Swift Observation of GRB 090129
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1 Introduction

BAT triggered on GRB 090129 at 21:07:15 UT (Trigger 341504) (Ziaeepour, et al., GCN Circ. 8861). This was a 0.256 sec rate-trigger with a significance of 24.12 on a mildly bright single-peak burst with $T_{90} = 17.5 \pm 2.7$ sec (15 – 350 keV). Swift didn’t slew to this burst due to the Sun constraint, Sun distance = 41.63 deg, Sun angle = 2.9 hr (West of Sun). Our best position is from the BAT ground-analyzed data: RA($J2000$) = 269.105 deg (17h56m25.1s), Dec($J2000$) = $-32.793$ deg ($-32d47'34.8''$) with an error of 1.0 arcmin (radius, 90% confidence). This burst has been also detected by INTEGRAL/SPI-ACS (V. Beckmann communication). No follow-up has been reported for this burst.

2 BAT Observation and Analysis

Using the data set from $T-120$ to $T+962$ sec, further analysis of BAT GRB 090129 has been performed by Swift team (Barthelmy et al., GCN Circ. 8862). The BAT ground-calculated position is RA($J2000$) = 269.105 deg (17h56m25.1s), Dec($J2000$) = $-32.793$ deg ($-32d47'34.8''$) ± 1. arcmin, (radius, systematic and statistical, 90% containment). The partial coding was 89% (the offset angle was 18.14 deg).

The 1-sec binned mask-weighted light curves (Fig.1) show a single FRED peak with $T_{90}(15-350 keV)$ = 17.5 ± 2.7 sec (estimated error including systematics). There is also an overlapped softer peak at $\sim T_0 + 6$ sec. visible only in 2 softest bands.

The time-averaged spectrum from $T-0.2$ to $T+27.0$ sec is best fitted by a simple power law model. The photon index of the power-law is $1.888 \pm 0.06$ ($\chi^2 = 47.961$ for 57 d.o.f.). For this model the total fluence in the $15 – 150$ keV band is $(2.1 \pm 0.1) \times 10^{-6}$ ergs cm$^{-2}$ and the 1-sec peak flux measured from $T+1.00$ sec in the $15 – 150$ keV band is $3.7 \pm 0.2$ ph cm$^{-2}$ sec$^{-1}$. 
Figure 1: BAT light curve. The mask-weighted light curve in the 4 individual plus total energy bands. The units are counts/sec/illuminated-detector and $T_0$ is 21:07:15 UT.