

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3490

Konkoly Observatory
 Budapest
 10 July 1990
 HU ISSN 0374 - 0676

PHOTOELECTRIC PHOTOMETRY OF RHO CASSIOPEIAE

This paper represents a continuation of previous photoelectric work done on the variable star ρ Cassiopeiae (Leiker, et al., 1989, 1988, 1987). ρ Cassiopeiae (ρ Cas, HR 9045, HD 224014, SAO 035879) is a supergiant (F8p1A) star (Percy & Keith, 1985). It was discovered to be a variable in 1900 by Louise D. Wells (Pickering 1901). Much of the time this star was confined to a brightness between 4.1m and 5.1m (Bailey, 1978). However, between August 1945 and June 1947 ρ Cas decreased in brightness more than a magnitude (Gaposchkin, 1949). After it recovered from this minimum, ρ Cas continued its irregular variation in brightness between 4.1m and 5.1m.

ρ Cas was observed by Leiker and Hoff at the University of Northern Iowa's Hillside Observatory from June 1989 through February 1990. A 0.4 meter Cassegrain telescope and a STARLIGHT-1 photon counting photometer with standard B and V filters was used. HR 9010 (HD 223173, SAO 35761, K3 II, V = 5.51 m, B-V = 1.65) was used as the comparison star. These delta magnitudes are not corrected for color or extinction. Standard deviation (σ) was calculated in the usual manner. Table 1 lists the ΔV and ΔB magnitudes. Figures 1 and 2 are graphical representations of the data presented in Table 1.

This work was supported in part by a computer equipment grant from a Theodore Dunham, Jr. Grant of the Fund for Astrophysical Research.

Table I. ΔV and ΔB magnitudes of ρ Cas obtained by Leiker and Hoff

HJD	ΔV mean	σ	#	HJD	ΔB mag	σ	#
2447703.678	-0.981	0.051	3				
2447771.616	-0.902	0.006	3				
2447803.628	-0.866	0.004	3	2447803.643	-1.078	0.002	3
2447819.611	-0.847	0.005	3	2447819.625	-1.077	0.002	3
2447823.646	-0.846	0.008	3	2447823.664	-1.065	0.002	3
2447833.687	-0.843	0.003	3				
2447839.690	-0.830	0.005	3				
2447844.542	-0.829	0.001	3	2447844.558	-1.056	0.004	3
2447850.521	-0.842	0.006	3	2447850.536	-1.096	0.001	3
2447854.535	-0.857	0.005	3	2447854.551	-1.111	0.003	3
2447860.669	-0.852	0.004	3	2447860.682	-1.118	0.007	3
2447864.605	-0.855	0.005	3				
2447872.602	-0.850	0.006	3	2447872.618	-1.105	0.007	3
2447893.624	-0.888	0.001	3	2447893.636	-1.175	0.007	3
2447897.597	-0.875		1				
2447904.530	-0.920	0.005	3	2447904.548	-1.207	0.009	3
2447906.589	-0.921	0.003	3	2447906.595	-1.211	0.007	3
2447922.536	-0.940	0.001	3				
2447928.528	-0.959	0.009	3				

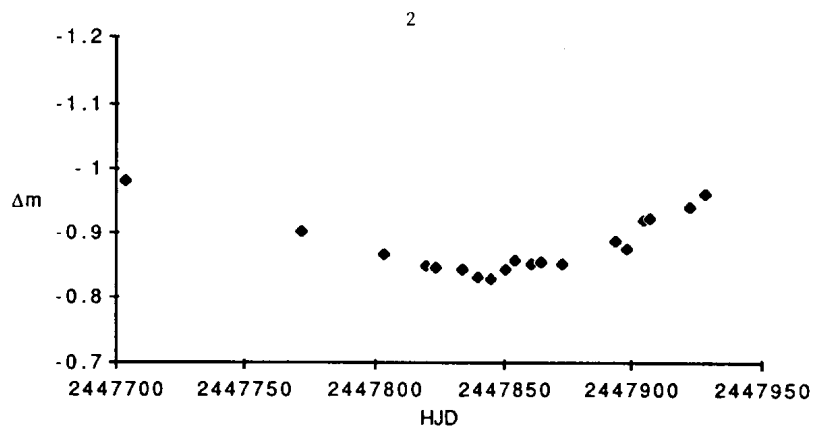


Figure 1. ΔV magnitudes of ρ Cas obtained by Leiker and Hoff

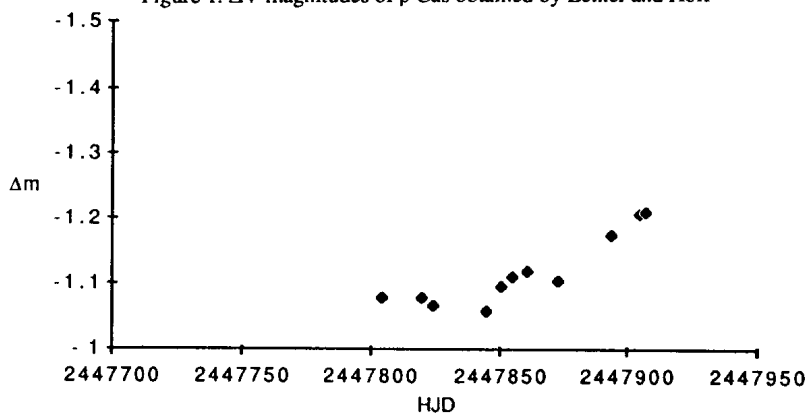


Figure 2. ΔB magnitudes of ρ Cas obtained by Leiker and Hoff

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