uvby PHOTOMETRY OF THE ALGOL VARIABLE HD 224113

The Algol nature of HD 224113 = HR 9049 (B5V, V=6.08, B-V=-.09) was
discovered by Haefner (1981). From uvby photometry obtained in 1970
he derived a value for the orbital period of $2^d.445088$. The incomplete
lightcurve reveals reflection or ellipticity effects, and evidence
of gas streams may be present.

We here present in tabular form a sequence of 4-colour measurements
obtained at the Danish 50cm telescope on La Silla in October 1981.
The measurements have been obtained in a differential way, using two
comparison stars:

C_1	HD 224112	V=6.84	B-V=-.09	A
C_2	HD 223352	V=4.57	B-V=.01	A0V

The star was measured repeatedly during 8 nights between Oct. 9 and
Oct. 18 1981.

Table I gives heliocentric Julian dates, and differences between
HD 224113 and HD 224112 (V=6.84, b-y=-.032, m_1=.116, c_1=.670) in the
standard system of Crawford et al. (1970). The mean error on one single
differential measurement in ΔV, $\Delta(b-y)$, Δm_1 and Δc_1 are resp. .0027,
.0028, .0039 and .0040 magnitudes. The steep decline visible in V on JD2444896
(.1 magnitude in about 80 minutes) represents part of the descending
branch of the primary minimum . The dispersion of the ΔV-values
outside eclipse exceeds two times the statistical mean error on one
measurement as deduced from the differences between the comparison star
measurements. This scatter is due to proximity effects.

Table I

JD 2444800	ΔV	Δ(b-y)	Δm₁	Δc₁	JD 2444800	ΔV	Δ(b-y)	Δm₁	Δc₁
87.6190	-.749	-.007	-.008	-.116	92.5474	-.746	-.003	-.014	-.109
87.6429	-.751	-.008	-.005	-.115	92.5628	-.747	-.004	-.011	-.112
88.5648	-.750	-.007	-.005	-.117	92.5790	-.746	-.007	-.007	-.110
88.5862	-.752	-.004	-.012	-.115	92.5893	-.744	-.008	-.007	-.110
88.6137	-.751	-.008	-.004	-.119	92.5982	-.746	-.006	-.008	-.111
88.6273	-.749	-.007	-.009	-.117	95.5363	-.744	-.004	-.014	-.113
88.6443	-.748	-.008	-.006	-.121	95.5514	-.745	-.007	-.008	-.116
89.5439	-.741	-.002	-.014	-.113	95.5662	-.751	-.003	-.013	-.111
89.5685	-.745	-.002	-.011	-.113	95.5804	-.743	-.008	-.006	-.112
89.5818	-.742	-.006	-.009	-.107	95.5945	-.745	-.009	-.004	-.112
89.5912	-.742	-.004	-.011	-.115	95.6394	-.748	-.008	-.003	-.118
90.5430	-.738	-.006	-.009	-.106	95.6589	-.748	-.007	-.006	-.117
90.5567	-.742	-.006	-.008	-.107	95.6750	-.747	-.006	-.010	-.112
90.5721	-.743	-.007	-.011	-.104	95.6898	-.750	-.005	-.010	-.116
90.5870	-.744	-.003	-.013	-.107	95.7075	-.749	-.003	-.013	-.116
90.5993	-.742	-.008	-.007	-.109	96.5404	-.629	-.003	-.011	-.110
91.5467	-.735	+.000	-.017	-.109	96.5540	-.598	-.003	-.005	-.113
91.5642	-.735	-.004	-.007	-.116	96.5702	-.562	-.008	-.000	-.112
91.5754	-.734	-.004	-.011	-.110	96.5863	-.544	-.000	-.010	-.115
91.5851	-.736	-.003	-.007	-.112	96.5969	-.533	-.004	-.005	-.112
91.5980	-.729	-.005	-.006	-.114					

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References:

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