

OBSERVATION OF THE OPTICAL COUNTERPART OF THE GRB 970508 SOURCE

With the aid of the 60/90/180 cm Schmidt telescope of the Konkoly Observatory we obtained CCD images of the gamma ray source which was detected by the BeppoSAX Gamma-Ray Burst Monitor on May 8.904 UT, 1997. We used a Photometrics, AT200 CCD camera having a 1536 x 1024 pixel KAF 1600 MCH coated CCD chip displaying a 29 arcminute x 18 arcminute area of the sky with an angular resolution of nearly 1 arcsecond/pixel. The images were taken on the nights 15/16 May 1997 (5 frames each 10 minutes exp. time) and 31 May/01 June 1997 (6 frames each 15 minutes exp. time).

In order to reduce the background noise and to reach as faint limiting magnitude as possible we coadded the frames taken on one particular night (Figure 1 and Figure 2). Filters were not used for the imaging. Based on the spectral sensitivity distribution of the chip, the brightness values represent close to R magnitudes. To estimate the brightness of the optical counterpart of the GRB 970508 we compared its intensity to the nearby star 13 arcsec north, R=19.7 (Schaefer et al., 1997) marked as "c" in Figures 1 and 2.

During our observations we made positive identification of the source on the night 15/16 May 1997 and a negative one on the night 31 May/01 June 1997, which means that we could not identify any visible object in the previous position of the optical counterpart imaged two weeks before. Because the limiting magnitude of our coadded frame was 23.5 ± 0.2 magnitude we conclude that the object has faded below this brightness level.

The light curve based on the data listed in Table 1 is shown in Figure 3.

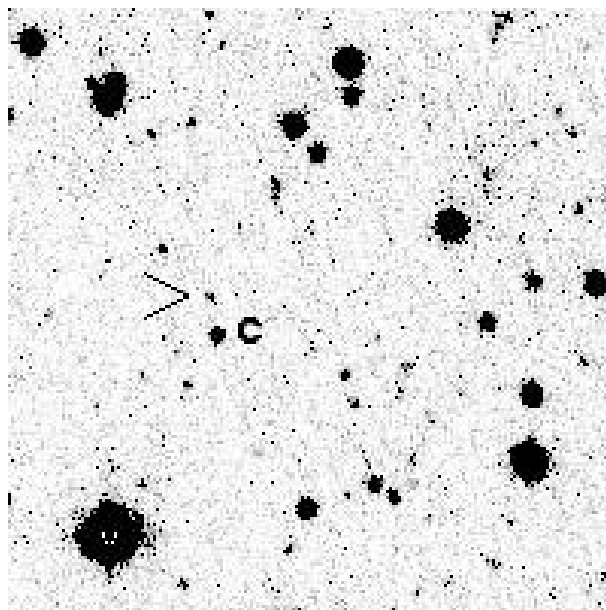


Figure 1. CCD image of the optical counterpart of the GRB 970508. Date of the exposure for the coadded image is 15.994 May 1997 (J.D. 2450584.494)

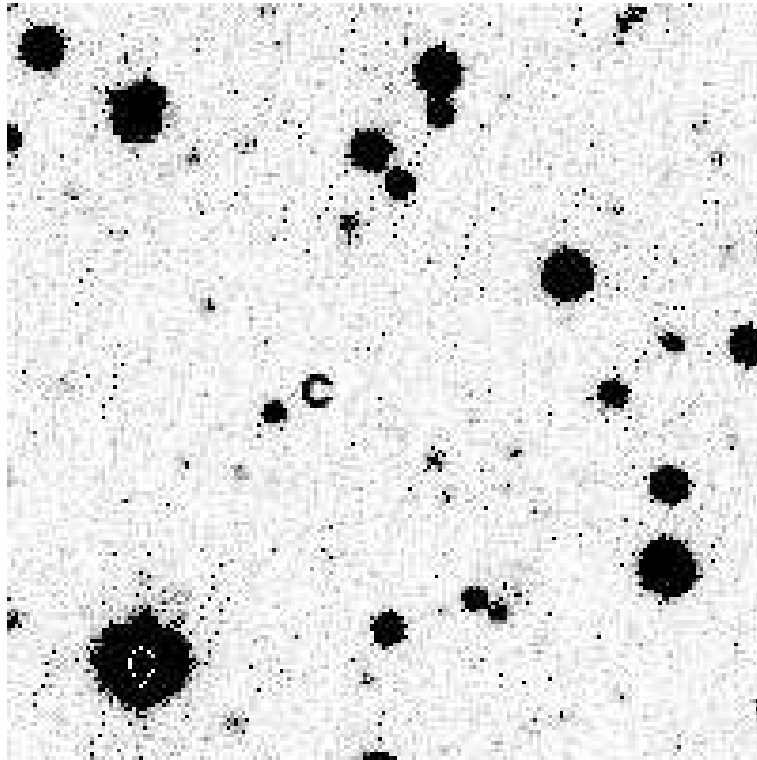


Figure 2. CCD image of the optical counterpart of the GRB 970508. Date of the exposure for the coadded image is 01.001 Jun. 1997 (J.D. 2450600.501)

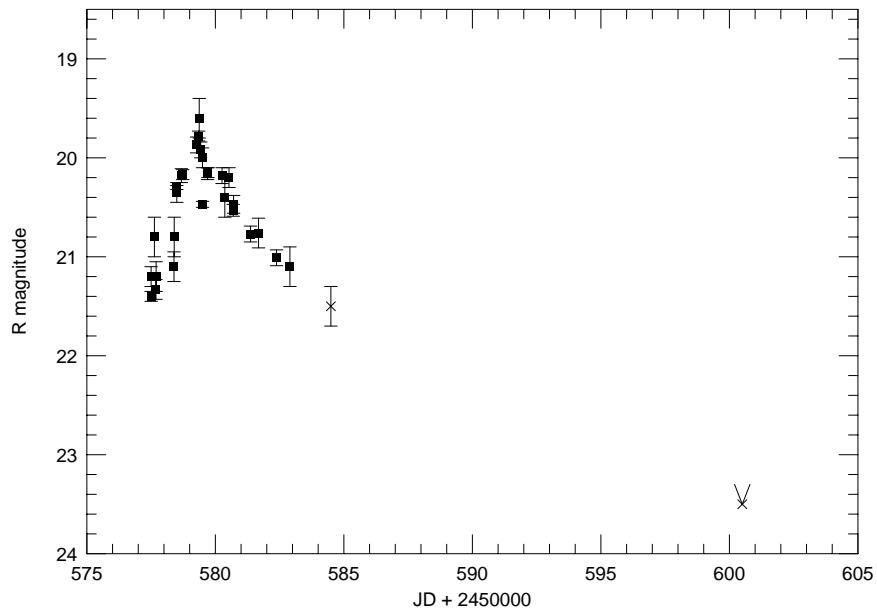


Figure 3. R lightcurve of the optical counterpart of the GRB 970508 based on the brightness data published in the IAU Circulars (see References). The x represents the brightness estimation made at the Konkoly Observatory

Table 1. Brightness data of the GRB 970508 in the R band

Date UT. (1997 May)	J.D. 2450000+	m(R)	err.	source
09	577.500	21.2	.1	Galama et al., 1997
09	577.500	21.4	.05	Schaefer et al., 1997
09.128	577.628	20.8	.2	Castro-Tirado et al., 1997
09.19	577.690 (Gunn r)	21.33	.1	Djorgovski et al., 1997a
09.195	577.695 (Gunn r)	21.2	.15	Djorgovski et al., 1997b
09.89	578.390	21.1	.15	Kopylov et al., 1997
09.899	578.399	20.8	.2	Castro-Tirado et al., 1997
10	578.500	20.3	.02	Schaefer et al., 1997
10	578.500	20.35	.1	Galama et al., 1997
10.178	578.678 (Gunn r)	20.18	.07	Djorgovski et al., 1997b
10.23	578.730 (Gunn r)	20.17	.05	Djorgovski et al., 1997a
10.77	579.270	19.87	.08	Kopylov et al., 1997
10.85	579.350	19.78	.05	Mignoli et al., 1997
10.872	579.372	19.6	.2	Castro-Tirado et al., 1997
10.93	579.430	19.92	.08	Kopylov et al., 1997
11	579.500	20.0	.1	Galama et al., 1997
11	579.500	20.47	.03	Schaefer et al., 1997
11.198	579.698 (Gunn r)	20.16	.06	Djorgovski et al., 1997b
11.21	579.710 (Gunn r)	20.15	.05	Djorgovski et al., 1997a
11.76	580.260	20.18	.08	Kopylov et al., 1997
11.868	580.368	20.4	.2	Castro-Tirado et al., 1997
12.03	580.530	20.2	.1	Groot et al., 1997
12.195	580.695 (Gunn r)	20.53	.06	Djorgovski et al., 1997b
12.21	580.710	20.47	.09	Garcia et al., 1997
12.87	581.370	20.77	.08	Kopylov et al., 1997
13.18	581.680 (Gunn r)	20.76	.15	Djorgovski et al., 1997c
13.88	582.380	21.01	.08	Kopylov et al., 1997
14.40	582.900	21.1	.2	Chevalier et al., 1997
15.99	584.494	21.5	.2	present paper
Jun 1.00	600.501	23.5	.2	present paper (upper limit)

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- Castro-Tirado, A.J. et al., 1997, *IAU Circular*, No. 6657
Chevalier, C. et al., 1997, *IAU Circular*, No. 6663
Djorgovski, S.G. et al., 1997a, *IAU Circular*, No. 6655
Djorgovski, S.G. et al., 1997b, *IAU Circular*, No. 6658
Djorgovski, S.G. et al., 1997c, *IAU Circular*, No. 6660
Galama, T.J. et al., 1997, *IAU Circular*, No. 6655
Garcia, M. et al., 1997, *IAU Circular*, No. 6661
Groot, P.J. et al., 1997, *IAU Circular*, No. 6660
Kopylov, A.I. et al., 1997, *IAU Circular*, No. 6663
Mignoli, M. et al., 1997, *IAU Circular*, No. 6661
Schaefer, B. et al., 1997, *IAU Circular*, No. 6658

CORRIGENDA

Correction to IBVS No.4418: In order to bring to accordance Table 1 and Figure 2, it is necessary to interchange star's Nos. 4 and 5 in Table 1 and to attribute No.6 to that one of two stars with number 5 in Figure 2 that has coordinates Xpixel=359 and Ypixel=341.

Y. Malakhova

The eclipsing binary nature of NSV 07457 (see IBVS No. 4365) was discovered earlier by J. Vandebroere (IBVS No. 3946), see also Diethelm's note published in IBVS No. 4011.

The Editors