

BBSAG

BULLETIN

104

1993 September 31

137. List of Minima of Eclipsing Binaries

The following table lists 11 photoelectric (underlined), 14 CCD-measured and 261 visual heliocentric minima of eclipsing binaries obtained primarily from April 1993 to July 1993 by the following observers:

EBI	Ernst Blättler, Wald, Switzerland
AD	Antonin Dedoch, Praha, Czech Republic
RD	Roger Diethelm, R. Szafraniec Observatory, Metzerlen, Switzerland
MD	Michael Dahm, Bremen, Germany
KL	Kurt Locher, Grüt, Switzerland
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.

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30750	0041+306	UU And	p	49215.589	0.006	+0.002	6	KL	
30751	0008+418	DO And	p	49207.503	0.004	-0.004	8	KL	elem. MVS 11, 106
30752	0139+445	EP And	s	49211.579	0.008	+0.046	6	KL	
30753	0209+444	GZ And	p	49202.576	0.005	+0.005	9	KL	
30754	2202-090	XZ Aqr	p	49185.441	0.003	+0.037	6	KL	
30755	2233-009	CX Aqr	p	49125.597	0.003	+0.005	5	KL	
30756	2319-162	CZ Aqr	p	49216.612	0.003	-0.015	6	KL	
30757	1936+126	V343 Aql	p	49132.466	0.005	-0.018	8	HP	
30758	2007+102	V346 Aql	p	49158.420	0.005	-0.004	8	HP	
30759	1847+106	V479 Aql	p	49097.573	0.002	-0.039	6	KL	
30760	1958+085	V760 Aql	p	49159.514	0.006	-0.014	8	KL	
30761	1858-075	V803 Aql	s	49185.410	0.003	-0.010	9	KL	
30762	1903-117	V805 Aql	s	<u>49133.5527</u>	0.0011	<u>+0.0039</u>	20	EBl	pe, B
30763	1922+159	V1353 Aql	p	49158.452	0.005	+0.003	7	HP	
30764	0629+324	WW Aur	s	49059.422	0.006	-0.003	9	MD	
30765	0514+365	EO Aur	s	<u>48359.403</u>	0.012	<u>+0.041</u>	16	RD	pe, B; normal minimum
30766			p	<u>48987.536</u>	0.006	<u>+0.033</u>	20	RD	pe, B; normal minimum
30767	0615+497	HL Aur	p	49092.382	0.005	+0.003	10	HP	
30768	1402+302	TU Boo	s	49105.419	0.005	-0.048	10	HP	
30769			s	49130.391	0.005	-0.047	8	HP	
30770			p	49145.460	0.005	-0.056	6	KL	
30771			s	49164.444	0.005	-0.043	7	HP	
30772			s	49177.407	0.005	-0.052	8	HP	
30773	1458+353	TY Boo	p	49092.423	0.005	+0.052	10	HP	
30774			p	49105.424	0.005	+0.050	10	HP	
30775			p	49137.463	0.004	+0.057	8	HP	
30776			p	49144.435	0.007	+0.052	12	APs	CCD
30777			p	49157.442	0.005	+0.056	8	HP	
30778			p	49177.426	0.004	+0.059	8	HP	
30779	1506+401	TZ Boo	p	49155.437	0.009	+0.039	28	APs	CCD
30780	1419+473	UW Boo	p	49163.408	0.006	+0.006	12	HP	
30781			p	49164.420	0.005	+0.012	10	HP	
30782			p	49172.451	0.004	+0.006	10	HP	
30783	1415+127	VW Boo	p	49143.400	0.008	-0.030	20	APs	CCD
30784			s	49143.576	0.008	-0.025	20	APs	CCD
30785	1533+436	YY Boo	p	49098.370	0.007	-0.023	10	HP	
30786	1353+261	ZZ Boo	p	49113.527	0.004	+0.053	12	MD	
30787			p	<u>49173.4153</u>	0.0004	<u>+0.0401</u>	32	EBl	pe, B
30788	0819+773	AY Cam	p	49097.373	0.007	-0.014	11	HP	elem. IBVS No. 3005
30789	0906+306	WW Cnc	p	49092.329	0.005	-0.353	7	HP	
30790	1354+289	YZ CVn	p	49159.456	0.006	-0.012	7	KL	
30791	1300+528	BI CVn	s	49137.486	0.005	+0.009	40	APs	CCD
30792	0751+037	XZ CMi	p	49076.404	0.005	+0.003	10	HP	
30793	0737+040	AK CMi	p	49076.417	0.005	-0.001	6	HP	
30794			p	49097.345	0.005	-0.011	7	HP	
30795	0123+698	AE Cas	p	49173.489	0.009	+0.046	5	KL	
30796	0051+638	BM Cas	p	<u>49050.72</u>	0.61	<u>-1.22</u>	26	RD	pe, B

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30797	0048+585	KL Cas	p	49213.451	0.004	-0.007	6	KL	
30798	0037+499	V523 Cas	p	49145.479	0.004	+0.023	6	KL	
30799	2320+650	CM Cep	p	49124.518	0.003	-0.026	8	KL	
30800	2157+607	DK Cep	p	49126.522	0.008	+0.046	4	KL	
30801	2306+609	DP Cep	p	49212.355	0.004	-0.023	6	KL	
30802	2017+766	EG Cep	p	49167.426	0.008	+0.002	10	HP	
30803	2024+614	HI Cep	p	49130.478	0.007	+0.209	8	KL	elem. BBSAG Bull. 81, 6
30804	2109+575	IO Cep	p	49146.506	0.009	-0.010	6	KL	
30805			p	49177.435	0.004	+0.023	9	HP	
30806			p	49198.438	0.004	+0.018	10	HP	
30807	0158+786	V357 Cep	p	49212.384	0.008	-0.039	6	KL	elem. Brno Contr. 28, 34
30808	0220+809	V358 Cep	p	49157.463	0.009	+0.023	6	KL	elem. BBSAG Bull. 96, 10
30809	0146-211	TW Cet	p	49200.567	0.005	-0.019	6	KL	
30810	0147-198	VY Cet	s	49200.617	0.004	-0.013	6	KL	
30811	1230+269	RW Com	s	49090.331	0.004	-0.004	7	HP	
30812			s	49107.428	0.007	+0.004	7	HP	
30813			s	49116.428	0.004	-0.015	8	HP	
30814			s	49163.425	0.006	-0.013	9	HP	
30815	1232+236	RZ Com	p	49076.361	0.004	+0.023	9	HP	
30816			p	49097.350	0.004	+0.024	7	HP	
30817			p	49147.450	0.005	+0.025	7	HP	
30818			p	49167.412	0.005	+0.016	9	HP	
30819	1247+189	SS Com	p	49098.498	0.004	+0.086	41	APs	CCD
30820	1209+228	CC Com	s	49076.382	0.004	-0.007	6	HP	
30821			p	49090.397	0.005	-0.005	7	HP	
30822			p	49105.402	0.005	-0.007	8	HP	
30823			p	49116.433	0.005	-0.010	8	HP	
30824			p	49137.407	0.006	-0.002	8	HP	
30825	1604+274	TW CrB	p	49116.427	0.004	+0.023	9	HP	
30826			p	49166.470	0.005	+0.012	7	HP	
30827			p	49176.482	0.004	+0.013	9	HP	
30828	1205-128	W Crv	s	49107.437	0.007	+0.006	8	HP	
30829	2005+461	SW Cyg	p	49166.424	0.007	-0.115	10	HP	
30830			p	49175.558	0.008	-0.127	8	KL	
30831			p	49198.421	0.005	-0.130	12	HP	
30832	2021+430	UW Cyg	p	49166.457	0.004	+0.033	14	HP	
30833	2104+455	VV Cyg	p	49124.547	0.006	-0.016	8	KL	
30834	2002+414	WW Cyg	p	49133.486	0.004	+0.008	7	KL	
30835	2051+386	WZ Cyg	p	49098.625	0.003	+0.035	6	KL	
30836			p	49163.505	0.004	+0.039	7	HP	
30837			p	49166.427	0.005	+0.039	7	HP	
30838	2022+467	ZZ Cyg	p	49126.566	0.003	-0.029	7	KL	
30839			p	49167.442	0.004	-0.014	11	HP	
30840			p	49172.461	0.004	-0.024	7	HP	
30841	1939+466	BR Cyg	p	49092.429	0.002	-0.010	6	KL	
30842	2056+349	CG Cyg	p	49167.452	0.004	+0.037	10	HP	
30843			p	49198.378	0.004	+0.038	7	HP	
30844	2156+523	DO Cyg	p	49198.455	0.005	+0.003	12	HP	
30845	1928+342	HK Cyg	p	49167.486	0.004	-0.068	6	KL	
30846	2007+304	KR Cyg	p	49164.400	0.006	+0.002	7	HP	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30847	2018+337	MY Cyg	p	<u>49167.4491</u>	0.0002	<u>+0.0006</u>	40	EBl	pe, B
30848	1941+326	V370 Cyg	p	49137.429	0.005	-0.014	11	HP	
30849	2113+372	V387 Cyg	p	49167.442	0.006	+0.021	9	HP	
30850			p	49176.400	0.005	+0.010	6	HP	
30851	2026+381	V445 Cyg	p	49132.495	0.007	+0.165	7	HP	
30852			p	49167.546	0.003	+0.157	11	KL	
30853	2027+389	V456 Cyg	s	49124.469	0.010	+0.005	6	KL	
30854	2128+499	V616 Cyg	p	49207.404	0.006	-0.232	6	KL	
30855	1924+298	V687 Cyg	p	49157.470	0.005	+0.016	6	HP	
30856			p	49198.435	0.006	+0.007	11	HP	
30857	2011+404	V726 Cyg	p	49167.519	0.005	+0.029	8	KL	
30858	2025+586	V728 Cyg	p	49124.458	0.006	-0.025	6	KL	
30859			p	49157.430	0.004	-0.015	9	HP	
30860	2040+531	V749 Cyg	p	49212.466	0.008	+0.010	6	KL	
30861	2003+308	V1034 Cyg	p	49163.446	0.005	-0.017	9	HP	
30862			p	49166.388	0.005	-0.007	7	HP	
30863	2006+405	V1036 Cyg	p	49176.482	0.006	+0.076	11	HP	
30864	2021+523	V1048 Cyg	p	49158.385	0.005	+0.009	6	KL	
30865	2129+336	V1908 Cyg	p	49177.495	0.006	-0.047	5	KL	elem. Per. Z. 22, 359
30866	1924+523	V1918 Cyg	s	<u>49198.3840</u>	0.0025	<u>-0.0212</u>	14	RD	pe, B; elem. IBVS No. 3090
30867	2035+181	W Del	p	49177.539	0.006	-0.034	6	KL	
30868	2033+082	TT Del	p	49217.512	0.004	-0.020	6	KL	
30869	2101+130	TY Del	p	49166.442	0.004	+0.035	8	HP	
30870	2037+142	DM Del	p	<u>49133.5259</u>	0.0009	<u>-0.0675</u>	20	EBl	pe, B
30871	2051+044	FZ Del	p	49145.516	0.008	-0.032	6	KL	
30872			p	49167.447	0.006	-0.031	7	HP	
30873	1142+725	Z Dra	p	49092.382	0.005	-0.073	11	HP	
30874			p	49172.467	0.005	-0.077	7	HP	
30875	1841+626	RR Dra	p	49132.478	0.005	+0.057	12	HP	
30876			p	49166.453	0.004	+0.056	14	HP	
30877	1822+588	RZ Dra	p	49157.483	0.005	+0.029	7	HP	
30878	1533+640	TW Dra	p	49076.378	0.004	+0.032	8	HP	
30879			p	49090.417	0.005	+0.037	8	HP	
30880			p	49118.474	0.005	+0.026	5	KL	
30881			p	49177.416	0.004	+0.024	11	HP	
30882	1820+475	TZ Dra	p	49166.423	0.004	-0.002	9	HP	
30883	1926+688	UZ Dra	p	49198.471	0.005	+0.002	6	KL	
30884	1815+532	AK Dra	p	<u>49101.91</u>	0.02	<u>+0.06</u>	20	RD	pe, V
30885	1214+651	AR Dra	p	49097.430	0.004	+0.001	7	HP	
30886			p	49147.446	0.004	+0.004	9	HP	
30887			p	49172.450	0.006	+0.002	9	HP	
30888	1922+698	DW Dra	p	49176.571	0.003	+0.007	6	KL	elem. BBSAG Bull. 84, 6
30889	0733+170	TX Gem	p	49097.343	0.004	-0.015	8	HP	
30890	0629+198	AC Gem	p	49104.322	0.005	+0.043	6	HP	
30891	0654+209	AL Gem	p	49092.351	0.004	+0.041	9	HP	
30892	0749+272	GW Gem	p	49097.395	0.004	+0.007	7	HP	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30893	1737+329	SZ Her	p	49167.456	0.004	-0.012	7	HP	
30894			p	49176.456	0.005	-0.011	7	HP	
30895	1711+307	TU Her	p	49130.440	0.006	-0.036	10	HP	
30896			p	49130.441	0.006	-0.034	6	KL	
30897			p	49164.442	0.004	-0.038	10	HP	
30898			p	49198.443	0.006	-0.042	9	HP	
30899	1838+248	BO Her	p	49118.531	0.008	-0.004	8	KL	
30900	1615+090	CC Her	p	49139.526	0.002	+0.045	10	KL	
30901	1618+185	CT Her	p	49116.433	0.006	-0.009	12	HP	
30902			p	49166.467	0.005	+0.007	9	HP	
30903	1845+227	DH Her	p	49147.437	0.005	+0.004	14	HP	
30904	1732+151	DP Her	p	49130.547	0.007	+0.043	6	KL	
30905	1806+458	DQ Her	p	49158.393	0.001	+0.002	8	KL	
30906	1622+114	FN Her	p	49177.448	0.005	+0.124	9	HP	
30907	1848+235	GL Her	p	49163.443	0.006	+0.032	10	HP	
30908	1756+221	MM Her	p	49173.404	0.009	+0.036	7	KL	
30909	1819+144	MT Her	p	49133.555	0.003	+0.008	5	KL	
30910			p	49157.463	0.004	+0.018	9	HP	
30911			p	49176.480	0.006	+0.014	11	HP	
30912	1751+437	V338 Her	p	49163.495	0.005	+0.018	7	HP	
30913	1654+377	V359 Her	p	49158.403	0.004	+0.055	9	HP	
30914			p	49172.454	0.006	+0.060	8	HP	
30915	0811+006	WY Hya	s	49090.387	0.005	+0.008	7	HP	
30916			p	49104.338	0.005	-0.003	8	HP	
30917	0932+055	AV Hya	p	49098.354	0.005	-0.030	8	HP	
30918	2213+484	AU Lac	p	49211.519	0.003	-0.006	7	KL	
30919	2231+558	OO Lac	p	49202.465	0.005	+0.108	12	KL	
30920	0933+264	Y Leo	p	49105.403	0.004	-0.006	9	HP	
30921	0956+140	XX Leo	p	49076.393	0.008	-0.090	10	HP	
30922			p	49078.345	0.008	-0.080	10	HP	
30923	0958+176	XY Leo	p	49076.347	0.004	+0.067	8	HP	
30924			p	49116.406	0.005	+0.068	12	HP	
30925	0912+429	UU Lyn	p	49132.382	0.006	-0.001	8	HP	
30926	1914+323	RV Lyr	p	49215.431	0.009	-0.026	6	KL	
30927	1814+410	TZ Lyr	p	49132.428	0.004	+0.004	9	HP	
30928	1831+377	EW Lyr	p	49126.566	0.006	+0.246	6	KL	
30929			p	49130.467	0.005	+0.250	9	HP	
30930			p	49132.417	0.005	+0.251	8	HP	
30931	0643-002	DD Mon	p	49090.356	0.006	+0.085	10	HP	
30932	0722-050	FS Mon	p	49090.336	0.005	+0.005	9	HP	
30933	0742-074	HY Mon	p	48289.372		-0.094	11	AD	
30934			p	48602.455		-0.159	14	AD	
30935			p	48605.581		-0.164	9	AD	
30936			s	48642.374		-0.166	12	AD	
30937			s	48678.392		-0.160	9	AD	
30938			s	49002.503		-0.157	28	AD	
30939			p	48006.396		-0.179	13	AD	
30940	1755+046	V391 Oph	p	49207.493	0.004	+0.016	6	KL	
30941	1803+005	V423 Oph	p	49157.430	0.008	+0.028	15	APs	CCD
30942			p	49157.450	0.007	+0.048	10	HP	

	Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30943	1717-172	V441 Oph	p	49133.480	0.007	-0.173	17	APs	CCD	
30944	1728+106	V449 Oph	p	49167.545	0.004	+0.024	6	KL		
30945	1738+078	V506 Oph	p	49177.403	0.005	+0.025	7	HP		
30946	1756+135	V508 Oph	p	49130.417	0.005	+0.014	7	HP		
30947			p	49145.588	0.002	+0.015	8	KL		
30948	1824+042	V586 Oph	p	49185.505	0.005	-0.019	5	KL		
30949	1752+141	V913 Oph	p	49130.471	0.007	+0.064	9	HP		
30950			p	49176.494	0.006	+0.072	7	HP		
30951			p	49178.397	0.004	+0.058	6	KL		
30952	1820+040	V916 Oph	p	49176.470	0.008	+0.117	6	KL		
30953	2220+160	BB Peg	p	49198.449	0.005	+0.016	8	HP		
30954	2125+047	BN Peg	p	49139.547	0.003	+0.003	7	KL		
30955	0236+419	Z Per	p	49207.527	0.009	-0.090	7	KL		
30956	0156+529	KW Per	p	49175.510	0.003	-0.005	6	KL		
30957	0236+454	PS Per	p	49202.511	0.004	+0.041	8	KL		
30958	0217+542	V505 Per	p	49041.427	0.004	-0.002	9	MD		
30959	2331+076	Y Psc	p	49167.498	0.010	-0.033	7	KL		
30960	2010+191	UZ Sge	p	49158.419	0.006	-0.005	6	HP		
30961	1922+163	CU Sge	p	49177.456	0.004	-0.002	7	HP		
30962	1756-173	WX Sgr	p	49159.536	0.007	-0.058	6	KL		
30963	1836-227	DV Sgr	p	49177.422	0.009	-0.155	6	KL		
30964	1739-138	AK Ser	p	49133.568	0.003	+0.004	6	KL		
30965	1556+173	AO Ser	p	49146.582	0.003	+0.019	6	KL		
30966			p	49147.464	0.005	+0.022	8	HP		
30967			p	49176.476	0.004	+0.016	8	HP		
30968	1519+026	AQ Ser		49066.635	0.010	-0.40	16	APs	CCD, normal minimum	
30969				49094.53	0.01	-0.35	6	APs	CCD	
30970	1536+024	AS Ser	p	49158.411	0.006	+0.030	9	HP		
30971	1554+224	AU Ser	p	49077.537	0.003	-0.029	31	APs	CCD	
30972			s	49092.423	0.005	-0.024	8	HP		
30973			p	49132.419	0.004	-0.030	9	HP		
30974			p	49137.444	0.006	-0.029	9	HP		
30975			p	49147.503	0.006	-0.020	7	HP		
30976			p	49166.433	0.005	-0.028	7	HP		
30977			s	49172.422	0.005	-0.031	6	HP		
30978			p	49173.384	0.004	-0.034	6	KL		
30979	1534+156	CC Ser	s	49105.375	0.006	-0.009	7	HP		
30980			p	49130.412	0.007	+0.002	9	HP		
30981			p	49131.51	0.01	+0.07	23	APs	CCD	
30982			p	49146.476	0.005	+0.070	45	APs	CCD	
30983			p	49147.449	0.005	+0.011	10	HP		
30984	1535+190	LX Ser	p	49158.483	0.001	-0.002	6	KL		
30985	0400+279	RW Tau	p	49200.553	0.002	-0.072	8	KL		
30986	0434+015	AC Tau	p	49216.627	0.009	+0.078	7	KL		
30987	0344+249	AH Tau	p	49198.561	0.003	-0.079	6	KL		
30988	0128+301	V Tri	p	49211.530	0.004	-0.005	6	KL		
30989	1339+596	TW UMa	p	49098.586	0.004	-0.049	6	KL		

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
30990	1206+563	TY UMa	s	49076.404	0.007	+0.049	10	HP	elem. IBVS No. 1949
30991			s	49092.365	0.007	+0.055	11	HP	
30992			s	49098.386	0.005	+0.049	8	HP	
30993			s	49132.419	0.005	+0.046	11	HP	
30994	1334+521	UX UMa	p	49202.416	0.002	0.000	7	KL	
30995	0934+562	VV UMa	p	49078.312	0.004	-0.017	8	HP	
30996			p	49137.421	0.004	-0.023	9	HP	
30997	0928+496	XZ UMa	p	49076.303	0.004	-0.022	8	HP	
30998			p	49137.416	0.005	-0.026	9	HP	
30999	1026+620	ZZ UMa	p	49158.428	0.007	-0.005	7	HP	
31000	0943+459	AA UMa	s	49076.409	0.005	+0.003	7	HP	
31001			s	49092.331	0.004	+0.009	8	HP	
31002	1042+525	BH UMa	p	49090.393	0.008	-0.123	11	HP	
31003			p	49097.394	0.007	-0.109	11	HP	
31004			s	49163.427	0.006	-0.101	6	HP	
31005	1402-099	VV Vir	p	49159.430	0.004	-0.015	6	KL	
31006	1325+033	AW Vir	p	49090.430	0.007	+0.007	11	HP	
31007			s	49098.395	0.005	+0.006	10	HP	
31008			p	49107.422	0.006	+0.006	8	HP	
31009			s	49116.449	0.005	+0.006	8	HP	
31010	1340+048	AZ Vir	p	49076.392	0.008	-0.014	7	HP	
31011			p	49090.382	0.006	-0.010	10	HP	
31012			p	49097.377	0.006	-0.008	7	HP	
31013	1345-003	BF Vir	p	49097.384	0.006	+0.007	9	HP	
31014	1355-014	BH Vir	s	49090.433	0.007	-0.005	6	HP	
31015			p	49097.376	0.005	-0.005	7	HP	
31016			p	49137.399	0.005	-0.009	16	APs	CCD
31017	1919+254	Z Vul	p	<u>49158.4577</u>	0.0019	<u>-0.0030</u>	22	EBl	pe, B
31018	1927+273	XZ Vul	p	49139.592	0.008	+0.005	7	KL	
31019	2026+246	AW Vul	p	49164.496	0.004	0.000	8	HP	
31020			p	49177.400	0.005	0.000	8	HP	
31021			p	49198.367	0.005	-0.001	8	HP	
31022	2030+246	AX Vul	p	49178.420	0.009	-0.025	5	KL	
31023	2033+224	AY Vul	p	49213.465	0.009	+0.007	6	KL	
31024	2023+272	BE Vul	p	49164.463	0.005	+0.010	9	HP	
31025	1954+237	BO Vul	p	49147.431	0.003	+0.034	6	KL	
31026			p	49147.431	0.004	+0.034	9	HP	
31027	2023+208	BP Vul	p	49218.413	0.004	+0.007	6	KL	
31028	1935+218	BS Vul	p	49137.445	0.005	-0.006	10	HP	
31029			p	49147.450	0.005	+0.004	6	HP	
31030			p	49157.446	0.005	+0.005	6	HP	
31031			p	49177.427	0.005	-0.005	7	HP	
31032	2044+280	BU Vul	p	49164.495	0.005	+0.005	8	HP	
31033			p	49176.442	0.005	+0.003	9	HP	
31034	2023+263	CD Vul	p	49130.587	0.003	+0.010	6	KL	
31035	2011+265	DR Vul	p	<u>49198.479</u>	0.005	<u>+0.144</u>	16	RD	pe, B

