

Swift Observation of GRB 081016A

P.A. Evans, A.P. Beardmore (U. Leicester), for the Swift Team

1 Introduction

INTEGRAL triggered on GRB 081016A on 2008 October 16 at 06:51:31 UT (Gotz *et al.*, *GCN Circ.* 8377). This was a long GRB lasting about 34 s.

Swift began follow up observations 20.4 ks after the trigger, however only XRT was in operation: UVOT was in safe mode, following a safety-circuit trip when observing an outburst from CC Eri.

The best available position for this burst is the XRT position: RA(*J*2000) = 255.5703deg (17h02m16.98s), Dec(*J*2000) = -23.3356deg (-23d20'08.0") with an error of 3.6 arcsec (radius, 90% confidence).

2 XRT Observations and Analysis

Swift began observing the GRB 20.4 ks after the trigger, obtaining 2 ks of data in Photon Counting (PC) mode. We detect an uncatalogued source in the INTEGRAL error circle at the position given above. In a second XRT observation lasting 3.8 ks starting 5.2 days after the trigger, the source has faded and can no longer be detected. The 0.3 – 10 keV light curve is shown in Fig.1.

A spectrum formed from the first XRT observation, can be modelled with an absorbed power law with photon index $2.60_{-0.81}^{+0.94}$. The absorption column is consistent with the Galactic value of $1.7 \times 10^{21} \text{ cm}^{-2}$ (Kalberla *et al.* 2005). The counts to observed (unabsorbed) flux conversion factor is 1.1×10^{-12} (3.0×10^{-12}) erg cm⁻² ct⁻¹.

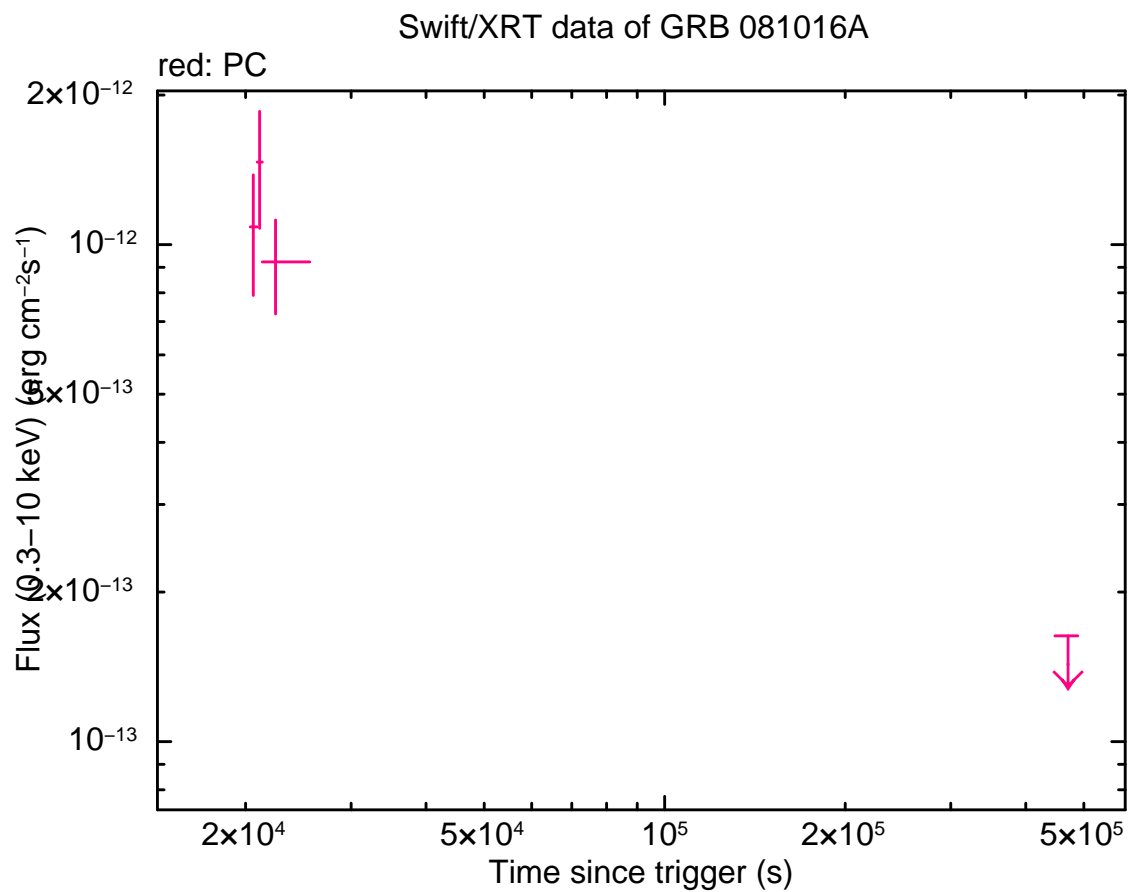


Figure 1: XRT Lightcurve. Flux in the 0.3-10 keV band: The approximate conversion is 1 count = 1.1×10^{-12} $\text{ergs}/\text{cm}^2/\text{sec}$.