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ON THE DECREASE OF THE ULTRAVIOLET FLICKERING
 OF T CORONAE BOREALIS

We have observed the recurrent Nova T CrB in the ultra-violet using pulse counting photometers and the instrumentation at the 122 cm telescope of Asiago (see Bernacca et al., 1973). We have six nights of observations in May and June 1975 and June 1976 (three nights each year, a total of 11 hours of observation). This year's data, taken with the two channel photometer, show a marked lack of the flickering reported earlier by Walker (1957) and seen also from Asiago in 1975.

The table below lists the observers' name, dates, Julian Days, orbital phases ϕ (according to Kraft, 1958), rough estimates of the average amplitude \bar{a} of the flickering (in magnitudes), the maximum variation A (in magnitudes), the average interval t between maxima and the duration T of each night's observation.

Observer	Date	J.D.	ϕ	\bar{a}	A	t	T
Walker	29 May 1954	2434893	0.51	0.106	0.49	3.5	106
Walker	1 Jun 1954	2434895	0.52	0.072	0.28	4.0	100
Bianchini	16 May 1975	2442549	0.14	0.1	0.35	3.5	100
Bianchini	30 May 1975	2442563	0.21	0.1	0.42	3.5	100
Bianchini	4 Jun 1975	2442568	0.23	0.089	0.30	3.75	137
Middleditch- Bianchini	18 Jun 1976	2442948	0.90	0.05	0.10	3.5 (6.7)	68
Middleditch- Bianchini	20 Jun 1976	2442950	0.91	0.05	0.10 ~ 4		171
Middleditch	21 Jun 1976	2442951	0.91	0.030	0.10 ~ 4		137

Fourier analysis of the last five nights data reveals no consistent periodicities to below 0.005 magnitudes, although the data taken on 4 June 1975 and 18 June 1976 tend to indicate 3.6-minute and 6.7-minute components. Kraft's epoch for $\phi=0$ (J.D. 2432046.0) corresponds to the blue star being nearer to the Earth. The lack of flickering at phase 0.9 can be explained in two different ways. The first explanation has the blue star itself with

a hot variable spot on its surface which is visible at $\phi=0.14$ and $\phi=0.5$ but occulted by the star at $\phi=0.9$, contrary to the currently accepted theory fixing the flickering at the stream-disk intersection which should be visible at $\phi=0.9$ according to Kraft's inclination of 68° .

The second hypothesis considers the red giant star not filling, at present, its Roche-lobe. Each of these two explanations would naively predict a decrease in the average U light of at least 0.2 magnitudes which has not been observed. Further U observations should help.

ANTONIO BIANCHINI

JOHN MIDDLEDITCH

Asiago Astrophysical Observatory
of the University of Padua

References:

- Bernacca, P.L., et al.: 1973, Asiago Scientific and Technical Report No.1
Kraft, R.P.: 1958, Astrophysical Journal 127, 625
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