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A NEW RED SEMIREGULAR VARIABLE STAR: BD +18^o4590

During the course of photoelectric photometry of Nova HR Delphini, performed with the 40 cm refractor of the Teramo Observatory, it was noticed that the star BD +18^o4590, used as comparison star in 1970, is variable. It was possible to obtain the magnitudes reported in Table 2 (for the years 1970, 1971 and 1972) by means either of the check stars or of other comparison stars sometimes observed together with BD +18^o4590; these magnitudes showed the existence of a brightness variation having an amplitude of about 0^m.2 in V light and a period of 30 days overlapping a much longer wave in the mean brightness.

In 1973 and 1974 the star was observed using for comparison the anonymous star labeled c in Fig. 1; the assumed magnitude and colour are given in Table 1.

Table 1

	V		B-V	Short period cycle	
	max	min		amplitude	period
BD +18 ^o 4590	8.75	9.25	+1.76	0 ^m .2	30 ^d
c		10.35	+1.50		

The observations are reported in Table 2; the data of 1970 and 1973 are also plotted in Fig. 2 (in the remaining years the observations are too scanty to allow a useful graphic representation). The magnitudes of 1973, obtained with the usual technique of the variable stars photometry, are evidently more accurate than the magnitudes of 1970 fortunately recovered by means of the check stars: the mean error of a magnitude is ± 0.01 for 1973 and 1974; ± 0.03 for the other years. The characteristic photometric data for this star, that is listed neither in the General Catalogue of Variable Stars nor in its Special Supplement containing the suspected variables, are given in Table 1. The spectrum is classified in the Draper Catalogue as M₄ and the presence of bright lines is suspected. This new variable star appears to belong to the semiregular red variables classified in the G.C.V.S. as SRa. The period of 30 days, fairly well respected in 1970, appears less sharply defined in 1973, when pronounced irregularities in the light curve are present.

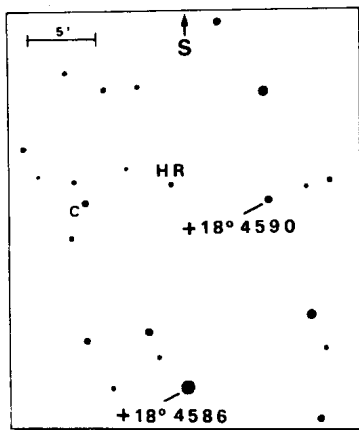


Fig. 1. Finding chart for the comparison star c.

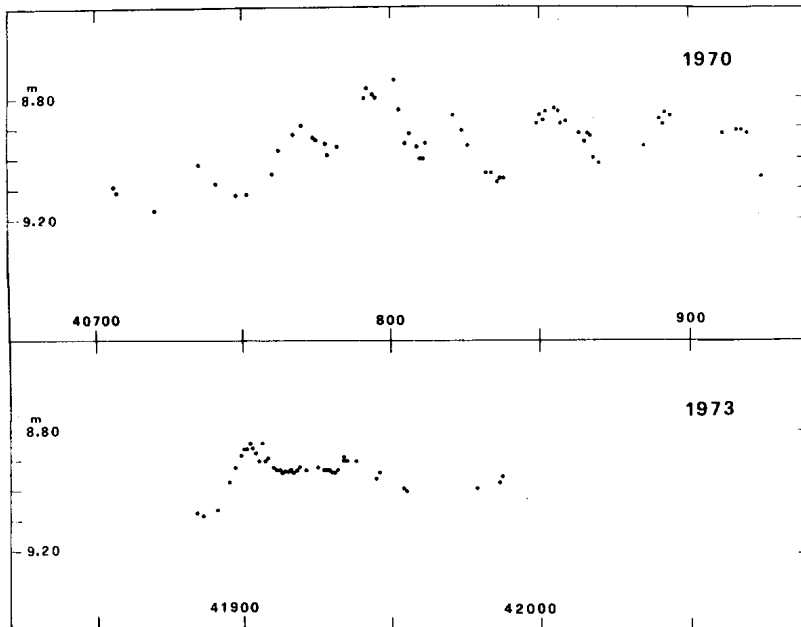


Fig. 2. Photoelectric V lightcurve of BD +18° 4590

Table 2							
Date	V	Date	V	Date	V	Date	V
1970						1973	
J. D.		J. D.		J. D.		J. D.	
2440		2440		2440		2441	
675.614	9.00	821.376	8.86	917.418	8.91	884.393	9.07
706.574	9.09	824.382	8.91	919.226	8.92	886.412	9.08
707.600	9.11	826.353	8.96	924.240	9.06	891.514	9.06
720.572	9.17	832.334	9.05			895.484	8.97
735.575	9.02	834.378	9.05			897.451	8.92
741.571	9.08	836.375	9.08	1971		899.477	8.88
748.495	9.12	837.349	9.07	J. D.		900.494	8.86
751.567	9.12	838.377	9.07	2441		901.531	8.86
760.444	9.05	849.322	8.89	033.641	8.96	902.522	8.84
762.582	8.97	850.303	8.86	056.618	9.00	903.494	8.86
767.471	8.92	851.304	8.88	089.548	9.02	904.379	8.88
770.562	8.89	852.301	8.85	097.564	8.87	.475	8.87
774.422	8.93	855.320	8.84	134.548	9.09	905.399	8.90
775.447	8.94	856.378	8.85	144.388	9.02	906.500	8.84
778.442	8.95	857.421	8.89			907.450	8.90
779.444	8.99	859.285	8.88	1972		908.466	8.89
782.526	8.96	863.442	8.93	J. D.		910.407	8.92
791.381	8.80	865.267	8.95	517.477	9.03	911.400	8.93
792.376	8.77	866.272	8.92	543.355	8.86	912.398	8.93
794.396	8.79	867.292	8.93	544.481	8.86	913.359	8.94
795.475	8.80	868.267	9.00	545.435	8.84	914.341	8.93
801.367	8.75	870.452	9.02	568.535	9.04	915.368	8.93
803.405	8.84	885.274	8.96	625.240	9.13	916.465	8.93
805.445	8.95	890.254	8.87	626.239	9.14	917.454	8.94
807.370	8.92	891.246	8.89	628.246	9.18	918.514	8.93
809.390	8.96	892.303	8.85	634.233	9.26	919.475	8.92
810.406	9.00	894.270	8.86	659.224	8.92	921.421	8.93
811.427	9.01	911.266	8.92	661.251	8.92	925.340	8.92
812.381	8.95	916.282	8.91			927.394	8.93

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