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DIFFERENTIAL UB<sub>V</sub>-PHOTOMETRY OF THE CHEMICALLY PECULIAR STAR HD 135297

Babcock (1958) concluded from his 3 Zeeman plates of HD 135297 that this should have a reversing magnetic field. According to the concept of the oblique rotator this is indicative for photometric variability and therefore, I observed this star in UB<sub>V</sub> relative to the F2-type comparison star HD 135405 at the 60 cm Bochum telescope on La Silla on 12 nights from May 6 to June 16, 1970. The differential magnitudes (based usually on 3 deflections with a typical internal standard deviation of 0.003 mag) are given in the Table.

Table  
 Log of observations

JD (2440000+)	$\Delta U$	$\Delta B$	$\Delta V$
713.80	-0.885	-0.867	-0.431
714.58	896	870	429
714.75	885	869	434
714.83	889	874	426
715.60	875	865	424
715.72	869	873	424
721.73	886	869	432
725.67	876	878	434
727.70	889	878	437
730.71	873	875	427
745.67	899	886	435
749.65	867	878	426
750.62	896	886	439
752.65	873	880	429
754.62	-0.872	-0.877	-0.426

Thus the  $\Delta U$ -values scatter around the mean  $\overline{\Delta U} = -0.882$  with a standard deviation  $\sigma = 0.0105$ , the  $\Delta B$ -values around  $\overline{\Delta B} = -0.875$  with  $\sigma = 0.0063$  and the  $\Delta V$ -values around  $\overline{\Delta V} = -0.430$  with  $\sigma = 0.0048$ .

It should be noted that the differential magnitudes are given in the ob-

server's system.

Looking at this data one obtains a weak indication that the  $\Delta U$ -values show a periodicity of about 3 days or related to it, but a really meaningful period search is precluded at the moment by the uneven coverage of the observing period and by the overall paucity of data in connection with the low amplitude indicated by the standard deviations.

A further check was made using absolute Strömgren-photometry carried out from March 25 to April 2, 1974, the results of which have been published by Maitzen (1976). This photometry contained nearly exclusively Ap-stars, and thus we can only hope to find indications of variability by forming differences between HD 135297 and at least two other Ap-stars which were always observed closely before or after it. This way I found HD 151525 and HD 137949 as so-called "comparison stars".

Only the v-filter measurements were regarded since they should exhibit the largest variation, if any.

Even under these relatively unusual circumstances I obtained:

$$\sigma(\Delta v, \text{HD } 151525) = 0.0085 \quad (7 \text{ measurements})$$

and

$$\sigma(\Delta v, \text{HD } 137949) = 0.0068 \quad (5 \text{ measurements}).$$

This is in surprising agreement with the sigma of the differential UBV-measurements. Therefore, one can draw the conclusion that the variability of HD 135297 is only marginal.

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