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PHOTOELECTRIC MINIMA OF ECLIPSING BINARIES

The following table gives photoelectric minima obtained during the years 1985/86 at the Ege University Observatory, Izmir (Turkey) and the Nürnberg Observatory (Germany). Minima of eclipsing binaries observed at both observatories 1960-1984 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) and 2793 (1985).

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:

Be = F. Betten	Sn = S. Evren
Ca = M. C. Akan	Sk = S. Skaberna
Gd = N. Güdür	Sr = C. Sezer
Gl = Ö. Gülmen	Tj = T. Eker
Gr = R. Gröbel	Tm = O. Tümer
Ha = T. Hartlieb	Tn = Z. Tunca
Hs = H. Kara	Va = V. Keskin
Ib = C. Ibanoglu	Wu = E. Wunder
Ls = G. Lichtschlag	Zk = Z. Eker
Sl = S. Congar	

Remarks:

O-C (I): GCVS, Moscow 1985 or 1969/70 or Supplements to the Third Edition of the GCVS, Moscow 1971, 1974 and 1976.

O-C (II): SAC 58, Krakow 1986.

O-C (III): AO Cam: 2445745.6396 + 0^d329921 . E (E. Evans, D. H. Grosseohme,

E. J. Mayer Jr., IBVS 2497, 1984)

V367 Cyg: 2434266.337 +18.59773.E (M. C. Akan, Astrophys. Space Sci., 1987 (in press).

UZ Dra: 2446227.4238+3.2613024.E (Ö. Gülmen, N. Güdür, C. Sezer, IBVS 2953, 1986)

AK Her: 2422977.25905+0.42152207.E+0.0189sin $\left[\frac{2\pi E-32541}{65609} \right]$

(Z. Tunca, V. Keskin, M.C. Akan, S. Evren, C. Ibanoglu, Astrophys. Space Sci., 1987 (in press).

SW Lac: 2442697.4018+0.320719765.E (S. Evren, M.C. Akan, C. Ibanoglu, IBVS 2781, 1985)

AT Peg: 2445615.2541+1.1460766.E (N. Güdür, C. Sezer, Ö. Gülmen, IBVS 2978, 1987)

SAO 077615: 2441 329.510+0.3464551.E (Th. Berthold, Mitteilungen der Bruno H. BürgeI Sternwarte, Hartha, Heft 16, Februar 1981)

V471 Tau: 2440610.06614+0.52118301.E (S. Evren, C. Ibanoglu, Z. Tunca, O. Tümer, Astrophys. Space Sci. 120,97, 1986)

ER Vul: 2440182.2621+0.69809409.E (C. Ibanoglu, M. C. Akan, S. Evren, IBVS 2782, 1985)

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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Table

Star	Min. hel.	0-C (I)	0-C (II)	0-C (III)	Filt.	Observer	Instr.	Rem.
	244							
RT And	6298.4807	-0.0014	-0.0037		V	Ls	34	
AB And	6321.4033	+0.0004	-0.0018		V	Be/Ls	34	Min II
BX And	6348.5782	-0.0059 =	-0.0059		B, V	Sr/S1	48	
	6359.5598	-0.0064 =	-0.0064		B, V	Ca/Va	48	
	6366.577	-0.005 =	-0.005		B, V	Ca	48	Min II
CN And	6289.4649	-0.0200	-0.0043		V	Be/Ls	34	
	6712.45818	-0.0221	-0.0055		B	Sn/Ca	48	
	6712.45936	-0.0209	-0.0043		V	Sn/Ca	48	
	6714.30980	-0.0217	-0.0050		B	Ib/Sn/Ca	48	
	6714.31035	-0.0211	-0.0045		V	Ib/Sn/Ca	48	
	6760.35708	-0.0226	-0.0058		V	Tn/Ca	48	Min II
	6760.35743	-0.0223	-0.0055		B	Tn/Ca	48	Min II
	6762.20995	-0.0209	-0.0041		B	Ib	48	Min II
	6762.21113	-0.0197	-0.0030		V	Ib	48	Min II
	6762.43905	-0.0232	-0.0064		B	Ib	48	
	6762.43926	-0.0230	-0.0062		V	Ib	48	
	6764.2908	-0.0226	-0.0059		V	Ls/Wu	34	
OO Aql	6705.3655	-0.0018	-0.0141		V	Ls	34	Min II
SS Ari	6327.4994	-0.0515	-0.0117		V	Be	34	Min II
TZ Boo	6197.4061	-0.0414 =	-0.0414		V	Gr/Ls	34	
	6212.4130	-0.0412 =	-0.0412		V	Gr/Be	34	Min II
	6610.4528:	-0.0499: =	-0.0499:		V	Be/Ls/Wu	34	
i Boo	6573.4836:	+0.0194:	+0.0162:		V	Ls/Sk	34	Min II
SV Cam	6334.5271	+0.0128	+0.0028		V	Be	34	

Star	Min.hel.	O-C (I)	O-C (II)	O-C (III)	Filt.	Observer	Instr.	Rem.
	244							
AO Cam	6100.2871	-0.0558		-0.0176	V	Gr/Ha	34	
	6107.3796	-0.0564		-0.0184	B	Gr/Ls	34	Min II
AW Cam	6474.2849	-0.0042	-0.0044		V	Ls	34	
VZ CVn	6576.4665	-0.0009	-0.0055		V	Ha/Ls	34	
VW Cep	6249.4830	-0.0209	-0.0126		B, V	Sr	48	
	6257.4172	-0.0187	-0.0104		B, V	G1	48	Min II
	6276.4780	-0.0225	-0.0142		B, V	Sr/Ca	48	
EG Cep	6232.4628	+0.0065	+0.0080		V	Gr/Ls	34	
GK Cep	6287.4712	+0.0635	+0.0026		B, V	G1/S1	48	Min II
	6311.3413	+0.0616	+0.0004		B, V	G1/S1	48	
	6318.3644	+0.0636	+0.0022		B, V	Sr/Tj	48	Min II
	6325.3847	+0.0627	+0.0013		B, V	Sr	48	
	6332.4057	+0.0625	+0.0010		B, V	Sr	48	Min II
	6339.4287	+0.0643	+0.0028		B, V	Sr	48	
	6691.4264	+0.0670	+0.0017		B, V	Sr/Hs	48	
Y Cyg	6287.4210:	-0.0149:	-0.0168:		V	Ls	34	
V367 Cyg	5834.099	-0.125	+0.010	-0.026	B, V	Ca	48	
	5936.572	+0.060	+0.198	+0.159	B, V	Ca	48	Min II
	6224.695	-0.082	+0.065	+0.018	B, V	Ca	48	
	6271.385	+0.114	+0.262	+0.213	B, V	Ca	48	Min II
	6764.000	-0.111	+0.051	-0.012	B, V	Ca	48	
V909 Cyg	6320.324	-0.010	= -0.010		B, V	G1	48	Min II
	6327.3377	-0.0100	= -0.0100		B, V	Gd/Ca	48	
v1073 Cyg	6291.4714:	-0.0200:	0.0000:		V	Be/Ls	34	

Star	Min. hel.	0-C (I)	0-C (II)	0-C (III)	Filt.	Observer	Instr.	Rem.
	244							
V1425 Cyg	6613.4158	+0.0061 =	+0.0061		B, V	Sr/Zk	48	Min II
	6665.3883	+0.0045 =	+0.0045		B, V	Gd/Zk	48	
	6685.4260	+0.0040 =	+0.0040		B, V	Sr/Zk	48	
	6690.4358	+0.0043 =	+0.0043		B, V	Gd/Zk	48	
UZ Dra	6227.4238	+0.0010	+0.0026	0.0000	B, V	Gd	48	
	6245.3608	+0.0008	+0.0004	-0.0002	B	G1/Ca	48	Min II
	6245.3601	+0.0001	-0.0003	-0.0009	V	G1/Ca	48	Min II
AK Her	6224.4309	+0.0008	-0.0081	+0.0033	B, V	G1/Ca	48	Min II
	6228.4330	-0.0016	-0.0104	+0.0009	B, V	Sr	48	
	6230.332	+0.001	-0.008	+0.0031	B, V	G1/Ca	48	Min II
	6234.334	-0.002	-0.011	+0.0006	B, V	Sr/Ca	48	
	6243.3987	+0.0001	-0.0088	+0.0026	B, V	Sr	48	Min II
	6244.4510	-0.0014	-0.0103	+0.0011	B, V	Gd/Ca	48	
	6612.4410	-0.0001	-0.0100	+0.0033	B, V	Gd/Zk	48	
	6634.3582	-0.0020	-0.0120	+0.0014	B, V	Ca/Va	48	
	6642.3659	-0.0033	-0.0132	+0.0002	B, V	Ib/ca	48	
	6643.4213	-0.0017	-0.0116	+0.0018	B, V	Ib/Sn/Ca	48	Min II
HS Her	6596.4600	-0.0045	-0.0163		V	Be/Ls/Wu	34	
RT Lac	6253.4651	-0.0140	-0.0300		B	Ib	48	
	6253.4665	-0.0126	-0.0286		V	Ib	48	
	6281.3828	-0.0030	-0.0193		B, V	Sn/Ca/Va	48	Min II
	6286.4422	-0.0176	-0.0339		B	Ib/Ca	48	Min II
	6286.4429	-0.0169	-0.0332		V	Ib/Ca	48	Min II
	6664.4484	-0.0206	-0.0408		V	Sn/Ca	48	
	6664.4505	-0.0185	-0.0387		B	Sn/Ca	48	

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Star	Min.hel.	0-C (I)	0-C (II)	0-C (III)	Filt.	Observer	Instr.	Rem.
	244							
SW Lac	6262.3633	-0.0030	+0.0063	+0.0010	V	Ca	48	Min II
	6262.3636	-0.0027	+0.0066	+0.0013	B	Ca	48	Min II
	6264.4467	-0.0043	+0.0050	-0.0003	V	Ca	48	
	6264.4470	-0.0040	+0.0053	0.0000	B	Ca	48	
	6270.3797	-0.0046	+0.0048	-0.0006	B, V	Sn/Ca	48	Min II
	6270.5404	-0.0043	+0.0051	-0.0003	B	Sn/Ca	48	
	6270.5408	-0.0039	+0.0055	+0.0001	V	Sn/Ca	48	
	6271.5028	-0.0040	+0.0053	-0.0001	B	Ca	48	
	6271.5030	-0.0038	+0.0055	+0.0001	V	Ca	48	
	6272.4655	-0.0035	+0.0059	+0.0005	V	Sn/Ca	48	
	6272.4656	-0.0034	+0.0060	+0.0006	B	Sn/Ca	48	
	6273.4268	-0.0043	+0.0050	-0.0004	V	Ib	48	
	6273.4271	-0.0040	+0.0053	-0.0001	B	Ib	48	
	6274.3887	-0.0046	+0.0048	-0.0006	B	Ca	48	
	6274.3891	-0.0042	+0.0052	-0.0002	V	Ca	48	
	6288.5007	-0.0043	+0.0051	-0.0003	V	Ls	34	
	6329.3932	-0.0037	+0.0060	+0.0004	B	Tn/Ca	48	Min II
	6329.3938	-0.0031	+0.0066	+0.0010	V	Tn/Ca	48	Min II
	6329.5541	-0.0032	+0.0066	+0.0010	B, V	Tn/Ca	48	
	6669.3555	-0.0056	+0.0066	-0.0002	V	Tn/Va	48	Min II
	6669.3565	-0.0046	+0.0076	+0.0008	B	Tn/Va	48	Min II
	6669.5154	-0.0061	+0.0062	-0.0007	B	Tn/Va	48	
	6669.5156	-0.0059	+0.0064	-0.0005	V	Tn/Va	48	
	6689.3995	-0.0066	+0.0057	-0.0012	V	Ib/Ca	48	
	6689.3999	-0.0062	+0.0061	-0.0008	B	Ib/Ca	48	

Star	Min. hel. 244	O-C (I)	O-C (II)	O-C (III)	Filt.	Observer	Instr.	Rem.
SW Lac	6689.5613	-0.0052	+0.0071	+0.0002	B	Ib/Ca	48	Min II
	6689.5616	-0.0049	+0.0074	+0.0005	V	Ib/Ca	48	Min II
	6693.4089	-0.0063	+0.0061	-0.0008	V	Be	34	Min II
XY Leo	6469.408	+0.002	+0.002		V	Be/Ls	34	
U Oph	6219.5383	+0.0048	-0.0002		V	Gr/Ha	34	
AT Peg	6000.3358	+0.0169	+0.0166	0.0000	B, V	Gd	48	
	6298.3155	+0.0152	+0.0246	-0.0003	B, V	Gd/Ca	48	
	6315.5062	+0.0147	+0.0246	-0.0007	B, V	Gd/Ca	48	
	6334.419	+0.017	+0.027	+0.002	B, V	G1	48	Min II
UV Psc	5987.5127	+0.0045	-0.0018		B	Ib	48	Min II
	5987.5134	+0.0052	-0.0011		V	Ib	48	Min II
	6004.3008	+0.0021	-0.0041		B	Ib/Ca	48	
	6004.3015	+0.0028	-0.0034		V	Ib/Ca	48	
	6322.4592	+0.0037	-0.0030		B, V	Tm/Ca	48	Min II
	6326.3344	+0.0042	-0.0025		B, V	Ib/Tj	48	
	6331.5002	+0.0037	-0.0030		V	Ca/Tj	48	
	6331.5005	+0.0040	-0.0027		B	Ca/Tj	48	
	6745.2357	+0.0061	-0.0012		V	Ib/Ca	48	Min II
	6745.2377	+0.0081	+0.0008		B	Ib/Ca	48	Min II
	6753.4130	+0.0034	-0.0039		B, V	Sn/Ca	48	
SAO 077615	6113.4117			+0.0497	V	Gr/Ls	34	
	6115.309			+0.041	V	Ls	34	Min II
V471 Tau	5935.51417	-0.00285		+0.00003	B	Sn/Ca	48	
	5936.55676	-0.00262		+0.00026	B	Tn	48	

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Star	Min. hel.	0-C (I)	0-C (II)	0-C (III)	Filt.	Observer	Instr.	Rem.
	244							
V471 Tau	6019.42479	-0.00275		+0.00019	B	Sn/Ca	48	
	6030.36958	-0.00282		+0.00014	B	Ca	48	
	6351.41848	-0.00289		+0.00030	B	Sn/Ca	48	
	6352.46093	-0.00281		+0.00039	B	Sn/Ca	48	
DR Vul	6319.5047	+0.0513	+0.0514		V	Be/Ls	34	
ERVul	6004.3776	-0.0090	+0.0033	+0.0108	B	Ib/Ca	48	
	6004.3808	-0.0058	+0.0065	+0.0140	V	Ib/Ca	48	
	6235.4368	-0.0196	-0.0070	+0.0008	B	Tn/Ca	48	
	6235.4406	-0.0158	-0.0032	+0.0046	V	Tn/Ca	48	
	6241.3712	-0.0190	-0.0064	+0.0014	V	Sn/Ca	48	Min II
	6241.3738	-0.0164	-0.0038	+0.0040	B	Sn/Ca	48	Min II
	6248.3513	-0.0199	-0.0073	+0.0006	V	Ca	48	Min II ∞
	6248.3577	-0.0135	-0.0009	+0.0070	B	Ca	48	Min II
	6256.3774	-0.0219	-0.0092	-0.0014	B	Sn/Ca	48	
	6256.3806	-0.0187	-0.0060	+0.0018	V	Sn/Ca	48	
	6314.3250	-0.0163	-0.0035	+0.0044	V	Ib	48	
	6314.3256	-0.0157	-0.0029	+0.0050	B	Ib	48	
	6317.4666	-0.0161	-0.0034	+0.0046	B	Ca	48	Min II
	6317.4688	-0.0139	-0.0012	+0.0068	V	Ca	48	Min II
	6605.4301	-0.0172	-0.0040	+0.0043	B, V	Tn/Sn	48	
	6651.5042	-0.0174	-0.0042	+0.0042	B	Ib/Sn	48	
	6651.5047	-0.0169	-0.0037	+0.0047	V	Ib/Sn	48	
	6652.5521	-0.0167	-0.0035	+0.0049	V	Ib/Ca	48	Min II
	6652.5523	-0.0165	-0.0033	+0.0051	B	Ib/Ca	48	Min II