

## Swift Observations of IPN GRB 070124

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### 1. INTRODUCTION

Swift executed a target of opportunity (TOO) observation of the short IPN burst GRB 070124 (Hurley et al., GCN 6022) almost 31 hr after the trigger. Consequently, no BAT observations were made and we report on the XRT and UVOT observations of the field.

### 2. XRT OBSERVATIONS AND ANALYSIS

The Swift-XRT began observing the field containing the IPN burst GRB070124 at 2007-01-25 15:36:39.8881 UT. From the analysis of a 7.4 ks photon counting image, 6 sources are found with the following positions and count rates:

	cts/s	Ra	Dec
1	1.78E-03+/-6.1E-04	14 44 50.7	+54 34 11.8
2	1.95E-03+/-6.7E-04	14 46 15.2	+54 37 01.8
3	1.34E-03+/-5.8E-04	14 46 18.2	+54 34 23.0
4	1.34E-03+/-5.8E-04	14 44 53.9	+54 26 31.9
5	1.39E-03+/-6.0E-04	14 46 18.6	+54 38 06.5
6	1.66E-03+/-6.8E-04	14 46 07.7	+54 25 51.0

Only source number 4 is actually inside the IPN error box and it is 0.042 arcmin from a USNO-B1.0 Catalog's source. The other five can all be identified with close galaxies. In particular source 5 is UGC9522 an edge-on Sab galaxy with  $z=0.03866$  that is 1.5 arcmin distant from the nearest edge of the IPN error box (Fig. 1). At present we cannot tell whether these sources are fading or not. Further observations are planned.

### 3. UVOT OBSERVATIONS AND ANALYSIS

UVOT Observations of this burst commenced on Jan 25th at 15:36:41 UT (about 24 hours after the burst) in the UW2 filter only ("filter of the day" mode). As said in the XRT paragraph, there is a bright optical source in the error circle of XRT source 4, catalogued in the USNO B1 archive. Aside this source, there is no new optical source down to a 3 sigma upper limit 21.2, in the UW2 band. Fig. 2 was taken by UVOT between 122.4 ks and 125 ks after the trigger, for a exposure of 2.5 ks. The other 2 images taken by UVOT could not be used because they did not contain source 4.

GRB Discovered Elsewhere (XRT only)  
SWIFT XRT 2007 Jan 25 Exposure: 7442 s

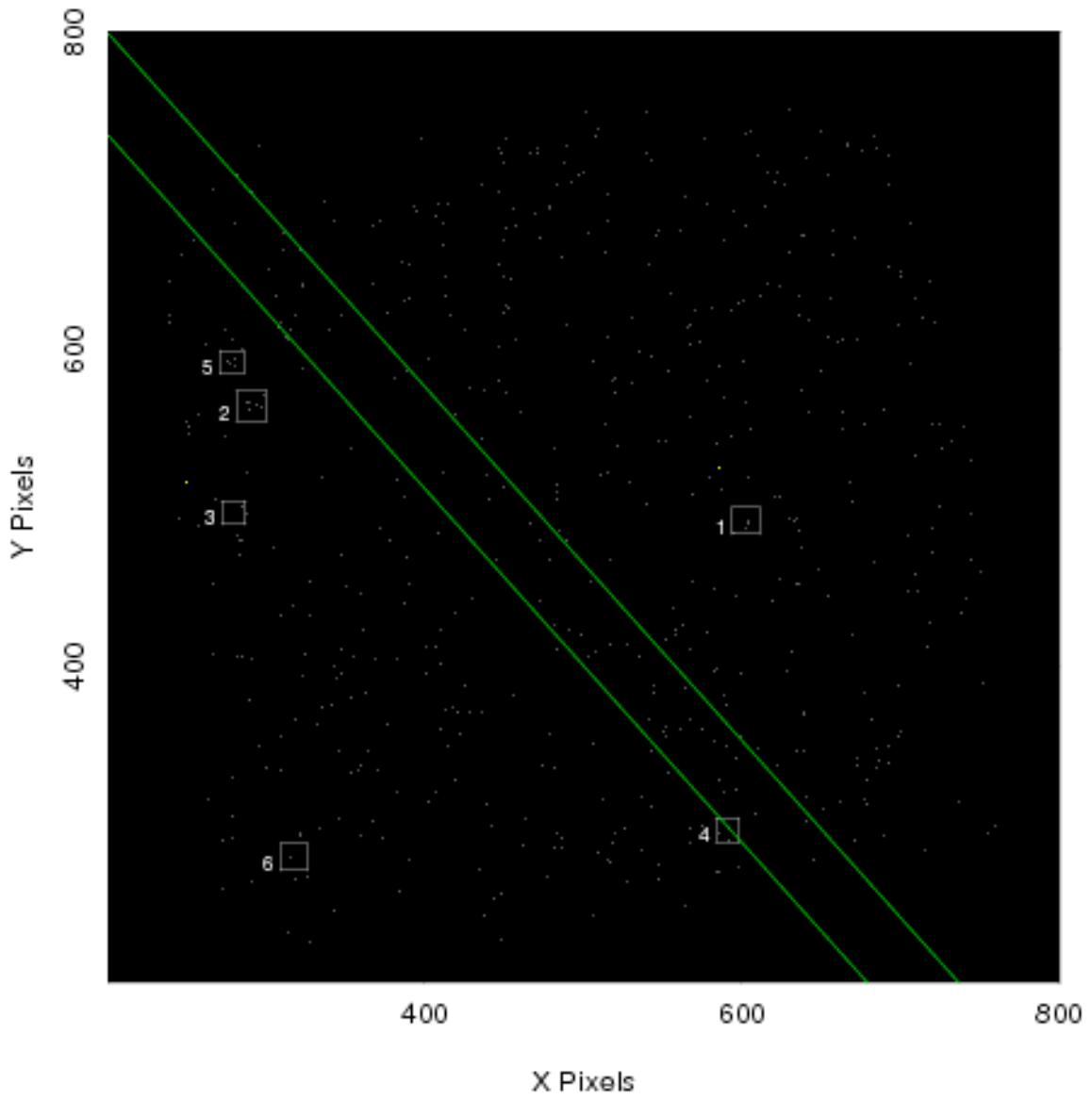


Fig. 1: XRT field of view

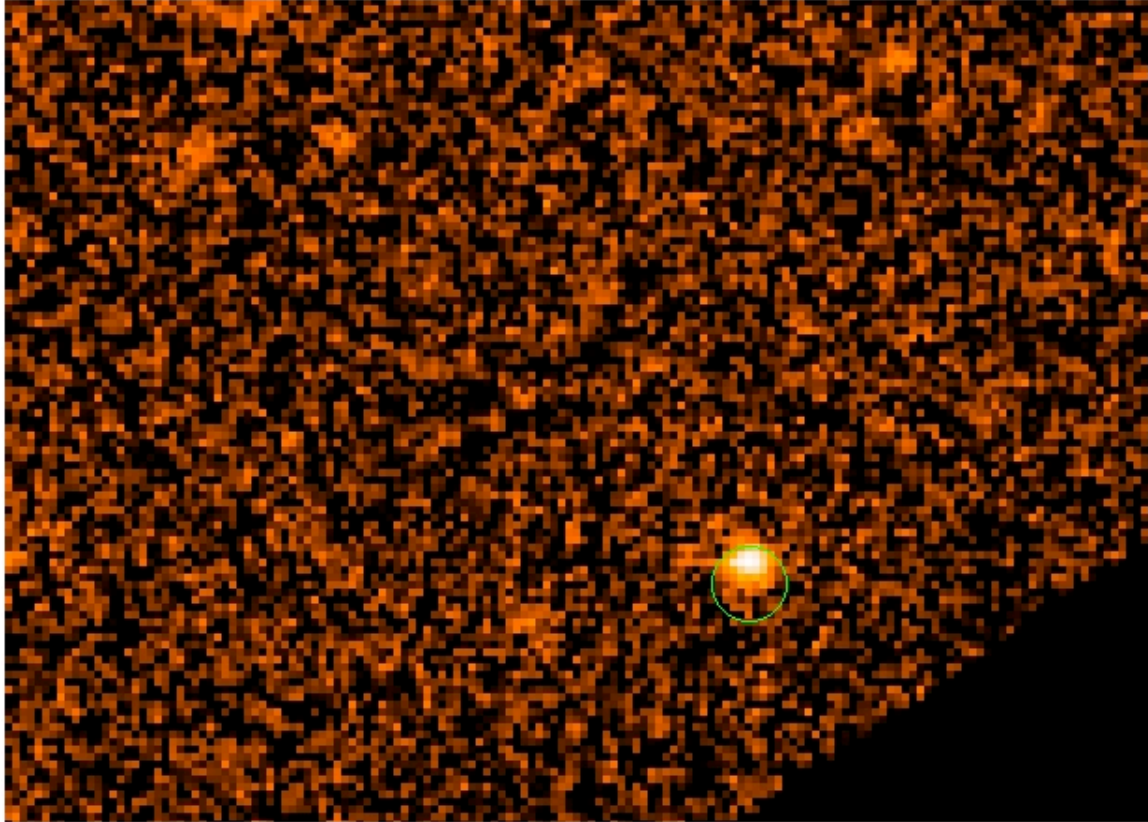


Fig. 3: UVOT image; the green circle is the 5 arcsec error circle of source 4.