

# Statistical properties of serendipitous sources discovered in XRT Swift deep X-ray Images

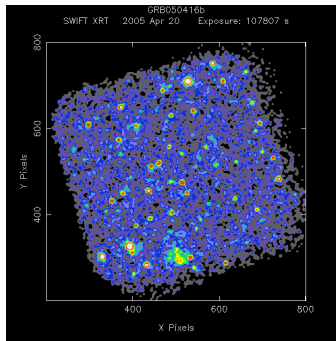
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August 1, 2008



5 XRT composed images. Each one obtained by adding multiple observations of the targeted GRB afterglow

- ▶ GRB050416A
- ▶ GRB050416B
- ▶ GRB050802
- ▶ GRB060904A
- ▶ GRB060908



Each composite image obtained with a total exposure time of the order of  $10^5$  s

Analysis using ximage DETECT tool

- ▶ Sliding cell method to find the sources
- ▶ Photometry with corrections to account for vignetting and PSF
- ▶ Probability threshold  $2 \cdot 10^{-5}$

We obtained a catalogue composed by almost 240 sources in two energy ranges (0.3 – 3 KeV and 2 – 10 KeV). We choose two samples: one composed by the softest sources and the other by the hardest ones.

For each X band detected source we:

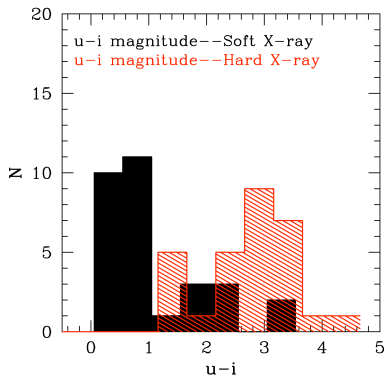
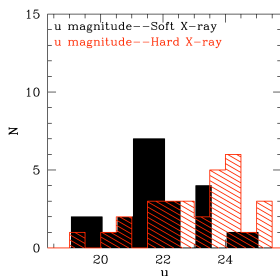
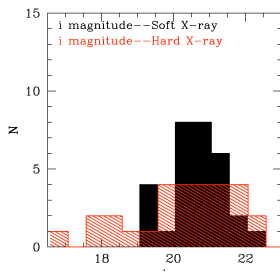
- ▶ Searched the optical catalogues and the SDSS to find counterparts
- ▶ Got the U and I magnitudes and computed the color ( $U - I$ )

For each sample we:

- ▶ Computed the mean value and the standard deviation for the magnitudes and the colors of the sampled sources
- ▶ Computed the  $\log N - \log S$  distribution

We computed the  $\log N - \log S$  distribution for the whole catalogue in order to make comparisons

# Results 1



I band Soft:  $M = 20.55$   $\sigma = 0.94$  Hard:  $M = 20.49$   $\sigma = 1.82$

U band Soft:  $M = 21.63$   $\sigma = 1.38$  Hard:  $M = 23.06$   $\sigma = 1.53$

# Results 2

