COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 530

Konkoly Observatory
Budapest
1971 March 9

PHOTOELECTRIC MINIMA OF ECLIPSING BINARIES

The following table gives photoelectric Minima obtained during the year 1970 at the Ege University Observatory, Izmir/Turkey and the Nürnberg Observatory/Germany. Minima of eclipsing binaries observed at both Observatories 1960-1969 were published in Astron. Nachr. 288, 69 (1964); 289, 191 (1966); 291, 111 (1968) and IBVS 456 (1970).

The table gives besides the heliocentric minima three different O-C's (see remarks at the end of table), 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 1 P 21). No filters were used, except for stars brighter than $7^{m}.0$ (Schott GG 11 = GG 495).

Abbreviations of the Observers' Names

Bz = S.Bozkurt, Izmir
Dn = H.Dönmez, Izmir
En = C.Endres, Nürnberg
Gd = N.Güdür, Izmir
Gl = O.Gülmen, Izmir
Gö = G.Görz, Nürnberg
He = K.Herrmann, Nürnberg
Hl = H.Sengonca, Izmir
Hö = D.Hölzl, Nurnberg
Hs = H.Karacan, Izmir
Hu = R.Hufnagl, Nürnberg
Ib = C.Ibanoğlu, Izmir
Iy = I.Yildiran, Izmir
Ki = A.Kizilirmak, Izmir
Kt = M.Kurutac, Izmir
Me = M.Meier, Nürnberg
Od = O.Demircan, Izmir
Pl = E.Pohl, Nürnberg
Rk = R.Akinci, Izmir
Ro = B.Both, Nürnberg
Wk = R.Woitok, Nürnberg
Yy = Y.Yildiz, Izmir

Star	Min (hel.) 2440	O-C(I)	O-C(II)	O-C(III)	Obs.	Instr. cm	Remarks
AB And	833.4034	+0d0173	+0.0031		Dn/Gl	48	
KP Aql	866.2526	+0.0331=	+0.0331	-0.0005	Gl/Ib	"	
00 Aql	811.4152	-0.0185	+0.0017		Dn/Od	"	1/
	817.494	-0.021	-0.001		Hl/Ib	"	1/
	825.3515	-0.0191	+0.0014		Gd/Hl	"	2/
	858.291	-0.021	0.000		Pl	34	2/
RX Ari	859.3944	+0.0186			Dn/Gd/Hl	48	
β Aur	517.485:	+0.026:			Ki/Od	"	
i Boo	661.4273:	+0.0081:	+0.0070:	+0.0061:	En	34	3/
	753.4231	+0.0097	+0.0091	+0.0077	Gl/Hs	48	
	780.471	+0.008	+0.008	+0.006	Hõ/Wk	34	
SV Cam	857.5139	-0.0018	+0.0003		Hs/Rk	48	
RZ Cas	519.3669	+0.0002	-0.0010		Od	"	
	746.4607	-0.0030	-0.0051		Ki/Gl	"	
	758.4125	-0.0036	-0.0058		Hs/Od	"	
	819.3702	-0.0035	-0.0059		Od/Rk	"	
TW Cas	534.356	-0.012	-0.013		Od	"	
	751.461	-0.013	-0.014		En/Ro	34	
DO Cas	518.423	+0.002 =	+0.002		Gd	48	
PV Cas	767.3886	+0.0253	-0.0369	-0.0093	Ib	"	3/
	817.314	+0.062	0.000	-0.001	Hl/Ib	"	
	824.316	+0.063	0.000	-0.001	Ib/Rk	"	4/
	824.317	+0.064	+0.001	0.000	Ib/Rk	"	5/
	830.4071	+0.0271	-0.0352	-0.0079	Ib/Yy	"	3/
	831.3168	+0.0616	-0.0008	-0.0024	Dn/Ib	"	
	852.321	+0.060	-0.002	-0.004	Me/Pl	34	
U Cep	809.4802	+0.0068	+0.0193		Od/Yy	48	
	854.3560	+0.0079	+0.0207		En/Ho	34	
	874.3009	+0.0084	+0.0215		Dn/Ib	48	
VW Cep	765.311	-0.066	-0.016	-0.002	Od/Yy	"	
	793.4224	-0.0652	-0.0147	+0.0011	Od/Yy	"	
	829.325	-0.066	-0.015	+0.001	Ib/Yy	"	
	870.379	-0.063	-0.013	+0.004	Hs/Rk	"	
	876.360	-0.066	-0.016	+0.001	Hõ/Hu/Wk	34	
XX Cep	520.426	-0.009	-0.021		Gd	48	
ZZ Cep	871.3481	-0.0003=	-0.0003		Hu/Me/Pl	34	
EG Cep	829.263	+0.008 =	+0.008		Ib/Yy	48	
	840.428	+0.009 =	+0.009		Dn/Gl	"	3/
TT Cet	501.421	-0.003	+0.060		Ib	"	
KR Cyg	841.346	-0.005	+0.012		Od/Rk	"	
MR Cyg	847.467	-0.003	+0.001		Gl/Hl	"	
/477 Cyg	781.433:	-0.010:	+0.003:		Me/Ro	34	
/548 Cyg	499.4142	-0.0367	+0.0038		Gd	48	
TW Dra	877.5390:	-0.0193:	-0.0004:		En/Wk	34	
TZ Dra	814.3824	+0.0038	+0.0041		Od/Yy	48	
	852.492	+0.008	+0.008		Dn/Gl	"	

Star	Min(hel.)	O-C(I)	O-C(II)	O-C(III)	Obs.	Instr. cm	Remarks
	2440	d					
AI Dra	848.4444	+0.0049	+0.0056		Hδ/Me	34	
	875.415:	+0.002:	+0.003:		Me	"	3/
YY Eri	868.5418	-0.0036	+0.0008		Bz/Gl/Iy	48	
Z Her	740.4884	-0.0007	+0.0252		Hs/Od	"	
	752.4671	-0.0004	+0.0255		HS/Od	"	
	772.4314	-0.0001	+0.0259		Od/Yy	"	
	816.3533	+0.0010	+0.0270		Od/Yy	"	
	832.3241	+0.0006	+0.0266		Dn/Od	"	
RX Her	784.4671	+0.0007	-0.0001		Ib	"	
	849.3824	-0.0019	-0.0027		Hs/Rk	"	3/
TX Her	834.3431	-0.0095	+0.0001		Gl/Yy	"	
UX Her	781.3576	-0.0329	+0.0002		Hs/Kt	"	
AK Her	775.419	-0.007 =	-0.007	+0.009	Me/Pl	34	3/
	859.296:	-0.013:=	-0.013:	+0.003:	Hu/Pl	"	3/
SW Lac	836.4479	-0.0140	-0.0162		Hs/Rk	48	3/
	842.382	-0.013	-0.016		Od/Yy	"	
	843.503	-0.015	-0.017		Od/Yy	"	3/
	848.4758	-0.0134	-0.0156		Iy/Rk	"	
CM Lac	787.3442	-0.0046=	-0.0046		Od/Yy	"	3/
	848.328	+0.001 =	+0.001		Hö/Me	34	3/
	856.3501	-0.0004=	-0.0004		Iy/Hs/Rk	48	3/
AM Leo	683.428	-0.018 =	-0.018		Hs/Ib	"	
TZ Lyr	749.4635:	+0.0150:	+0.0031:		Gl/Ib	"	
	813.4560	+0.0198	+0.0079		Od/Rk	"	
U Oph	845.304	-0.012	-0.004		Me/Pl	34	
V451 Oph	812.398	+0.008	0.000		He/Me	"	
V566 Oph	846.3686	+0.0079=	+0.0079		Hl/Od	48	3/
	853.328	+0.003 =	+0.003		Me/Pl	34	3/
U Peg	511.338	-0.003 =	-0.003		Gd	48	
	835.3337	-0.0067=	-0.0067		Ib/Rk	"	3/
	867.3784	-0.0059=	-0.0059		Dn/Rk	"	
AT Peg	877.3368:	-0.0479:	-0.0044:		En/Hu/Wk	34	
	877.3372	-0.0475	-0.0040		Hl/Rk	48	
DI Peg	837.3269	-0.0061	-0.0024		Od/Rk	"	
	859.393	-0.006	-0.003		En/Gö	34	
IZ Per	871.476	+0.011 =	+0.011		Me	"	
β Per	844.5051	-0.0195	+0.0080		Od/Yy	48	
UV Psc	860.4014	+0.0104=	+0.0104		Gd/Hl	"	
V505 Sgr	818.3492	-0.0284	-0.0020		Gd/Hl	"	
RS Sct	826.376	+0.017	+0.022		Od/Rk	"	
W UMa	718.4707	-0.0499	-0.0007		Gl/Ib	"	
W UMi	820.368	-0.003 =	-0.003		Gd/Rk	"	
DR Vul	774.487	+0.032	+0.026		Pl	34	3/
	827.3553	+0.0049	-0.0012		Ib/Iy	48	
	871.2803	+0.0387	+0.0326		Hs/Rk	"	3/

Remarks:

1/ MinII (O-C I), 2/ MinII (O-C II), 3/ MinII, 4/ B filter, 5/ V filter.

Remarks concerning O-C

O-C (I): GCVS, Moscow 1969, O-C (II): SAC 42, Krakow 1971, O-C (III): new elements, published in IBVS by Ibanoğlu, Gülmen, Kurutac and Pohl:

KP Aql	IBVS 502 (1970)	Ibanoğlu and Gülmen
i Boo	IBVS 209 (1967)	Pohl
PV Cas	IBVS 386 (1969)	Pohl
VW Cep	IBVS 369 (1969)	Ibanoğlu and Kurutaç
AK Her	IBVS 369 (1969)	Ibanoğlu and Kurutaç

The (O-C)'s for secondary minima were calculated on the supposition that they are symmetric between primary minima (if not 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 is uncertain.

A. KIZILIRMAK
Ege University Observatory
P.K. 21
Bornova/Izmir
Turkey

E. POHL
Nürnberg Observatory
Lützowstr. 10
85 Nürnberg
Germany