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uvby PHOTOMETRY OF THE Ap STAR HD 145102

Between February 22 and March 10, 1978 uvby photometric measurements of the silicon Ap star HD 145102 were made with the ESO 50 cm telescope at La Silla (Chile). As the weather conditions on February 25 and 26 were very bad, no observations were obtained in these nights.

Each observation sequence contained measurements (15s integrations in each filter) of the program star P and three comparison stars C1 (HD 146284), C2 (HD 145353) and C3 (HD 146606) as follows: C1 - P - C2 - P - C3 - P - C3 - P - C2 - P - C1. All three comparison stars proved to be constant : the standard deviation of their individual differential instrumental magnitudes (computed for each sequence) to the mean value (given in Table 1) during the observation run is in each filter always smaller than $0\overset{m}{.}004$.

Table 2 gives the differential magnitudes Δu, Δv, Δb and Δy for HD 145102 relative to HD 146606. They were determined as the mean value of the three numbers (P-x) + <x-C3>, each resulting from all measurements of P and x during one sequence. Here, x is or C1, or C2, or C3; <x-C3> is the mean difference between x and C3 during the observation run. The table shows that HD 145102 is variable - at least in u - with an amplitude not larger than $0\overset{m}{.}01$. Variability in v, b and y is, with our quoted precision, marginal. To obtain the period of the variation, we used a method based on the technique of Lafler and Kinman (Hensberge et al., 1977). Due to the small amplitude of the variation and due to the fact that we were obliged to observe the star only at the end of the night (due to α), it was not possible to derive the period of variation unambiguously. The following values of the period are not contradictory with our observations: $0\overset{d}{.}539 \pm 0\overset{d}{.}005$, $0\overset{d}{.}584 \pm 0\overset{d}{.}01$, $0\overset{d}{.}772 \pm 0\overset{d}{.}01$, $0\overset{d}{.}873 \pm 0\overset{d}{.}01$, $1\overset{d}{.}17 \pm 0\overset{d}{.}02$, $1\overset{d}{.}41 \pm 0\overset{d}{.}02$, $3\overset{d}{.}44 \pm 0\overset{d}{.}15$, $7\overset{d}{.}0 \pm 0\overset{d}{.}3$. It should be suf-

ficient to observe the star regularly during 4 consecutive nights to derive a definite value for the period of variation.

Table I

	Δu	Δv	Δb	Δy
HD146284-HD145353	0.330	0.229	0.236	0.259
HD146284-HD146606	0.290	0.185	0.252	0.384
HD145353-HD146606	0.040	0.044	0.017	0.125

Table II

<P-C3>

JD	Δu	Δv	Δb	Δy
2443560.868	0.503	0.393	0.417	0.484
61.853	0.494	0.385	0.415	0.482
62.856	0.490	0.383	0.411	0.477
63.874	0.493	0.387	0.414	0.476
66.855	0.488	0.383	0.406	0.478
67.861	0.502	0.395	0.424	0.484
68.854	0.498	0.384	0.408	0.477
69.858	0.487	0.384	0.408	0.477
70.854	0.500	0.387	0.415	0.481
71.860	0.504	0.384	0.417	0.483
72.859	0.495	0.389	0.407	0.480
73.856	0.490	0.385	0.408	0.477
74.863	0.500	0.493	0.419	0.485
75.821	0.494	0.387	0.412	0.478
76.845	0.490	0.384	0.409	0.481

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Reference:

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