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ON STAR-LIKE IMAGES NEAR THE GAMMA BURST SOURCE GBS 1901+14

A careful examination of the sky area around the position of the gamma-ray burst source GBS 1901+14 from 1979 March 24/25/27 (Mazets, E.P., et al. 1981, *Astrophys.Space Sci.* **80**, 3-143) has been performed using the collection of archival plates at the Sonneberg Observatory. Three unique star-like objects have been found on three of altogether 1910 plates, taken by H. Huth and predecessors. They were examined for a probable optical counterpart of the above mentioned gamma-ray burst.

The search enclosed 1762 sky patrol plates of the years 1928 to 1984 and 148 plates taken with the 17/120 cm and the 14/70 cm astrographic cameras in the years 1929 to 1961. The exposure times of the plates range from 30 to 60 minutes. The brightness of the three images is considerably greater than the limiting magnitude of the plates of ≈ 13 . The middle of the exposure times of the respective patrol plates and the estimated image positions are given in the following table:

Table I				
Heliocentric JD				
	Plate	(Date UT)	α 1950.0	δ 1950.0
Image 1	Te20 646	2438594.518 (1964 July 18)	$19^{\text{h}}0^{\text{m}}47^{\text{s}}\pm 5^{\text{s}}$	$15^{\circ}5' \pm 1'$
Image 2	Te2 1994	2437189.344 (1960 Sep. 11)	$18^{\text{h}}59^{\text{m}}47^{\text{s}}\pm 5^{\text{s}}$	$13^{\circ}48' \pm 1'$
Image 3	T 5053	2432803.386 (1948 Sep. 8)	$19^{\text{h}}3^{\text{m}}13^{\text{s}}\pm 5^{\text{s}}$	$14^{\circ}6' \pm 1'$

All three images are not distinguishable from normal stars. Image 3 even shows the distortion caused by the objective. The plate 646 is the last of three immediately successive exposures and shows the image to lie on the border of the very narrow error box of GBS 1901+14. In contrast, the other images have probably no connection with the gamma-ray burst source because of their spacing of ≈ 2 arcmin to the error box. However, there exist other possible explanations for such flash-like objects (for example U Geminorum stars).

Investigations at a photometer are in progress in order to provide further arguments concerning the possible explanation of these images to be plate defects.

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