

# BBSAG

## BULLETIN

### 106

1994 June 15

#### **139. LIST OF MINIMA OF ECLIPSING BINARIES**

The following table lists 15 photoelectric (underlined), 17 CCD-measured and 187 visual heliocentric minima of eclipsing binaries obtained primarily from January 1994 to May 1994 by the following observers:

FAc	Franco Acerbi, Codogno, Italy
EBl	Ernst Blättler, Wald, Switzerland
RD	Roger Diethelm, R. Szafraniec Observatory, Metzerlen, Switzerland
KL	Kurt Locher, Grüt, Switzerland
MMa	Massimiliano Martignoni, Busto Arsizio, Italy
HP	Hermann Peter, Otelfingen, Switzerland
APs	Anton Paschke, Rüti, Switzerland

The O-C values generally refer to the linear elements of the GCVS 1985, with the remarked exceptions. For the reduction of the visual minima, the tracing paper method was employed, while most of the photoelectric observations were reduced with the Kwee-van Woerden algorithm.

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31283	0139+445	EP And	p	49384.330	0.009	+0.041	6	KL	
31284	0209+444	GZ And	s	49426.302	0.005	0.000	5	KL	
31285	1934+038	V418 Aql	p	49479.577	0.004	-0.061	6	KL	
31286	1847+106	V479 Aql	p	49493.573	0.005	+0.002	7	KL	
31287	1908+120	V917 Aql	p	49479.500	0.009	+0.064	6	KL	
31288	0514+382	RY Aur	p	49387.369	0.004	+0.014	7	KL	
31289	0508+421	SX Aur	s	<u>49416.4313</u>	<u>0.0008</u>	<u>+0.0074</u>	32	EBl	pe, B
31290	0509+334	CL Aur	p	49370.568	0.003	+0.093	6	KL	
31291			p	49384.256	0.005	+0.093	9	HP	
31292	0615+497	HL Aur	p	49473.346	0.005	-0.006	8	HP	
31293	0507+357	HP Aur	p	49439.330	0.006	+0.029	8	HP	
31294	1427+323	SU Boo	p	49409.587	0.008	-0.022	20	APs	CCD
31295	1402+302	TU Boo	s	49420.616	0.004	-0.057	5	KL	
31296	1458+353	TY Boo	p	49471.422	0.005	+0.060	8	HP	
31297			p	49484.429	0.006	+0.064	7	HP	
31298	1415+127	VW Boo	s	49423.597	0.004	-0.027	50	APs	CCD
31299	1353+261	ZZ Boo	s	<u>49475.4170</u>	<u>0.0016</u>	<u>+0.0413</u>	14	RD	pe, B
31300			s	<u>49480.4090</u>	<u>0.0005</u>	<u>+0.0415</u>	26	EBl	pe, B
31301	0734+761	Y Cam	p	49401.439	0.007	+0.155	7	KL	
31302	1137+805	AL Cam	p	49431.505	0.005	-0.034	7	FAC	
31303	0641+696	AW Cam	p	49216.429		+0.002	20	MMa	
31304	0837+200	RY Cnc	p	49372.540	0.003	+0.036	6	KL	
31305	0906+306	WW Cnc	p	<u>49371.3130</u>	<u>0.0012</u>	<u>-0.3652</u>	14	RD	pe, B
31306	0843+330	WX Cnc	p	49442.317	0.006	+0.014	6	HP	
31307	1327+291	VW CVn		49182.375			11	MMa	GCVS period prob. erron.
31308				49401.664	0.006		9	KL	
31309				49410.581	0.007		8	KL	
31310	1329+288	VZ CVn	p	<u>49480.4321</u>	<u>0.0015</u>	<u>-0.0006</u>	24	EBl	pe, B
31311	1354+289	YZ CVn	p	49401.632	0.008	-0.001	9	KL	
31312	1300+568	BI CVn		49479.43	0.01		26	APs	CCD
31313	0737+064	RT CMi	p	49434.45	0.02	-0.58	31	APs	CCD; normal minimum
31314	0734+056	TT CMi	p	49396.337	0.007	-0.079	25	APs	CCD
31315	0734+079	TU CMi	p	49416.485	0.005	+0.099	16	APs	CCD
31316	0737+048	TX CMi	s	49383.415	0.007	-0.011	10	APs	CCD; elem. see note this Bull.

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31317	0745+096	UY CMi	p	49391.68	0.04		4	APs	CCD: no elem. in GCVS
31318	0751+037	XZ CMi	p	49384.321	0.004	-0.006	7	HP	
31319			p	49421.382	0.005	+0.010	9	HP	
31320	0737+040	AK CMi	p	49384.261	0.004	-0.005	6	KL	
31321			p	49423.299	0.005	-0.014	8	HP	
31322	0707+020	AO CMi	p	49384.374	0.004	-0.087	16	APs	CCD
31323	0721+017	NSV3570 CMi		49396.53	0.05		28	APs	CCD: see note in this Bulletin
31324	0244+694	RZ Cas	p	48490.470		0.000	35	MMa	
31325			p	48618.371		0.010	28	MMa	
31326			p	48619.566		0.010	25	MMa	
31327	2304+538	IR Cas	s	49384.323	0.006	+0.020	7	HP	
31328			p	49446.601	0.007	+0.015	6	KL	
31329	0037+499	V523 Cas	s	49393.311	0.003	+0.027	6	KL	
31330			p	49384.312	0.005	+0.025	9	HP	
31331	1140-355	V752 Cen	s	49345.583	0.005	+0.008	6	KL	
31332	0057+816	U Cep	p	49410.586	0.004	+0.062	7	KL	
31333	2145+570	SU Cep	p	49374.295	0.004	+0.004	9	KL	
31334	2038+754	VW Cep	p	48914.299		-0.067	17	MMa	
31335			s	48987.338		-0.085	15	MMa	
31336			p	49013.368		-0.078	6	MMa	
31337			s	49032.440		-0.071	6	MMa	
31338			s	49192.451		-0.090	8	MMa	
31339			s	49216.390		-0.086	14	MMa	
31340			p	49216.522		-0.094	13	MMa	
31341			p	49217.366		-0.085	17	MMa	
31342			s	49217.493		-0.097	20	MMa	
31343			s	49309.349		-0.084	12	MMa	
31344			s	49403.407	0.004	-0.097	17	FAc	
31345			p	49403.557	0.003	-0.086	18	FAc	
31346			p	49417.475	0.008	-0.084	9	FAc	
31347			s	49431.533	0.002	-0.081	13	FAc	
31348			p	49431.668	0.004	-0.085	15	FAc	
31349	2302+631	CW Cep	s	<u>49375.3155</u>	<u>0.0010</u>	<u>+0.0131</u>	15	RD	pe, B; sec. min. slightly displ.
31350	2024+614	HI Cep	p	49372.403	0.009	+0.251	9	KL	elem. BBSAG Bull. 81, 6
31351	2300+622	NN Cep	p	<u>49375.2992</u>	<u>0.0019</u>	<u>+0.0045</u>	16	RD	pe, B
31352	0220+809	V358 Cep	p	49393.382	0.008	+0.001	6	KL	elem. BBSAG Bull. 96, 10
31353	1230+269	RW Com	s	49416.437	0.006	-0.011	6	HP	
31354			s	49416.671	0.004	-0.015	33	APs	CCD
31355			s	49472.443	0.008	-0.019	9	HP	
31356			s	49473.403	0.004	-0.008	7	HP	
31357			p	49484.434	0.005	-0.014	9	HP	
31358	1232+236	RZ Com	p	49471.385	0.006	+0.011	7	HP	
31359			p	49473.424	0.004	+0.018	11	HP	
31360	1247+189	SS Com	p	49472.545	0.007	-0.033	7	HP	elem. BAV 33, 158

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31361	1209+228	CC Com	p	49416.357	0.005	+0.001	7	HP	
31362			s	49416.631	0.004	-0.008	40	APs	CCD
31363			s	49471.412	0.004	-0.005	7	HP	
31364			s	49484.431	0.006	-0.007	7	HP	
31365	1604+274	TW CrB	s	<u>49472.3941</u>	<u>0.0023</u>	<u>+0.0163</u>	16	RD	pe, B
31366	1205-128	W Crv	p	49372.684	0.002	+0.001	8	KL	
31367			p	49472.425	0.005	+0.005	8	HP	
31368			p	49486.389	0.007	-0.002	7	HP	
31369	1121-164	V Crf	p	49374.572	0.005	+0.004	6	KL	
31370	2050+344	Y Cyg	p	<u>49469.5750</u>	<u>0.0006</u>	<u>+0.1312</u>	28	EBl	pe, B
31371	2021+430	UW Cyg	p	49480.472	0.003	+0.027	6	KL	
31372	2002+414	WW Cyg	p	49498.443	0.004	+0.010	10	KL	
31373	2022+467	ZZ Cyg	p	49446.540	0.007	-0.021	6	KL	
31374	1939+466	BR Cyg	p	49441.563	0.004	-0.008	8	KL	
31375	1924+292	DX Cyg	p	49475.556	0.005	-0.071	7	KL	
31376	1941+326	V370 Cyg	p	49480.560	0.003	-0.007	6	KL	
31377	2021+523	V1048 Cyg	p	49480.511	0.009	+0.010	6	KL	
31378	1924+523	V1918 Cyg	s	49219.478		0.000	13	MMA elem.	IBVS No. 3090
31379	1142+725	Z Dra	p	49370.651	0.004	-0.082	6	KL	
31380			p	49472.464	0.004	-0.078	8	HP	
31381	1841+626	RR Dra	p	49486.393	0.006	+0.057	8	HP	
31382			p	49486.396	0.005	+0.060	6	KL	
31383	1822+588	RZ Dra	p	49318.330	0.005	+0.020	21	APs	CCD
31384	1926+688	UZ Dra	p	49374.581	0.008	+0.001	6	KL	
31385	1214+651	AR Dra	p	49387.366	0.003	+0.002	5	KL	
31386	1922+698	DW Dra	p	49474.558	0.005	-0.011	8	KL	elem BBSAG Bull. 84, 6
31387	0319-104	VV Eri	p	49340.420	0.006	+0.111	28	APs	CCD
31388	0502-076	WW Eri	p	49325.518	0.006	+0.049	37	APs	CCD
31389	0329-034	AS Eri	p	<u>49374.3941</u>	<u>0.0012</u>	<u>-0.0047</u>	56	EBl	pe, B
31390	0558+231	RW Gem	p	49393.301	0.004	+0.001	8	KL	
31391	0631+155	BD Gem	p	49421.397	0.005	-0.023	11	HP	
31392	0622+180	BO Gem	p	49416.466	0.009	+0.310	12	KL	
31393	0644+169	FG Gem	p	49384.343	0.005	-0.004	10	HP	
31394	0749+272	GW Gem	p	49384.244	0.005	-0.001	8	HP	
31395	0609+247	HR Gem	p	49442.381	0.006	+0.014	9	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31396	1737+329	SZ Her	p	49441.515	0.003	-0.017	7	KL	
31397	1711+307	TU Her	p	49395.678	0.003	-0.036	6	KL	
31398	1615+090	CC Her	p	49446.456	0.004	+0.055	7	KL	
31399			p	49472.464	0.005	+0.053	10	HP	
31400	1618+185	CT Her	p	49484.427	0.003	-0.008	6	KL	
31401			p	49484.435	0.005	0.000	8	HP	
31402	1806+458	DQ Her	p	49475.546	0.003	+0.004	6	KL	
31403	1819+144	MT Her	p	49384.729	0.003	+0.008	8	KL	
31404	1714+209	V381 Her	p	49451.533	0.008	+0.093	5	KL	
31405	0926+057	TY Hya	p	49370.632	0.004	+0.024	6	KL	
31406	0811+006	WY Hya	p	49442.316	0.005	+0.020	6	HP	
31407	0928-187	AS Hya	p	49416.422	0.006	-0.025	9	KL	elem. BBSAG Bulletin 83, 5
31408	0945+335	T LMi	p	49395.680	0.004	-0.015	7	KL	
31409	0933+264	Y Leo	p	49410.584	0.002	-0.009	7	KL	
31410			p	49444.308	0.006	-0.008	8	HP	
31411	1035+145	UV Leo	s	<u>49475.3986</u>	<u>0.0015</u>	<u>+0.0133</u>	14	RD	pe, B
31412	1037+138	UZ Leo	s	49417.488	0.002	+0.060	11	FAc	
31413	0958+176	XY Leo	p	49416.429	0.006	+0.085	7	HP	
31414			s	49421.401	0.005	+0.086	9	HP	
31415	0959+172	XZ Leo	p	49417.425	0.001	+0.012	12	FAc	
31416			p	49421.332	0.006	+0.017	8	HP	
31417			p	49431.552	0.002	-0.005	9	FAc	
31418	1142+250	BL Leo	s	49420.585	0.005	+0.012	7	KL	
31419	0507-149	Z Lep	p	49383.256	0.003	-0.169	5	KL	
31420	0557-202	RS Lep	p	49383.261	0.003	+0.001	6	KL	
31421	1519-080	TY Lib	p	49395.667	0.004	+0.002	8	KL	
31422	0652+509	RV Lyn	p	49480.431	0.005	+0.573	6	KL	
31423	0809+574	SX Lyn	p	49484.376	0.005	+0.009	7	HP	
31424			p	49486.392	0.006	+0.003	7	HP	
31425	0912+429	UU Lyn	p	49421.420	0.005	-0.003	8	HP	
31426			p	49473.423	0.006	0.000	10	HP	
31427	1914+323	RV Lyr	p	49474.510	0.007	-0.078	7	KL	
31428	1814+410	TZ Lyr	p	49471.414	0.006	+0.013	6	HP	
31429	1919+378	UZ Lyr	p	49488.560	0.005	-0.024	5	KL	
31430	1831+377	EW Lyr	p	49473.444	0.006	+0.251	11	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31431	1910+462	FL Lyr	p	<u>49480.4305</u>	<u>0.0025</u>	<u>-0.0021</u>	7	RD	pe B
31432	0750-029	TU Mon	p	49442.337	0.006	-0.079	10	HP	
31433	0650+092	AY Mon	p	49372.486	0.007	+0.019	6	KL	
31434	0757-033	BO Mon	p	49384.340	0.003	-0.061	6	KL	
31435			p	49384.378	0.005	-0.023	8	HP	
31436	0643-002	DD Mon	p	49416.398	0.006	+0.088	8	HP	
31437	0755-070	FW Mon	p	49401.486	0.009	-0.036	9	KL	
31438	0700+003	HM Mon	p	49416.378	0.007	-0.010	6	KL	
31439	0645+014	V448 Mon	s	<u>49423.375</u>	<u>0.004</u>	<u>+0.007</u>	38	EBl	pe, B
31440	0749-011	V681 Mon	p	49426.317	0.006	+0.330	4	KL	elem. BBSAG Bulletin 75, 4
31441	1732+072	RV Oph	p	49486.447	0.004	-0.012	5	KL	
31442	1803+005	V423 Oph	p	49216.402		+0.015	37	MMa	
31443	1728+106	V449 Oph	p	49474.581	0.006	+0.021	8	KL	
31444	1756+135	V508 Oph	s	49375.732	0.004	+0.011	10	KL	
31445	1752+141	V913 Oph	p	49475.600	0.004	+0.074	7	KL	
31446	1820+040	V916 Oph	p	49475.481	0.002	+0.112	8	KL	
31447	0508-086	ER Ori	s	<u>49372.2936</u>	<u>0.0018</u>	<u>+0.0110</u>	26	EBl	pe, B
31448	0452+013	ET Ori	p	49418.308	0.006	+0.008	8	HP	
31449	0532+029	FF Ori	p	49416.371	0.008	+0.026	8	HP	
31450	0552-093	V640 Ori	p	49375.478	0.006	-0.042	6	KL	
31451	0456+100	V1202 Ori	p	48618.336		+0.002	23	MMa	elem. IBVS No. 3544
31452			p	48619.442		+0.006	23	MMa	
31453	2139+267	KW Peg	s	49250.504	0.006	+0.023	20	APs	elem. IBVS No. 3579
31454	0320+463	RT Per	p	49398.325	0.005	+0.028	5	KL	
31455	0407+341	RV Per	p	49384.360	0.006	-0.007	9	HP	
31456	0405+464	XZ Per	p	49384.237	0.006	-0.029	6	KL	
31457	0253+376	LS Per	p	49384.359	0.008	-0.325	10	HP	
31458	0148+549	V436 Per	p	48568.436		-0.045	26	MMa	
31459	0217+542	V505 Per	s	48490.451		-0.005	31	MMa	
31460			p	48509.448		-0.006	35	MMa	
31461			p	48619.223		-0.004	23	MMa	
31462			s	48621.332		-0.006	26	MMa	
31463	0054+120	SX Psc	p	49393.259	0.003	-0.007	6	KL	
31464	1808-164	XY Sgr	p	49475.608	0.009	+0.002	8	KL	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
31465	1739-138	AK Ser	p	49479.633	0.003	+0.004	8	KL	
31466	1554+224	AU Ser	p	49441.614	0.002	-0.036	7	KL	
31467	1535+190	LX Ser	p	49475.507	0.002	0.000	6	KL	
31468	0344+249	AH Tau	s	49384.369	0.006	-0.070	8	HP	
31469			s	49393.344	0.006	-0.078	8	KL	
31470			s	49418.289	0.006	-0.084	8	HP	
31471	0549+162	AM Tau	p	49439.363	0.003	-0.014	6	KL	
31472	0555+270	CT Tau	p	49421.331	0.005	-0.014	10	HP	
31473	0526+287	ES Tau	p	49372.350	0.004	+0.005	6	KL	
31474	0210+367	RV Tri	p	49423.280	0.004	-0.020	8	KL	
31475	0940+561	W UMa	p	49129.465		-0.007	18	MMa	
31476			s	49192.352		-0.010	10	MMa	
31477	1206+563	TY UMa	s	49396.558	0.005	+0.053	11	FAc	elem. IBVS No. 1949
31478			p	49403.487	0.004	+0.068	15	FAc	
31479			s	49417.491	0.003	+0.068	13	FAc	
31480			p	49431.494	0.003	+0.067	17	FAc	
31481			s	49471.378	0.005	+0.066	10	HP	
31482			s	49486.433	0.005	+0.088	9	HP	
31483	0334+521	UX UMa	p	49370.570	0.001	0.000	7	KL	
31484	0906+546	XY UMa	p	49403.427	0.005	+0.064	12	FAc	
31485	0928+495	XZ UMa	p	49374.562	0.003	-0.009	6	KL	
31486			p	49439.329	0.005	-0.025	10	HP	
31487	1026+620	ZZ UMa	p	49473.424	0.004	-0.009	12	HP	
31488	0943+459	AA UMa	s	49421.417	0.006	+0.003	8	HP	
31489			s	49472.448	0.006	+0.007	9	HP	
31490			p	49484.378	0.005	0.000	7	HP	
31491	0851+651	AC UMa	p	49479.350	0.007	-0.021	6	KL	
31492	0128+301	V Tri	p	49371.283	0.005	-0.013	13	HP	
31493	1312-172	UW Vir	p	49395.644	0.003	-0.022	6	KL	
31494	1211+120	AH Vir	p	<u>49472.3697</u>	<u>0.0008</u>	<u>+0.0762</u>	14	RD	pe, B
31495	1402-181	AK Vir	p	49451.503	0.004	-0.030	7	KL	
31496	1325+041	AX Vir	p	49431.654	0.003	0.000	13	FAc	
31497			p	49472.402	0.005	+0.001	9	HP	
31498	1340+048	AZ Vir	s	49472.392	0.005	-0.009	10	HP	
31499			s	49486.381	0.005	-0.007	6	HP	
31500	1345-003	BF Vir	p	49473.393	0.006	+0.001	9	HP	
31501	1502+045	CG Vir	p	49475.534	0.005	-0.227	58	APs	CCD

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### On the elements of TX CMi

Based on the minima published in the BBSAG Bulletins since 1990, the elements of variation of TX CMi may be corrected to:

$$JD_{\min, \text{hel}} = 2436598.611 + 0.3892173 \cdot E$$

The period seems to have been constant since the time of the discovery of its variation.

A. Paschke

### NSV3570 CMi

The minimum given in this table has certainly occurred, but the timing is, as was the case before, very uncertain. Please refer to "light curve" in BBSAG Bulletin 102 for comparison.

A. Paschke

### Errata BBSAG Bulletin 105

No.	Star	Data to be corrected
31150	TT Del	O = <u>492</u> 17.497
31226	AG Peg	O = <u>492</u> 39.582

R. Diethelm



