Swift Observation of GRB 070612A

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1 Introduction

BAT triggered on GRB 070612A at 02:38:45 UT (Trigger 282066) (Grupe, *et al.*, *GCN Circ.* 6509). This burst is a long burst with an observed $T_{90} = 370 \pm 10$ s. Swift did not slew to this burst because it is sun contraint until 2007 August 31. This will therefore be the final report on this burst.

The best position for the afterglow of GRB 070612A is the R position reported by Updike et al. (*GCN Circ.* 6515) in the R band with RA($J2000$) = 121.3689 *deg* ($08h05m28.53s$), Dec($J2000$) = +37.2693 *deg* ($+37d16'09.57''$) with a position uncertainty of 1".

2 BAT Observation and Analysis

Using the data set from $T - 239$ s to $T + 963$s, further analysis of BAT GRB 070612A has been performed by the Swift team (Barthelmy, *et al.*, *GCN Circ.* 65..). The BAT ground-calculated position is RA($J2000$) = $121.355deg$ ($08h05m25.2s$), Dec($J2000$) = +37.258 *deg* ($+37d15'30''$) with an uncertainty of 1.4 arcmin, (radius, systematic and statistical, 90% containment). The partial coding was 11%.

The masked-weighted light curves (Fig.1) show two main overlapping peaks with the first starting at T-20 s and the second ending at T+400 s. The two peaks are at T+5s, T+200s. $T_{90}(15 - 350keV)$ is 370 ± 10 s (estimated error including systematics).

The time-averaged spectrum from $T - 4.7$s to $T + 418$s is best fitted by a single power law model. This fit gives a photon spectral index of $\Gamma = 1.69 \pm 0.10$ ($\chi^2 = 54.8$ for 57 d.o.f.). For this model the total fluence in the $15 - 150$ keV band is $(1.1 \pm 0.0) \times 10^{-5}$ ergs cm^{-2} and the 1-s peak flux measured from $T + 10.39$s in the $15 - 150$ keV band is 1.5 ± 0.4 photons cm^{-2} s^{-1}. All the quoted errors are at the 90% confidence level.

3 XRT and UVOT Observations

Because of the sun contraint Swift did not observe the burst with its narrow field instruments. No observations of this burst are planed.

4 Other Observations

As reported by Updike et al. (*GCN Circ.* 6515), GRB 070612A was a relatively optically bright burst with R=17.16±0.17 mag found in a 20 minute exposure with the 0.9m SARA telecope at Kitt Peak starting 1hour and 17 minutes after the BAT trigger.

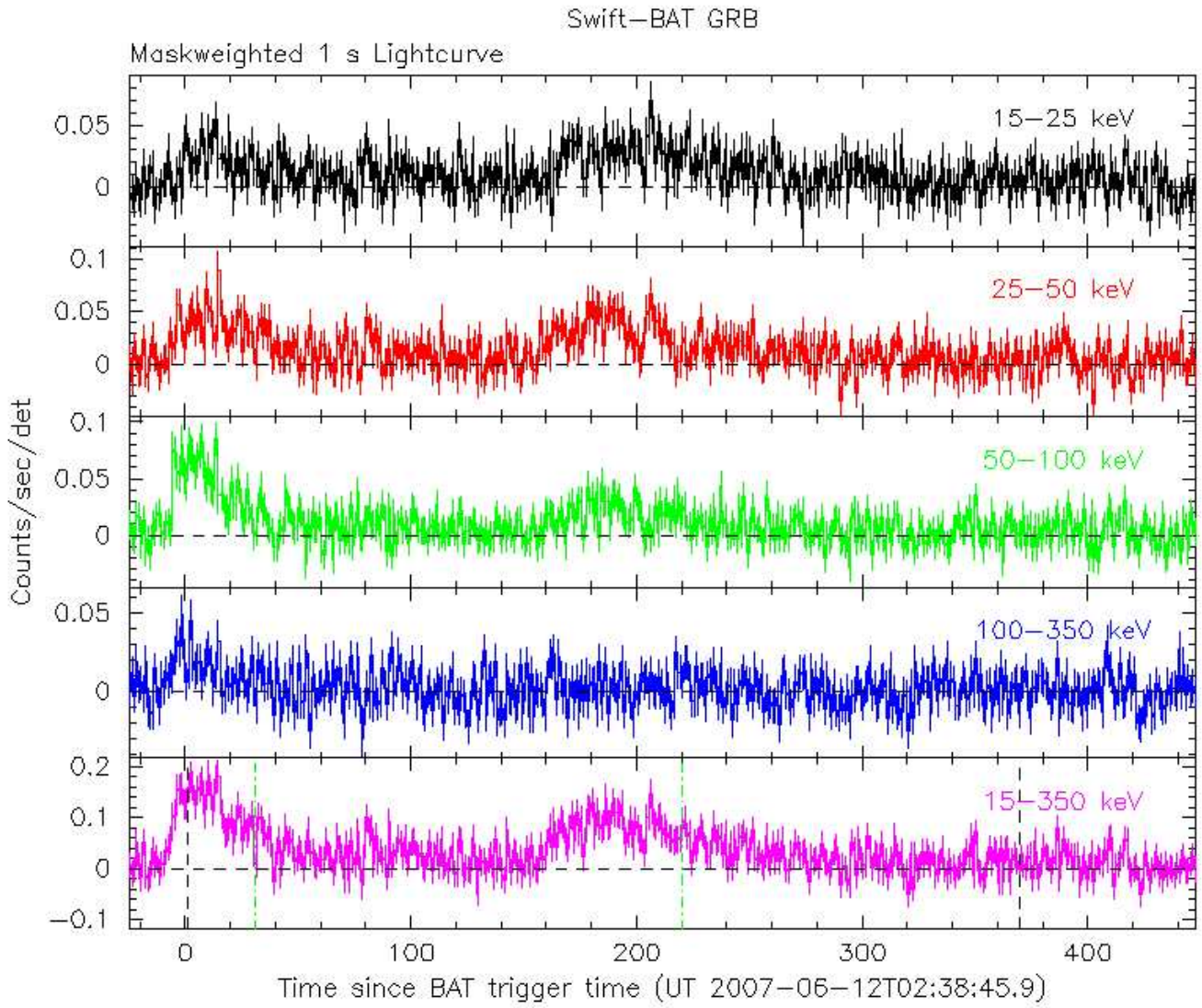

Figure 1: BAT Light curve. The mask-weighted light curve in the 4 individual plus total energy bands. The units are counts s^{-1} illuminated-detector^{-1} and T_0 is 2007-June-12 02:38:45 UT.