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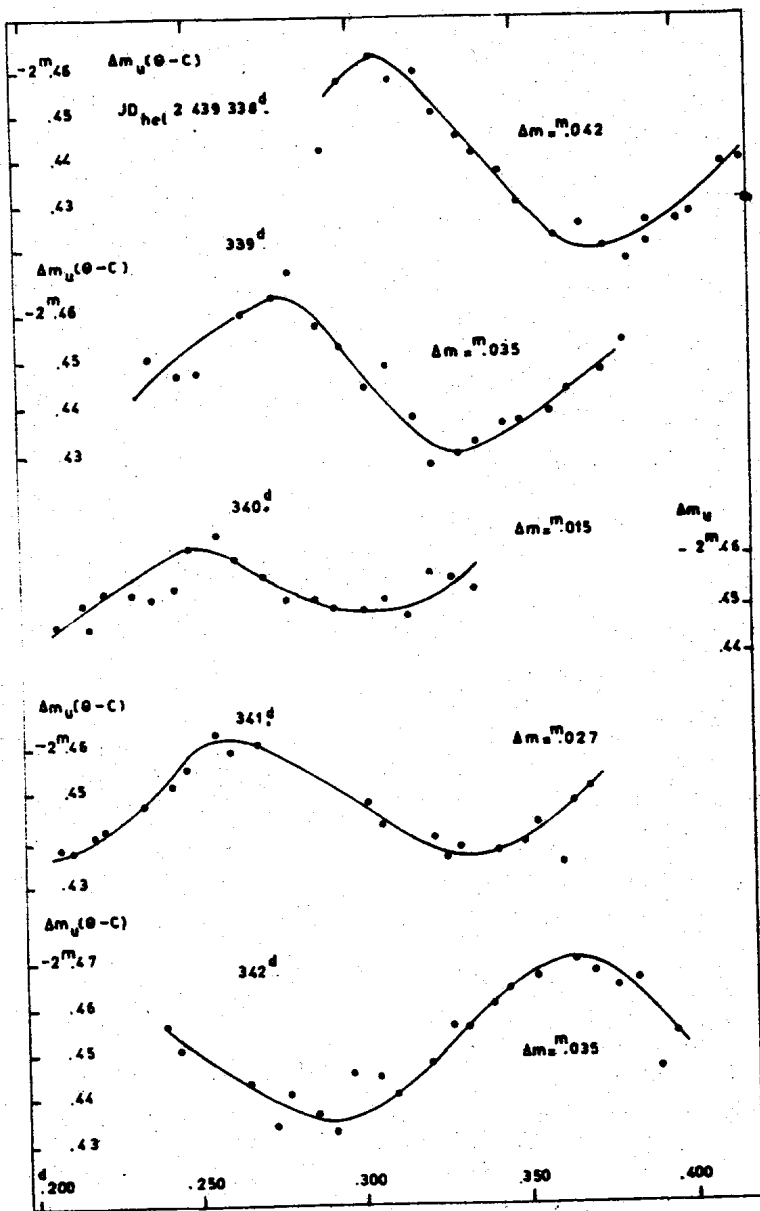
THE BEAT-PERIOD IN THETA OPHIUCHI

The first systematic photoelectric observations of Theta Oph were made in 1958 on A. VAN HOOFF's request, with the 1,50 m - telescope of the Boyden Observatory at Bloemfontein, by Dr. H. HAFFNER, G. LYNKA and L. O. LODEN. All their observations of the variable Theta Oph and of the comparison star 44 Oph were made in ultraviolet light. Prof. A. VAN HOOFF published the first photoelectric light curves of this Beta CMa star. He mentioned a short period $P_0 = 0^d.140531$ and a beat period of about 6 days.

In 1966, we intended to start with a new search about these periods. The variable star Theta Oph was observed very intensively in 1966, during the months June, July and August, with the same instruments as in 1958. Our photoelectric observations were carried out in three colours: U, B and V. The light curves derived, by means of the comparison star HD 158643, show very clearly the variability of the amplitude from night to night.

The short period cycle of the light variations has the value $P_0 = 0^d.140531$ as VAN HOOFF (1) found in 1958. This value fits our observations very well, but the amplitude seems to change with a period of about 4 days.

The light curves presented in this paper are a selection out of 23 ones obtained in 1966.



The differences between maximum and minimum light obtained from the ultraviolet light curves are presented in Table 1. We are only giving the values out of two intensive observation periods.

Table 1.

JD 2 439	$\Delta m_u (\ominus - \text{C})$	Min.	Max.
309		$0^m.030$	
310			.032
311			.036
313		.032	
315			.046
316			.043
317		.030	
319			.036
336		.026	
337			.037
338			.042
339			.035
340		.015	
341			.027
342			.035
343			.034

It is possible to indicate the beat period of 4 days also in Fig. 1 of VAN HOOFF's paper (1).

In Table 2, we are giving our estimates of the amplitudes from his light curves.

Table 2.

JD 2436 380	$\Delta m_u = 0^m.04$	Max.
382	.02	Min.
413	.02	Min.
414		
415	.04	Max.

The best value of the beat period that fits all these observations is:

$$P_b = 3^d.9\dots;$$

From the results in Table 1 we see that the values of the amplitudes in the maxima and in the minima are not constant. They seem to change with another long period of about 16 days (maybe $4 \times 3^d.9 = 15.6$).

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(1) VAN HOOFF, A. *Zs.f. Astroph.* 54, 255 (1962).