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PHOTOELECTRIC MINIMA OF ECLIPSING BINARIES

The following Table gives photoelectric minima obtained during the years 1980/81 at the Ege University Observatory, Izmir (Turkey) and the Nürnberg Observatory (Germany). Minima of eclipsing binaries observed at both observatories 1960-1979 were published in Astr. Nachr. 288, 69 (1964); 289, 191 (1966); 291, 111 (1968); IBVS 456 (1970), 530 (1971), 647 (1972), 937 (1974), 1053 (1975), 1163 (1976), 1358 (1977), 1449 (1978) and 1924 (1981).

The Table gives the heliocentric minima, three different O-C's, the type of filter, UB_V, 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 observers' names:

Bo = G. Bode	Pl = E. Pohl
Bz = S. Bozkurt	Rd = E. Roderer
Er = A.Y. Ertan	Sn = S. Evren
Fr = W. Freudling	Sr = C. Sezer
Gd = N. Güdür	Tg = I. Thiering
Gl = Ö. Gülmen	Tj = T. Eker
Gr = R. Gröbel	Tm = O. Tümer
Ib = C. İbanoğlu	Tn = Z. Tunca
Ir = M. İper	Va = V. Keskin
Kt = M. Kurutaç	Wo = G. Wolfschmidt
Me = T. Mertelmeier	Ze = Th. Zenker
Mi = F. Mittl	

Remarks:

O-C (I): GCVS, Moscow 1969/70 or First or Second or Third Supplement to the Third Edition of the GCVS. Moscow 1971, 1974 and 1976

Table I

Star	Min.hel. 2444	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
RT And	851.3146	-0.0074	-0.0030		B	Ib/Tj	48	
	.3136	-0.0084	-0.0040		V	Ib/Tj	48	
WW Aur	256.3632:	+0.0024:	-0.0013:		V	Fr/Ze	34	MinII
	925.4902:	-0.0006:	-0.0043:		V	Wo	34	MinII
IM Aur	517.4706	-0.0251 =	-0.0251		B, V	Sr/Sn	48	MinII
	567.3674	-0.0202 =	-0.0202		B, V	Gd/Ir	48	
SV Cam	291.3915:	-0.0101:	-0.003:		V	Pl/Rd		
TW Cas	886.4548:	-0.0069:	-0.0111:		V	Wo	34	
DO Cas	294.3536:	-0.0070:	-0.0025:		V	Tg/Ze	34	
	485.3780	-0.0047	+0.0001		B	Tm/Sn	48	
	.3786	-0.0041	+0.0007		V	Tm/Sn	48	2
	498.3856	-0.0057	-0.0010		B	Tm/Sn	48	
	.3858	-0.0055	-0.0008		V	Tm/Sn	48	
	830.4458	-0.0091	-0.0038		B	Tn/Tm	48	
	.4456	-0.0093	-0.0040		V	Tn/Tm	48	
NN Cep	086.4796			-0.0003	B, V	Gd/Gl	48	MinII
	438.4512			+0.0011	B, V	G1/Va	48	MinII
	474.4717			+0.0013	B, V	G1/Va	48	
	504.3151			-0.0007	B, V	Gd/Gl	48	MinII
	506.3741			.0000	B, V	Gd/Sr	48	MinII
	507.4026			-0.0007	B, V	G1/Sn/Va	48	
	511.5194			-0.0005	B, V	G1/Gd	48	
	824.3814			-0.0009	B, V	G1/Ir	48	
	827.467			-0.003	B, V	Sn/Ir	48	MinII
	859.3742			+0.0007	B, V	G1/Sn	48	
RT CrB	438.3595	+0.0974			B	Er/Va	48	
	438.3637	+0.1016			V	Er/Va	48	
	791.4394	+0.0960			B	Er/Tj	48	

Table I (cont.)

Star	Min.hel. 2444	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
RT CrB	791.4474	+0.1040			V	Er/Tj	48	
V477 Cyg	853.4621:	+0.0085:	-0.0048:		V	Wo	34	
V478 Cyg	777.4777	+0.0789			B, V	Gd	48	
	800.5236	+0.0777			B, V	Gd/Sn	48	
	813.5094	+0.0995			B, V	Sr/Tm	48	MinII
	816.3893	+0.0985			B, V	Sr	48	MinII
	826.4533	+0.0794			B, V	Gl/Tm	48	
	829.3318	+0.0770			B, V	Gl/Sn/Va	48	
	849.4970	+0.0760			B, V	Gd/Sr	48	
	852.3781	+0.0762			B, V	Gl/Sn	48	
	862.481	+0.096			V	Gl/Tm	48	MinII ^ω
V548 Cyg	456.4955	-0.0064 =	-0.0064		B	Er/Tm/Tj	48	
	.4958	-0.0061 =	-0.0061		V	Er/Tm/Tj	48	
	484.4685	-0.0146 =	-0.0146		B	Ib/Er	48	MinII
	.4657	-0.0174 =	-0.0174		V	Ib/Er	48	MinII
V836 Cyg	853.4904	+0.0082	+0.0070		B	Bz/Sn	48	
	.4900	+0.0078	+0.0066		V	Bz/Sn	48	
WW Dra	446.3408	+0.2110	+0.0875	+0.0010	B	Tm/Ir	48	
	.3404	+0.2106	+0.0871	+0.0006	V	Tm/Ir	48	
Z Her	066.4891	-0.0034 =	-0.0034		B	Tn/Tm	48	
	.4887	-0.0038 =	-0.0038		V	Tn/Tm	48	
	070.4841	-0.0012 =	-0.0012		B	Tm/Sn	48	
	078.4710	+0.0001 =	+0.0001		B	Kt/Tn	48	
	.4706	-0.0003 =	-0.0003		V	Kt/Tn	48	
	092.4453	-0.0004 =	-0.0004		B	Ib	48	MinII
	106.4245	+0.0040 =	+0.0040		B	Ib/Kt/Er	48	
	.4237	+0.0032 =	+0.0032		V	Ib/Kt/Er	48	
RX Her	711.5557	+0.0014	+0.0015		V	Gr	34	

Table I (cont.)

Star	Min.hel. 2444	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
RT Lac	472.5261	-0.0247	-0.0210		B	Tm/Tj	48	
	.5240	-0.0268	-0.0231		V	Tm/Tj	48	
	500.4349	-0.0229	-0.0193		B	Sn/Va	48	MinII
	.4287	-0.0291	-0.0255		V	Sn/Va	48	MinII
	845.4617	-0.0290	-0.0254		B, V	Er/Sn	48	MinII
	850.5368	-0.0279	-0.0243		B	Er/Sn	48	MinII
	.5348	-0.0299	-0.0263		V	Er/Sn	48	MinII
SW Lac	925.284:	-0.019:	-0.001:		V	Wo	34	MinII
AR Lac	449.4969	-0.0209	-0.0215	-0.0015	B	Tm/Tj	48	
	.4972	-0.0206	-0.0212	-0.0012	V	Tm/Tj	48	
	451.4807	-0.0203	-0.0209	-0.0009	B	Er/Va	48	
	.4803	-0.0207	-0.0213	-0.0013	V	Er/Va	48	
	458.4220	-0.0202	-0.0208	-0.0007	B	Ib/Va	48	MinII
	.4214	-0.0208	-0.0214	-0.0013	V	Ib/Va	48	MinII
	809.4453	-0.0230	-0.0239	+0.0001	B	Tm	48	MinII
	.4450	-0.0233	-0.0242	.0000	V	Tm	48	MinII
	817.3822	-0.0189	-0.0198	+0.0043	B	Er	48	MinII
	.3811	-0.0200	-0.0209	+0.0032	V	Er	48	MinII
	818.3714	-0.0213	-0.0222	+0.0019	B	Tm	48	
	.3690	-0.0237	-0.0246	-0.0005	V	Tm	48	
UV Leo	292.4549	-0.0035	+0.0103		V	Bo/Gr	34	MinII
XY Leo	706.4411	-0.053	+0.0437		V	Gr	34	MinII
AM Leo	715.420:	-0.005:	-0.017:		V	Gr	34	MinII
ER Ori	252.340:	-0.024:	+0.007		V	Fr/Me	34	MinII
FT Ori	590.4619	-0.0009 =	-0.0009		B, V	G1/Sn	48	
DM Per	491.3405	+0.0443	-0.0113		B, V	Sr/Sn	48	MinII
	499.5237	+0.0443	-0.0113		B, V	Sr	48	MinII
	506.3519	+0.0532	-0.0025		B, V	Sr/Gd	48	

Table I (cont.)

Star	Min.hel. 2444	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
DM Per	510.4348	+0.0445	-0.0112		B, V	Sr/Sn/Tj	48	MinII
	517.2671	+0.0575	+0.0017		B, V	Sr/Sn	48	
	566.3676	+0.0589	+0.0029		B, V	Sr	48	
	855.5057	+0.0578	+0.0003		B, V	Sr/Sn	48	
	885.508	+0.055	-0.003		V	Wo	34	
LX Per	560.4196	-0.0108 =	-0.0108		B	Er/Ir	48	MinII
	.4133	-0.0171 =	-0.0171		V	Er/Ir	48	MinII
IQ Per	290.3461	+0.0062 =	+0.0062		V	Me/Mi	34	
HU Tau	902.6432:	+0.0055:=	+0.0055:		V	Wo	34	
V471 Tau	186.42381	-0.00172		+0.00023	B	Tn/Tm/Sn	48	u
	188.50853	-0.00173		+0.00022	B	Tm/Sn	48	
	281.27920	-0.00170		+0.00039	B	Tn/Tm/Sn	48	
	498.61236	-0.00202		+0.00043	B	Tm/Sn	48	
	518.41743	-0.00192		+0.00056	B	Ib	48	
	589.29850	-0.00179		+0.00082	B	Tn/Tm/Ir	48	
	638.28986	-0.00167		+0.00102	B	Ib/Tm	48	
W UMa	293.3981	+0.0073	-0.0004		V	Mi/Ze	34	
	925.6405	+0.0076	-0.0021		V	Wo	34	
AG Vir	709.4356:	+0.0050:	-0.0060:		V	Gr	34	
AH Vir	343.432	+0.057	-0.005		V	Fr/Ze	34	MinII
Z Vul	852.5044	-0.0059	+0.0094		V	Wo	34	
ER Vul	836.4758	+0.0038	+0.0144		B	Ib/Sn/Va	48	
	.4751	+0.0031	+0.0137		V	Ib/Sn/Va	48	
	837.4987	-0.0205	-0.0099		B	Tn	48	MinII
	.5012	-0.0180	-0.0074		V	Tn	48	MinII
	838.5499	-0.0164	-0.0058		B	Sn/Va	48	
	.5546	-0.0117	-0.0011		V	Sn/Va	48	

O-C (II): SAC 53, Krakow 1981

O-C (III): NN Cep 2444 507. 4033 + 2.^d058305.E (N. Güdür, Ö. Gülmen,
IBVS 1881, 1980)

WW Dra 2441 918. 4994 + 4.^d6297444.E (Z. Tunca,
C. İbanoğlu, M. Kurutaç, S. Evren, O. Tümer,
A.Y. Ertan, IBVS 2040, 1981)

AR Lac 2441 593. 7115 + 1.^d98319197.E - 4.^d591.10⁻⁹.E²
(M. Kurutaç, C. İbanoğlu, Z. Tunca, A.Y. Ertan,
S. Evren, O. Tümer, Astrophys. Space Science
77, 325, 1981)

V471 Tau 2440 610. 06478 + 0.^d52118371.E - 8.1.10⁻¹¹.E²
(Z. Tunca, O. Tümer, M. Kurutaç, C. İbanoğlu,
Astrophys. Space Science 64, 421, 1979)

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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