

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS

Number 2180

Konkoly Observatory  
Budapest  
1982 July 23  
*HU ISSN 0374-0676*

ABSENCE OF OPTICAL PULSES IN HD 153919  
(= 4U 1700-37 = V884 Sco)

A possible 97-minute period in the brightness of the X-ray source 4U1700-37 was reported by Matilsky et al. (1978). However, it was shown by Hammerschlag-Hensberge et al. (1979) that, because of the particular window function of the data used by Matilsky et al., the existence of a 97-minute period could not possibly be proved. Subsequently, Kruszewski and collaborators (1978, 1979) reported evidence for a modulation of the visual magnitude of the optical counterpart of this source (HD 153919 = V884 Sco), with a period of  $\sim 90$  minutes and amplitude up to  $\sim 2$  percent. According to Kruszewski et al. (1979, 1980) the modulation appeared only near phase 0.5, i.e. when the X-ray source is in front of the optical companion (an O6 f star).

Recently, Van Paradijs and Van der Woerd (1982) presented the results of observations of the visual brightness of HD 153919, relative to HD 153767, obtained on 6 different nights, all near phase 0.5. No evidence was found for a short-term periodic modulation of the visual magnitude of HD 153919, with an amplitude in excess of 0.004 mag. Since these observations during each night covered less than 3 cycles of 90 minutes, we decided to reobserve the source near phase 0.5 for as long as possible.

The observations were made with the Walraven photometer on the 90 cm Dutch telescope at ESO, on 1982 April 15.18-15.40, April 29.11 - 29.38 and May 2.13 - 2.39 (UT). The corresponding phase intervals are 0.475 - 0.539, 0.558 - 0.637 and 0.443 - 0.519, respectively. As a comparison star we used HD 153767. The observations were made through a 16" diaphragm. The variable and companion stars were observed alternately for 4 times 16 seconds.

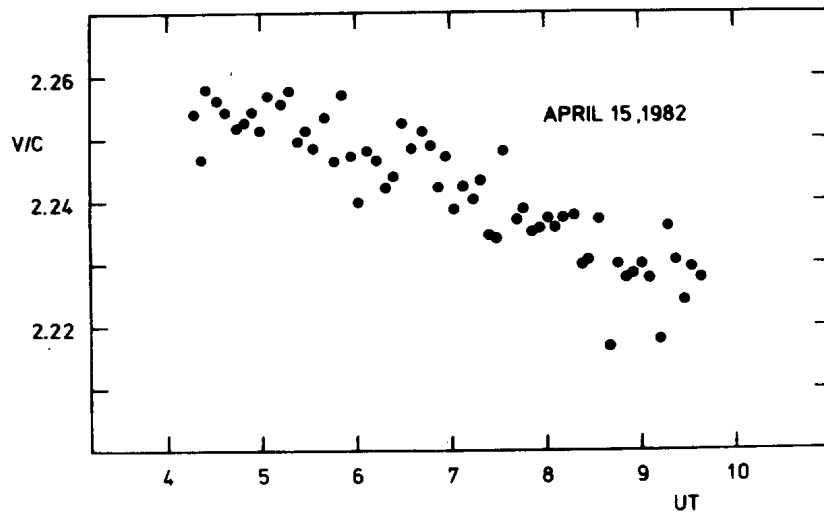


Figure 1 Ratio of the sky-corrected visual brightness of HD 153919 relative to HD 153767, as observed on April 15, 1982

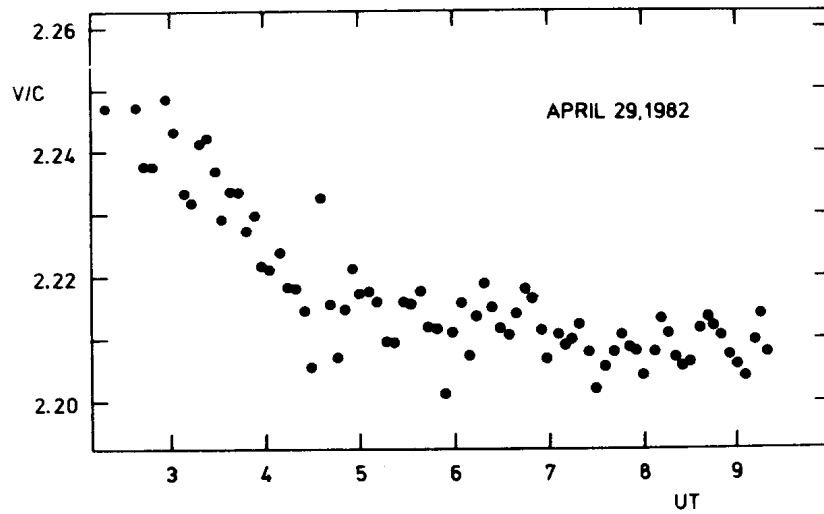


Figure 2 Same for April 29, 1982

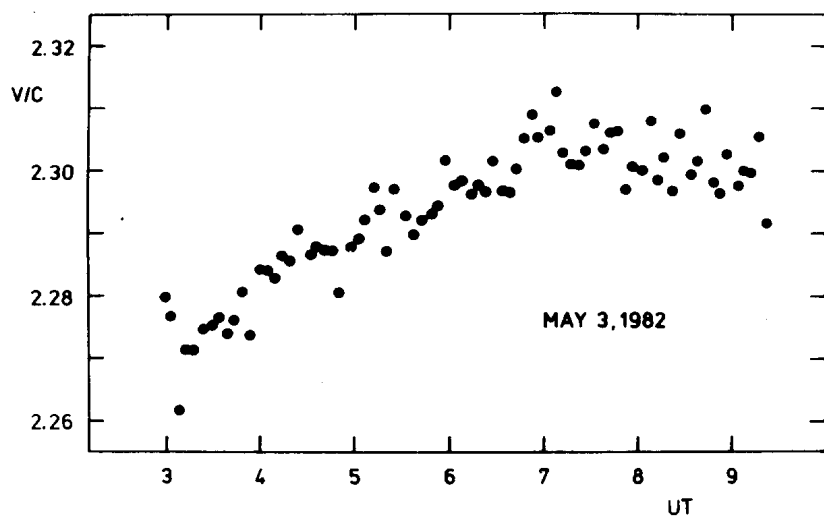


Figure 3 Same for May 3, 1982

Sky measurements were made every 20 to 30 minutes. The ratio of the sky-corrected visual brightness (Walraven V band) of HD 153919 and HD 153767, as observed during the three nights is shown in Figure 1,2 and 3.

It is readily apparent that the visual magnitude of HD 153919 varies on a time scale of many hours, out that any modulation with a period near 90 minutes is not detectable in our data.

The r.m.s. deviation of a single measurement of the ratio of the visual magnitude of HD 153919 and HD 153767 is  $\pm 0.0019$  mag on April 15,  $\pm 0.0021$  mag on April 29 and  $\pm 0.0022$  mag on May 2. The amplitude of any periodic modulation of the visual magnitude of HD 153919 is certainly less than 0.001 mag. This is at least and order of magnitude less than the values reported by Kruszewski et al. (1978, 1979).

The present results reinforce a previous conclusion (Van Paradijs and Van der Woerd, 1982) that the periodic modulation of the optical brightness of HD 153919, reported by Kuzzewski et al. (1978, 1979), if real, must have been an ephemeral phenomenon.

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