

Two-Color Photometry of V448 Monocerotis

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Abstract

Photoelectric observations with *B* and *V* filters of the eclipsing binary system V448 Monocerotis are presented. The light curves, which cover 30% of the light cycle, show the variability of this system.

The light variation of V448 Monocerotis (BD+1°1515, A2) was discovered by Wachmann (1964) who published a photographic light curve from 394 plates and classified the star as a β Lyrae-type eclipsing binary system. In his light curve the depth of primary minimum is 0^m.44 and that of secondary is 0^m.36. From 39 individual estimates seven times of minimum light were compiled.

The present photoelectric observations of V448 Mon were obtained on three nights in each of 1968 and 1969 with the elbow photometer at the Cassegrain focus of the 72 cm Pennsylvania reflector. Two nearby stars, BD+1°1529 and BD+1°1495, were observed as the comparison and check stars, respectively. These measurements indicate that the comparison star remained constant during the observing interval. Differential extinction corrections were applied to the observations.

The total of 175 observations is given in Table I. The magnitude differences, Δm , are in the sense (variable minus comparison star). The ephemeris given

by Wachmann,

Min. I = JD 2432888.517 + 1.1184666E, was used to determine the phase of each observation and the light curves are shown in Fig. 1. Although the present observations of this binary system cover only 30% of the cycle, the light variability is clearly shown.

Although the essential part of the eclipse is not included in the present observations, there is a clear necessity for a revised ephemeris.

Observation of V448 Mon has been discontinued in our program, because of the low declination of the star.

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Reference

Wachmann, A. A. 1964, Astr. Abh. Hamb., 7(3), 157.

Table I. Yellow and Blue Observations of V448 Mon

JD Hel. 2400000+	Δm_y	JD Hel. 2440000+	Δm_y	JD Hel. 2400000+	Δm_b	JD Hel. 2440000+	Δm_b
39874.6364	-0.594	229.6365	-0.514	39874.6358	-0.669	229.6462	-0.587
.6386	0.601	.6453	0.537	.6378	0.677	232.5607	0.681
.6435	0.612	.6469	0.535	.6441	0.669	.5687	0.666
.6450	0.618	232.5698	0.610	.6457	0.667	.5705	0.666
.6517	0.624	.5712	0.597	.6510	0.672	.5774	0.672
.6532	0.622	.5781	0.615	.6524	0.670	.5790	0.674
.6608	0.624	.5798	0.612	.6616	0.677	.5923	0.675
.6682	0.618	.5934	0.613	.6674	0.657	.5943	0.660
.6703	0.620	.5951	0.611	.6694	0.661	.6033	0.702
39901.6019	0.604	.6073	0.629	39901.6026	0.665	.6087	0.679
.6142	0.613	.6097	0.619	.6135	0.672	.6208	0.699
.6210	0.598	.6217	0.635	.6215	0.664	.6232	0.696
.6296	0.630	.6243	0.621	.6290	0.666	.6314	0.693
.6349	0.618	.6328	0.611	.6355	0.643	.6338	0.697
.6377	0.635	.6347	0.613	.6371	0.659	.6474	0.710
.6428	0.615	.6482	0.652	.6436	0.652	.6489	0.714
.6443	0.620	.6500	0.642	.6450	0.660	.6495	0.699
.6492	0.608	.6573	0.637	.6498	0.655	.6564	0.699
.6686	0.616	.6587	0.635	.6678	0.644	.6580	0.694
.6670	0.612	.6698	0.608	.6693	0.651	.6689	0.664
.6748	0.616	.6715	0.613	.6755	0.655	.6706	0.665
.6816	0.587	.6800	0.610	.6807	0.652	.6791	0.674
.6873	0.579	.6816	0.611	.6880	0.640	.6808	0.680
.6938	0.592	.6960	0.612	.6931	0.636	.6941	0.661
.6951	0.613	.7028	0.617	.6945	0.633	.6953	0.661
.6998	0.600	.7043	0.610	.7005	0.614	.7019	0.680
.7014	0.603	.7129	0.603	.7022	0.620	.7035	0.674
.7082	0.594	.7154	0.606	.7073	0.632	.7121	0.667
39904.5253	0.623	.7230	0.584	39904.5245	0.667	.7139	0.669
.5331	0.621	.7246	0.584	.5321	0.680	.7222	0.655
.5380	0.623	.7311	0.596	.5387	0.656	.7238	0.648
.5444	0.624	.7327	0.581	.5452	0.669	.7302	0.652
.5513	0.597	.7396	0.597	.5505	0.649	.7319	0.649
.5561	0.605	.7399	0.583	.5568	0.672	.7387	0.663
.5575	0.607	.7413	0.584	.5583	0.664	.7392	0.658
.5649	0.602	235.8034	0.543	.5642	0.664	.7422	0.633
.5698	0.598	.8050	0.546	.5707	0.662	235.8025	0.568
.5753	0.596	.8124	0.527	.5764	0.658	.8042	0.582
.5816	0.605	.8142	0.535	.5809	0.672	.8116	0.592
.5859	0.608	.8190	0.544	.5865	0.665	.8131	0.592
40229.6226	0.431	.8208	0.541	40229.6219	0.467	.8181	0.582
.6268	0.480	.8256	0.539	.6257	0.515	.8201	0.593
.6351	-0.510	.8270	-0.533	.6341	0.566	.8262	0.590
				.6358	0.574	.8277	-0.591
				.6448	-0.596		

Figure 1. Blue and yellow light curves and the color curve of V448 Monocerotis.

