Swift Observation of GRB 071008

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1   Introduction

BAT triggered on GRB 071008 at 21:55:56 UT (trigger=293587). Because Swift is in the process of returning to normal operations, automatic slewing to GRBs is currently disabled outside of business hours (US EDT). Therefore, there are no prompt XRT observations of this burst. No clear XRT counterpart was found in the follow–up observations.Swift UVOT did not observe this GRB.

2   BAT Observation and Analysis

Using the data set from $T-239$ to $T+963$ s the BAT ground-calculated position is RA, Dec = 151.571, 44.303 deg which is RA(J2000) = 10h 6m 17.0s Dec(J2000) = +44d 18' 13" with an uncertainty of 2.0 arcmin, (radius, sys+stat, 90% containment). The partial coding was 88%.

The mask-weighted light curve (Fig. **??**) shows a symmetrical peak starting at $\sim$T-11 s, peaking at $\sim$T-1 s, and ending at $\sim$T+10 s. T90 (15-350 keV) is 18$\pm$ 1 s (estimated error including systematics).

The time-averaged spectrum from T-11.0 to T+14.0 s is best fit by a simple power-law model. The power law index of the time-averaged spectrum is 2.23 ± 0.27. The fluence in the 15-150 keV band is $2.4 \pm 0.4 \times 10^{-7}$ erg/cm^{-2}. The 1-sec peak photon flux measured from T-2.04 sec in the 15-150 keV band is 0.5 ± 0.1 ph/cm^{-2} s^{-1}. All the quoted errors are at the 90% confidence level.

3   XRT Observations and Analysis

Swift XRT observed the GRB 071008 (trigger=293587, Moretti et al., GCN Circ. 6856) beginning 57 ks after the BAT trigger. In 6857s of Photon Counting mode data spanning 57-65 ks after the trigger in the BAT error circle we found 2 faint sources at RA,Dec =151.58851,44.32071 and RA,Dec =151.55340, 44.34459 which are RA(J2000) = 10 06 21.24 Dec(J2000)= +44 19 14.5 and RA(J2000) = 10 06 12.82 Dec(J2000)= +44 20 40.5 with error circles of radius 6.5 and 7.5 arcseconds (90%, including boresight uncertainties) respectively. They are at 116 and 40 arcseconds from the BAT position, respectively. At present, due to the paucity of the observed events, we are unable to determine whether these sources are fading. Further observations will be planned when the distance to the Sun will be larger.
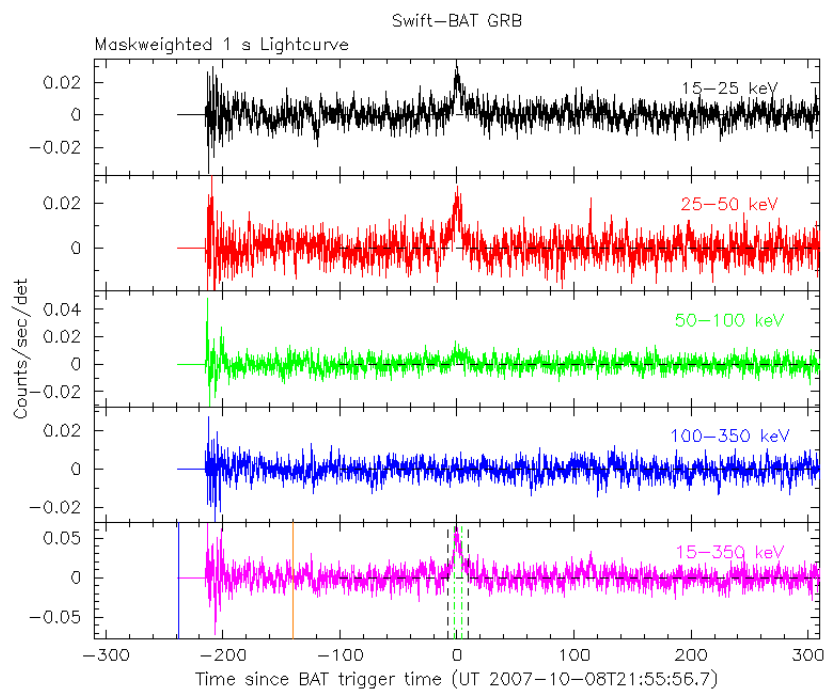
Figure 1: BAT Light curve. The mask-weighted light curve in the 4 individual plus total energy bands. The units are counts s^{-1} illuminated-detector^{-1} (note illum-det = 0.16 cm^2) and T_0 is 21:55:56 UT.