are counts s^{-1} illuminated-detector $^{-1}$ (note illum-det = 0.16 cm^2).