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PHOTOELECTRIC MINIMA OF ECLIPSING BINARIES

The following Table gives photoelectric minima, mostly obtained during the year 1982 at the Ege University Observatory, Izmir (Turkey) and the Nürnberg Observatory (Germany). Minima of eclipsing binaries observed at both observatories 1960 - 1981 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) and 2189 (1982).

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 observers' names:

Bu = A. Buchler	Ml = M. Hamzaoğlu
Bz = S. Bozkurt	Sn = S. Evren
Er = A.Y. Ertan	Sr = C. Sezer
Es = E. Hamzaoğlu	Tj = T. Eker
Gd = N. Güdür	Tm = O. Tümer
G1 = Gülmen	Tn = Z. Tunca
Gr = R. Gröbel	Va = V. Keskin
Ib = C. Ibanoglu	Wo = G. Wolfschmidt
Ma = D. Matschat	

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.

O-C (II): SAC 54, Krakow 1982

O-C (III): IM Aur 2438 $327.7922 + 1.^d_{2472} 906 \cdot E$ (N. Güdür, Ö. Gülmen, C. Sezer, I.B.V.S. No. 2098, 1982)
NN Cep 2444 $507.4033 + 2.^d_{058305} \cdot E$ (N. Güdür, Ö. Gülmen, I.B.V.S. No. 1881, 1980).

Table

Star	Min. hel. 244	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
AB And	5230.4774	+0.0040	-0.0054		V	Bu/Gr	34	MinII
CN And	5274.330:	-0.012:			V	Gr	34	MinII
" "	5294.4598:	-0.0139:			V	Gr	34	
OO Aql	5180.445:	+0.003:	-0.006:		V	Bu/Gr	34	MinII
SS Ari	5323.296:	-0.083:	-0.004:		V	Bu/Gr	34	
IM Aur	4569.236	-0.023 =	-0.023	+0.002	B, V	Sn/Sr	48	
" "	4893.5270	-0.0285 =	-0.0285	-0.0027	B, V	Gd/Tj	48	
" "	4931.5674	-0.0306 =	-0.0306	-0.0046	B, V	Gd/Va	48	MinII
" "	5018.2548	-0.0303 =	-0.0303	-0.0042	B, V	Gd/Sr	48	
" "	5261.4702	-0.0376 =	-0.0376	-0.0104	B, V	Gd/Sr	48	
AS Cam	5002.514	-0.213 =	-0.213		V	Wo	34	MinII
RZ Cas	5123.4583	-0.0092	-0.0070		V	Gr/Wo	34	
DO Cas	5186.4744	-0.0073	-0.0016		V	Gr	34	
" "	5306.2903:	-0.0082:	-0.0022:		V	Gr	34	
MN Cas	5280.4612	-0.0027	+0.0072		V	Bu/Gr	34	1)
ZZ Cep	5223.493:	+0.007:	+0.007:		V	Bu/Ma	34	
CQ Cep	5143.4817	-0.0179 =	-0.0179		B	Sn/Tm	48	
" "	5143.4810	-0.0186 =	-0.0186		V	Sn/Tm	48	
EG Cep	5194.4118	+0.0123	+0.0056		V	Bu/Gr	34	
NN Cep	4893.336			+0.001	B, V	Gd/Tj	48	MinII
KR Cyg	5130.4907	+0.0015 =	+0.0015		V	Bu/Gr	34	

Table I (cont.)

Star	Min.hel.	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
V478 Cyg	4878.3065	+0.0765		+0.0008		Sr/Tm/Va	48	
V836 Cyg	4874.3997	+0.0084	+0.0072	+0.0002	B	Bz/Sn	48	
"	4874.4001	+0.0088	+0.0076	+0.0006	V	Bz/Sn	48	
"	4879.3013	+0.0094	+0.0082	+0.0012	B, V	Bz/Va	48	MinII
"	4894.3340	+0.0136	+0.0125	+0.0054	B	Bz/Sn	48	MinII
"	4894.3305	+0.0101	+0.0090	+0.0019	V	Bz/Sn	48	MinII
"	4895.3097	+0.0092	+0.0080	+0.0010	B	Bz/Tm	48	
"	4895.3076	+0.0071	+0.0059	-0.0011	V	Bz/Tm	48	
"	4929.2879	+0.0101	+0.0089	+0.0018	B	Bz/Sn	48	
"	4929.2875	+0.0097	+0.0085	+0.0014	V	Bz/Sn	48	
V909 Cyg	5178.5261	+0.0239		-0.0009	B, V	Gl	48	MinII
"	5192.555	+0.026		+0.001	B, V	Sr	48	MinII
"	5195.3592	+0.0245		-0.0003	B, V	Sr	48	MinII
"	5202.3736	+0.0253		+0.0005	B, V	Gd/Sr	48	
"	5216.4002	+0.0248		0.0000	B, V	Gd	48	
"	5230.4288	+0.0264		+0.0015	B, V	Sr	48	
"	5261.2870	+0.0250		0.0000	B, V	Gd/Sr	48	
DM Del	5194.4394	+0.0490	-0.0063		B, V	Gl	48	MinII
"	5219.3558	+0.0476	-0.0078		B, V	Gl/Tj	48	
BS Dra	5121.4700	-0.0003 =	-0.0003		V	Bu/Gr	34	
AK Her	5002.6546	+0.0003 =	+0.0003		V	Wo	34	

Table I (cont.)

Star	Min. hel. 244	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
HS Her	5160.432	-0.011 =	-0.011		V	Bu/Gr	34	
SW Lac	5160.5296	-0.0208	+0.0014		V	Bu/Gr	34	
" "	5192.4399	-0.0221	+0.0002		V	Bu/Gr	34	MinII
" "	5193.4020	-0.0222	+0.0001		V	Bu	34	MinII
RT Lac	5223.4661	-0.0384	-0.0352	-0.0011	B	Ib/Tm	48	
" "	5223.4654	-0.0391	-0.0359	-0.0018	V	Ib/Tm	48	
" "	5228.5404	-0.0382	-0.0349	-0.0007	B	Ib/Tm	48	
RT Lac	5228.5384	-0.0402	-0.0369	-0.0027	V	Ib/Tm	48	
" "	5284.3532	-0.0395	-0.0363	-0.0013	B	Er/Ib	48	
" "	5284.3529	-0.0398	-0.0366	-0.0016	V	Er/Ib	48	
" "	5312.2595	-0.0403	-0.0371	-0.0017	B	Sn/Tm	48	MinII
" "	5312.2610	-0.0388	-0.0356	-0.0002	V	Sn/Tm	48	MinII
AR Lac	5163.4368	-0.0325	-0.0336	-0.0041	B	Er/Tm	48	
" "	5163.4382	-0.0311	-0.0322	-0.0027	V	Er/Tm	48	
" "	5164.4372	-0.0273	-0.0248	+0.0047	B	Tm	48	MinII
" "	5164.4378	-0.0267	-0.0242	+0.0053	V	Tm	48	MinII
" "	5165.4189	-0.0336	-0.0347	-0.0052	B, V	Er/Tm	48	
" "	5166.4098	-0.0379	-0.0354	-0.0059	B, V	Er	48	MinII
" "	5296.3065	-0.0371	-0.0383	-0.0070	B, V	Tm/Tm	48	
V566 Oph	5183.4926	+0.0621	+0.0000		V	Bu/Gr	34	
DI Peg	5196.4870	+0.0034 =	+0.0034		V	Bu	34	

Table I (cont.)

Star	Min.hel. 244	O-C (I)	O-C (II)	O-C (III)	Filt.	Obs.	Instr.	Rem.
UV Psc	5265.5228	+0.0025	-0.0028		B, V	Ib/Tn	48	
"	5282.3149	+0.0041	-0.0011		B	Sn/Tm	48	MinII
"	5282.3139	+0.0031	-0.0021		V	Sn/Tm	48	MinII
"	5284.4666	+0.0032	-0.0020		B, V	Er/Ib	48	
"	5285.3284	+0.0040	-0.0013		B, V	Ib/Tm	48	
V471 Tau	5284.55656	-0.00239		+0.00160	B	Er/Ib	48	
W UMa	4986.3624	+0.0076	-0.0024		V	Es	48	
"	4986.5290	+0.0074	-0.0026		V	Es	48	MinII
"	4987.3639	+0.0082	-0.0018		V	Es	48	
"	5066.4356	+0.0079	-0.0023		B	Es	48	5
"	5066.2689	+0.0080	-0.0022		B	Es	48	MinII
W UMa	5266.6173	+0.0074	-0.0035		B	Es/MI	48	
"	5267.6180	+0.0072	-0.0037		B	Es/MI	48	
"	5276.4592	+0.0071	-0.0039		B	Es/MI	48	MinII
"	5297.4788	+0.0075	-0.0035		V	Es	48	MinII
"	5299.4792	+0.0061	-0.0049		V	Es	48	MinII
AH Vir	5022.5734	+0.0635	+0.0015		V	Wo	34	

Remarks: 1) MinII (GCVS), Mini (Krakow)

- V478 Cyg 2444 777.4779 + 2^d.880795·E (C. Sezer, N. Gdr,
. Glmen, I.B.V.S. No. 2100, 1982)
- V836 Cyg 2444 853.4903 + 0^d.6534122·E (S. Bozkurt, I.B.V.S. No.
2124, 1982)
- V909 Cyg 2445 202.3731 + 2^d.8054230·E (. Glmen, N. Gdr,
C. Sezer, I.B.V.S. No. 2245, 1982)
- RT Lac 2444 873.3648 + 5^d.0739496·E - 2^d.7·10⁻⁸·E² (Z. Tunca,
C. Ibanođlu, O. Tmer, A.Y. Ertan, S. Evren, Astrophys.
Space Science, in press, 1983)
- AR Lac 2441 593.7123 + 1^d.98319204·E - 5^d.24·10⁻⁹·E² (S. Evren,
C. Ibanođlu, O. Tmer, Z. Tunca, A.Y. Ertan, Astrophys.
Space Science, in press. 1983)
- V471 Tau 2440 610.06478 + 0^d.52118371·E - 8.1·10⁻¹¹·E²
(Z. Tunca, O. Tmer, M. Kurutaç, C. Ibanođlu,
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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