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PHOTOELECTRIC MINIMA OF ECLIPSING BINARIES

The following table gives photoelectric minima obtained during the years 1987/88 at the Ege University Observatory, Izmir (Turkey) and the Nürnberg Observatory (Germany). Minima of eclipsing binaries observed at both observatories 1960-1986 were published in Astr. Nachr. 288, 69 (1964); 289, 191 (1966); 291, 111 (1968); I.B.V.S. No. 456 (1970), 530 (1971), 647 (1972), 937 (1974), 1053 (1975), 1163 (1976), 1358 (1977), 1449 (1978), 1924 (1981), 2189 (1982), 2385 (1983), 2793 (1985) and 3078 (1987).

The table gives the heliocentric minima, three different O-C's, the type of filter, UBV, the abbreviations of the names of the observers and the type of the instruments used (Izmir: 48 cm Cassegrain, Nürnberg: 34 cm Cassegrain, both with phototube 1P21).

Abbreviations of the observer's names:

Bk = B. Kilinc	Sk = S. Skaberna
Ca = M. C. Akan	Sn = S. Evren
Fr = P. Friedrich	Sr = C. Sezer
Gd = N. Güdür	St = S. Strecker
Gl = Ö. Gülmen	Tn = Z. Tunca
Gr = R. Gröbel	Va = V. Keskin
Hb = H. Baysal	Wk = M. Wieck
Ib = C. Ibanoglu	Wu = E. Wunder
Ls = G. Lichtschlag	Zk = Z. Eker

Remarks:

O-C (I): GCVS, Moscow 1985 - 1987.

O-C (II): SAC 60, Krakow 1988.

O-C (III): **BX And:** $2446359.5597+0^{d}.61011255 \cdot E$ (Z. Eker, N. Güdür, Ö. Gülmen, V. Keskin, B. Kilinc, C. Sezer, IBVS 3266, 1988)

V367 Cyg: $2434266.337+18^{d}.59773 \cdot E$ (C. Akan, Astrophys. Space Sci., 135,157, 1987)

Table

Star	Min. hel. 244	O-C (I)		O-C (II)	O-C (III)	Filt.	Observer	Instr.	Rem.
RT And	7015.4610	-0.0007		-0.0031		V	Wu	34	
BX And	7040.4438	-0.0111	=	-0.0111	-0.0015	B, V	Ca/Gd	48	
	7043.4947	-0.0108	=	-0.0108	-0.0012	B, V	Sr/Zk	48	
	7062.4079	-0.0111	=	-0.0111	-0.0015	B, V	Sr/Zk	48	
	7063.3246	-0.0096	=	-0.0096	+0.0001	B, V	Gl/Zk	48	Min II
	7439.460:	-0.010:	=	-0.010:	+0.001:	B, V	Bk/Gd/Gl	48	
	7440.3766	-0.0089	=	-0.0089	+0.0025	B, V	Sr/Zk	48	Min II
	7455.3223	-0.0110	=	-0.0110	+0.0005	B, V	Va/Zk	48	
00 Aql	6976.4984	-0.0007	=	-0.0007		V	Wu	34	Min II
	7263.5923	-0.0025	=	-0.0025		V	Wu	34	
	7326.4345	-0.0020	=	-0.0020		V	Wk/Wu	34	
SS Ari	7206.253:	-0.071:		-0.004:		V	Ls/Sk/Wu	34	
	7511.3531	-0.0752		-0.0018		V	Fr/St/Wu	34	Min II
TZ Boo	6909.391	-0.057	=	-0.057		V	Ls/Gr	34	
	7206.5461	-0.0636	=	-0.0636		V	Gr/Ls/Wu	34	
44 i Boo	6869.415	+0.014		-0.004		V	Ls/Wu	34	Min II
	6924.456	+0.019		0.000		V	Gr	34	
TW Cas	7467.4358:	-0.0058:	=	-0.0058:		V	Wu	34	
V367 Cyg	7359.056	-0.182		-0.003	-0.083	B, V	Ib/Sn/Tn	48	
V1073 Cyg	7326.4385	-0.0301		-0.0041	= -0.0041	B, V	Sr/Zk	48	
	7348.4413	-0.0314		-0.0052	= -0.0052	B, V	Bk/Gd	48	
	7350.4067	-0.0306		-0.0045	= -0.0045	B, V	Hb/Sr	48	Min II
	7357.482:	-0.028:		-0.002:	= -0.002:	B, V	Bk/Sr	48	Min II
	7377.5175	-0.0320		-0.0057	= -0.0057	B, V	Sr/Zk	48	
V1425 Cyg	6692.3144	+0.0043	=	+0.0043	-0.0009	B, V	Gl/Zk	48	Min II
	6988.507	+0.007	=	+0.007		V	Ls/Sk	34	
	7035.4706	+0.0065	=	+0.0065	+0.0011	B, V	Gl/Zk	48	Min II
	7047.3698	+0.0080	=	+0.0080	+0.0026	B, V	Gd/Zk	48	
TZ Dra	7071.482	-0.004		-0.002		V	Ls/Sk/Wu	34	
CV Dra	7276.405:				-0.004:	V	Wk/Wu	34	
AK Her	7294.4624	-0.0013		-0.0129		V	Ls	34	
V450 Her	7239.5911	-0.2438		+0.0236		V	Gr	34	

Star	Min. hel. 244	O-C (I)	O-C (II)	O-C (III)	Filt.	Observer	Instr.	Rem.
RT Lac	7004.3813	-0.d0423	-0.d0659	-0.d0376	B	Sn/Va	48	
	7004.4026	-0.0210	-0.0446	-0.0163	V	Sn/Va	48	
	7065.2953	-0.0157	-0.0399	-0.0107	B	Ib	48	
	7065.2911	-0.0199	-0.0441	-0.0149	V	Ib	48	
	7354.4996	-0.0266	-0.0537	-0.0201	B	Ca/Sn	48	
	7354.4980	-0.0282	-0.0553	-0.0217	V	Ca/Sn	48	
	7387.4686	-0.0382	-0.0737	-0.0316	B	Ca/Sn	48	Min II
	7387.4755	-0.0313	-0.0668	-0.0247	V	Ca/Sn	48	Min II
	7425.5274	-0.0340	-0.0619	-0.0272	B	Ca/Tn	48	
	7425.5279	-0.0335	-0.0614	-0.0267	V	Ca/Tn	48	
XY Leo	7275.4007	+0.0114 =	+0.0114		V	Ls/Sk	34	
XZ Leo	6910.4568	+0.0026	+0.0069		V	Ls/Sk/Wu	34	
AM Leo	6899.426:	+0.007: =	+0.007:		V	Ls/Wu	34	
FL Lyr	6925.4551	-0.0024	+0.0057		V	Ls/Wu	34	
U Peg	7070.3528	-0.0329	-0.0302		V	Ls/Sk/Wu	34	
RW Per	7207.426:	+0.013:	-0.017:		V	Gr/Ls/Wu	34	
β Per	7069.445	+0.014	+0.012		V	Wu	34	
UV Psc	7094.3872	-0.0047 =	-0.0047	-0.0021	B	Ca/Sn	48	
	7094.3877	-0.0042 =	-0.0042	-0.0016	V	Ca/Sn	48	
	7410.3932	-0.0034 =	-0.0034	-0.0006	B	Ca/Sn	48	
	7410.3956	-0.0010 =	-0.0010	+0.0018	V	Ca/Sn	48	
	7434.5021	-0.0039 =	-0.0039	-0.0010	B, V	Ca/Va	48	
V471 Tau	7064.39720	+0.00068		+0.00066	B	Ca/Sn	48	
	7065.43965	+0.00077		+0.00075	B	Ib	48	
	7066.48180	+0.00055		+0.00053	B	Tn	48	
	7448.50870	+0.00031		+0.00029	B	Ca/Ib	48	
V781 Tau	7206.436:	-0.004:			V	Gr/Sk	34	
W UMa	6828.3678	-0.0061 =	0.0061		V	Ls/Wu	34	
AG Vir	7262.3659	+0.0033	+0.0186		V	Wu	34	Min II
BD +13°4708	7385.3933			+0.0020	B	Ca/Va	48	
	7385.3975			+0.0062	V	Ca/Va	48	

V1073 Cyg: $2444502.8652+0^{d}.7858551 \cdot E$ (Z. Aslan, T. J. Herczeg, IBVS 2478, 1984)

V1425 Cyg: $2440400.9457+1^{d}.2523877 \cdot E$ (Z. Eker, N. Güdür, Ö. Gülmen, V. Keskin, C. Sezer, Astrophys. Space Sci., 146,283, 1988)

CV Dra: $2447305.437+0^{d}.617617 \cdot E$ (F. Agerer, O. Lichtenknecker, IBVS 3213, 1988)

RT Lac: $2444873.3648+5^{d}.0739496 \cdot E-2^{d}.7 \cdot 10^{-8} \cdot E^{2}$ (A. Y. Ertan, S. Evren, C. Ibanoglu, O. Tümer, Z. Tunca, Astrophys. Space Sci., 93,431, 1983)

UV Psc: $2444932.2985+0^{d}.86104771 \cdot E$ (C. Ibanoglu, Astrophys. Space Sci., 139,139, 1987)

V471 Tau: $2440610.06614+0^{d}.52118301 \cdot E$ (S. Evren, C. Ibanoglu, IBVS 2573, 1984)

BD +13°4708: $2446730.18247+0^{d}.7272018 \cdot E$ (R. L. Walker, IBVS 3160, 1988)

The (O-C)'s for secondary minima (Min II) were calculated on the supposition, that they are symmetric between primary minima (if no special data are given).

The sign = between O-C (I) and O-C (II) indicates that the elements (I) and (II) are equal.

The sign: means that the time of minimum (last decimal) is uncertain.

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