

# BBSAG Bulletin 82

1987 March 5

## 115<sup>th</sup> List of Minima of Eclipsing Binaries

The following table lists 251 heliocentric visual minima obtained mainly during 1986-7 November to February by the observers

EB1	Ernst Blättler, Wald, Switzerland
RG	Robert Germann, Wald, Switzerland
VH	Vincent Hainaut, Tilly, Belgium
SLa	Stéphane Lambert, Bruxelles, Belgium
ALh	Albert Lheureux, Bruxelles, Belgium
KL	Kurt Locher, Grüt, Switzerland
PLo	Patrick Louis, Namur, Belgium
GM	George Mavrofridis, Nikea, Greece
APs	Anton Paschke, Rüti, Switzerland
SP	Stefan Paschke, Rüti, Switzerland
HP	Hermann Peter, Otelfingen, Switzerland
TS	Thomas Schildknecht, Lyss, Switzerland
YT	Yvon Thirionet, Bruxelles, Belgium
AW	Alain Weil, Soye, Belgium
PWi	Patrick Wils, Niel, Belgium
LZ	Laurent Zimmermann, Bruxelles, Belgium

The O - C values refer to the linear elements of the GCVS....

....1985 for stars alphabetically prior to PAVO  
 ....1969 otherwise

Exceptions are marked and have been specified in BBSAG Bulletin 76, page 1, cipher 7. Reductions were made mainly using the tracing paper method.

Nr.	Design.	Star	Type	T <sub>obs</sub>	O-C	n	Obs.	Remarks
23581	2311+458	TT And	p	46766,268	-0,003	8	HP	
23582	0000+325	TW And	p	46742,336	-0,030	8	HP	
23583			p	46742,347	-0,019	6	KL	
23584	0041+306	UU And	p	46739,426	+0,009	6	KL	
23585	0058+378	WZ And	p	46760,339	+0,003	10	HP	
23586	0153+418	XZ And	p	46767,246	-0,000	9	EBI	
23587			p	46767,247	+0,001	8	RG	
23588			p	46798,467	+0,003	7	KL	
23589			p	46809,323	+0,001	6	KL	
23590	0205+405	BX And	p	46718,31	-0,00	25	APs	joint red. 6.10/14.10.
23591	0008+418	DO And	s	46821,287	-0,035	5	KL	
23592	0139+445	EP And	s	46764,272	-0,016	6	KL	
23593	2324+452	LO And	s	46705,409	-0,029	6	PW1	
23594			p	46727,307	-0,030	7	PW1	
23595	2117-110	RY Aqr	p	46714,346	-0,017	11	APs	
23596	2249-132	SU Aqr	p	46742,334	-0,011	15	APs	
23597			p	46764,27	-0,01	10	APs	
23598	2233-009	CX Aqr	p	46764,323	+0,004	9	HP	
23599			p	46798,228	-0,007	8	KL	
23600	2319-162	CZ Aqr	p	46742,239	-0,010	6	KL	
23601	2216-028	DY Aqr	p	46701,47	+0,13	17	APs	
23602	2231-201	EE Aqr	p	46712,276	+0,016	12	GM	
23603			p	46715,314	-0,001	14	GM	
23604			p	46716,336	+0,004	12	GM	
23605	1914-116	YZ Aql	p	46707,37	+0,35	10	APs	joint red. 5.9./3.10.
23606	1844+107	KO Aql	p	46627,470	-0,013	13	APs	
23607	2007+151	OY Aql	p	46656,512	+0,039	6	PW1	
23608	1914+092	V342 Aql	p	46707,295	-0,018	8	APs	
23609			p	46707,331	+0,018	13	HP	
23610	1936+126	V343 Aql	p	46712,349	-0,016	11	APs	
23611	1932+057	V417 Aql	s	46696,390:	-0,020:	10	APs	
23612			s	46702,311	-0,021	14	APs	
23613	0201+237	SS Aql	s	46760,293	-0,047	8	HP	
23614	0514+382	RY Aur	p	46746,467	+0,015	6	KL	
23615	0506+395	TT Aur	p	46773,445	-0,016	11	APs	joint red. 27.9./8.12.
Nr. <th>Design.</th> <th>Star</th> <th>Type</th> <th>T<sub>obs</sub></th> <th>O-C</th> <th>n</th> <th>Obs.</th> <th>Remarks</th>	Design.	Star	Type	T <sub>obs</sub>	O-C	n	Obs.	Remarks
23616	0543+411	XX Aur	p	46766,472	-0,263	6	KL	
23617	0506+293	CI Aur	p	46825,505	+0,066	6	KL	
23618	0509+334	CL Aur	p	46742,444	+0,067	7	KL	
23619	0536+325	FN Aur	p	46739,410	-0,557	4	KL	
23620			p	46764,446	-0,551	6	KL	
23621	1402+302	TU Boo	s	46768,632	-0,024	6	KL	
23622	0734+761	Y Com	p	46763,454	+0,059	6	KL	
23623	0837+200	RY Cnc	p	46762,586	+0,030	6	KL	
23624	0849+092	TU Cnc	p	46744,581	-0,018	6	KL	
23625	1354+289	YZ Cyg	p	46763,676	-0,006	5	KL	
23626	0717-163	R CMa	p	46536,247	-0,004	16	PLo	
23627	0620-226	RU CMa	p	46763,542	+0,023	6	KL	
23628	0711-180	RX CMa	p	46770,558	-0,051	6	KL	
23629	0615-215	E6 CMa	p	46769,463	-0,019	4	KL	
23630	0635-199	EL CMa	p	46744,669		6	KL	period unknown
23631			p	46760,445		5	KL	
23632			p	46773,586		9	KL	
23633	0737+040	AK CMi	p	46804,329	-0,010	6	KL	
23634	0707+020	AO CMi	p	46746,577	-0,076	6	KL	
23635	2021-131	TY Cap	p	46702,301	+0,003	22	APs	joint red. 5.9./28.9.
23636	0244+694	RZ Cas	p	46359,349	+0,005	16	VH	
23637			p	46648,587	-0,007	16	PLo	
23638			p	46708,361	+0,005	17	LZ	
23639			p	46708,364	+0,008	33	AW	
23640			p	46708,364	+0,008	11	APs	
23641			p	46708,365	+0,009	9	SP	
23642			p	46733,466	+0,010	10	YT	
23643			p	46733,472	+0,016	22	ALh	
23644			p	46733,473	+0,017	13	SLh	
23645			p	46751,392	+0,007	21	LZ	
23646			p	46751,398	+0,013	24	ALh	
23647			p	46751,398	+0,013	19	YT	
23648	0016+588	TY Cas	p	46364,301	+0,005	15	APs	joint red. 24.9./25.10.
23649			p	46701,448	+0,009	12	APs	
23650	0232+710	AB Cas	p	46708,480	+0,012	12	HP	
23651			p	46745,383	+0,009	9	HP	
23652			p	46764,520	+0,010	10	HP	
23653	0130+707	AH Cas	p	46731,469	-0,224	6	KL	
23654			p	46825,428	-0,217	7	KL	

Nr.	Design.	Star	Type	T <sub>obs</sub>	O-C	n	Obs.	Remarks
23655	2304+538	IR Cas	p	46765,372	+0,006	10	HP	
23656	0048+585	KL Cas	p	46763,571	-0,013	6	KL	
23657	0045+605	OR Cas	p	46760,357	-0,004	10	HP	
23658			p	46765,342	-0,001	7	HP	
23659	0037+499	V523 Cas	s	46749,316	+0,008	6	KL	
23660			s	46764,272	+0,007	7	KL	
23661	1140-355	V752 Cen	p	46798,595	-0,018	5	KL	
23662	0057+816	U Cep	p	46805,321	+0,031	8	KL	
23663	2350+686	XY Cep	p	46707,34	-0,00	7	APs	
23664	2225+659	BR Cep	p	46746,433	-0,017	6	KL	
23665	2024+614	HI Cep	p	46739,466	-0,011	4	KL	elem. BBSAG Bul. 81,6
23666			p	46746,508	+0,019	6	KL	
23667			p	46851,671	+0,016	4	KL	
23668	2109+575	IO Cep	p	46745,354	+0,012	4	KL	
23669	0220+809	V358 Cep	p	46731,363	+0,430	7	KL	elem. BBSAG Bul. 63,5
23670			p	46762,565	+0,414	6	KL	
23671	0212-124	RW Cet	p	46707,505	-0,006	16	APs	joint red. 2.10./3.10.
23672	0246+015	SS Cet	p	46787,390	+0,004	6	KL	
23673	0144-100	TT Cet	p	46707,554	-0,020	11	APs	
23674	0146-211	TW Cet	s	46739,429	-0,009	5	KL	
23675			p	46765,264	+0,002	7	RO	
23676	0153-009	TX Cet	p	46762,402	+0,014	9	HP	
23677	0147-198	VY Cet	s	46731,473	+0,009	6	KL	
23678			s	46770,310	-0,006	6	KL	
23679			s	46798,248	-0,014	10	KL	
23680	0156-231	AA Cet	p	46749,427	+0,008	6	KL	
23681			s	46765,247	+0,012	6	RO	
23682			p	46798,216	+0,007	10	KL	
23683	1205-128	W Crv	p	46766,719	-0,002	11	KL	
23684			p	46798,545	+0,002	6	KL	
23685	2005+461	SW Cyg	p	46747,296	-0,055	7	KL	
23686			p	46747,311	-0,040	10	HP	
23687	2022+467	ZZ Cyg	p	46745,391	-0,005	10	HP	
23688			p	46762,367	-0,002	8	HP	
23689			p	46764,250	-0,005	7	HP	
Nr.	Design.	Star	Type	T <sub>obs</sub>	O-C	n	Obs.	Remarks
23690	2056+349	CG Cyg	p	46753,318	+0,018	8	RO	
23691			p	46760,260	+0,017	8	RO	
23692			p	46767,200	+0,015	6	RO	
23693			p	46767,198	+0,013	6	EBl	
23694	2113+372	V387 Cyg	p	46745,330	+0,003	9	RO	
23695			p	46745,336	+0,009	9	HP	
23696			p	46763,263	0,000	7	RO	
23697	2027+389	V456 Cyg	p	46762,378	+0,019	9	HP	
23698	2126+454	V704 Cyg	s	46655,501	+0,015	10	PWl	
23699			p	46657,517	+0,034	8	PWl	
23700	2025+566	V728 Cyg	p	46753,258	+0,004	10	HP	
23701			p	46753,266	+0,012	7	KL	
23702	2035+181	W Del	p	46707,220	-0,018	9	APs	joint red. 6.8./3.10.
23703	2101+130	TY Del	p	46747,285	+0,056	6	HP	
23704	1142+725	Z Dra	p	46760,332	-0,013	6	HP	
23705			p	46798,332	-0,022	6	KL	
23706	2028+513	RZ Dra	p	46708,285	+0,015	7	APs	
23707	1803+583	SX Dra	p	46747,416	-0,003	6	KL	
23708	1655+527	AI Dra	p	46649,498	-0,009	16	PLo	
23709			p	46655,497	-0,004	18	PLo	
23710	1214+651	AR Dra	p	46807,691	-0,001	6	KL	
23711			p	46851,613	-0,008	6	KL	
23712	1922+698	NSY I 1987	p	46759,426	-1,154	5	KL	elem. BBSAG Bul. 72,4
23713		Dra	p	46760,633	-1,175	5	KL	
23714	0332-150	RU Eri	p	46707,594	-0,020	10	APs	
23715	0423-189	AK Eri	p	46770,447	-0,068	4	KL	
23716	0329-034	AS Eri	p	46707,543	-0,040	9	APs	
23717	0625+205	SX Gem	p	46770,629	-0,043	12	APs	
23718	0733+170	TX Gem	p	46742,552	+0,005	6	KL	
23719	0647+214	AF Gem	p	46762,375	-0,036	8	EBl	
23720	0608+233	BI Gem	p	46766,479	+0,004	5	KL	
23721	0627+196	CK Gem	p	46766,402	-0,043	6	KL	
23722	0637+218	CX Gem	p	46821,534	+0,015	6	KL	
23723	0644+169	FO Gem	p	46742,650	-0,006	16	APs	

Nr.	Design.	Star	Type	T obs	O-C	n	Obs.	Remarks
23724	1737+329	SZ Her	p	46753,241	-0,019	6	R0	
23725			p	46753,249	-0,011	6	KL	
23726			p	46753,251	-0,009	8	HP	
23727			p	46762,253	-0,007	7	HP	
23728			p	46762,255	-0,005	9	EBl	
23729	1615+090	CC Her	p	46850,614	+0,020	6	KL	
23730	1806+458	DQ Her	p	46648,483	-0,001	8	PWl	
23731			p	46649,452	+0,000	13	PWl	
23732	1751+437	V338 Her	p	46745,239	-0,008	8	HP	
23733	0827-092	SY Hya	p	46770,630	-0,015	6	KL	
23734	0926+057	TY Hya	p	46825,674	+0,014	5	KL	
23735	8031-144	VW Hya	p	46760,575	+0,026	6	KL	
23736	1017-229	VY Hya	p	46821,473	-0,035	6	KL	
23737	0928-187	AS Hya	p	46760,638		5	KL	per. only roughly known
23738	0828+034	KT Hya	p	46742,609	-0,070	6	KL	
23739	2228+543	TW Lac	p	46764,374	-0,004	8	HP	
23740	2238+380	VX Lac	p	46727,300	+0,000	9	HP	
23741			p	46742,346	+0,004	9	HP	
23742			p	46770,280	+0,001	7	R0	
23743	2213+484	AU Lac	p	46773,346	-0,015	6	KL	
23744	2226+535	D0 Lac	p	46764,450	-0,015	7	HP	
23745			p	46773,281	-0,010	9	R0	
23746	0933+264	Y Leo	p	46773,524	-0,006	6	KL	
23747	1037+092	RW Leo	p	46770,615	+0,009	5	KL	
23748	1142+250	BL Leo	p	46762,674	+0,002	6	KL	
23749	0507-149	Z Lep	p	46825,457	-0,146	4	KL	
23750	0557-202	RS Lep	p	46798,453	+0,012	7	KL	
23751	0851+466	RY Lyn	p	46744,638	-0,052	6	KL	
23752	1919+378	UZ Lyr	p	46727,336	+0,011	7	HP	
23753	1915+328	BY Lyr	p	46850,623	+0,028	6	KL	
23754	0632+088	RW Mon	p	46731,480	+0,005	6	KL	
23755			p	46773,409	0,000	7	KL	
23756	0652+052	TV Mon	p	46762,587	+0,008	6	KL	
23757	0657-105	AN Mon	p	46825,438	-0,029	6	KL	
23758	0706+007	BM Mon	p	46825,468	+0,008	7	KL	
23759	0757-033	BO Mon	p	46825,395	-0,004	7	KL	
23760	0755-070	FW Mon	p	46798,477	+0,007	11	KL	
23761	0702-023	GH Mon	p	46745,603	-0,037	5	KL	
23762	0631+094	GO Mon	p	46760,522	-0,187	6	KL	
23763	0700+003	HM Mon	p	46762,548	0,000	6	KL	
23764	0635+036	V396 Mon	p	46744,594	+0,010	6	KL	
23765	0656+022	V524 Mon	p	46766,497	+0,010	5	KL	
23766	0749-011	NSV 3772 Mon	p	46760,632	+0,046	7	KL	elem. BBSAG Bul. 75,4
23767	1803+005	V423 Oph	p	46705,309	+0,019	8	APs	joint red. 2.9/1.10.
23768	1728+106	V449 Oph	p	46851,674	+0,002	6	KL	
23769	1752+141	V913 Oph	p	46850,693	-0,007	5	KL	
23770	0454-036	E0 Ori	p	46744,654	-0,025	6	KL	
23771	0505-028	FL Ori	p	46746,426	-0,014	6	KL	
23772	0533+088	OS Ori	p	46742,58	+0,01	15	APs	
23773			p	46742,582	+0,008	6	KL	
23774	0552-093	V640 Ori	p	46821,284	-0,021	7	KL	
23775	0612+155	V645 Ori	p	46825,314	+0,016	6	KL	

Nr.	Design.	Star	Type	T <sub>obs</sub>	O-C	n Obs.	Remarks
23776	2125+047	BN Peg	p	46764.271	-.271	8	HP
23777	0236+419	Z Per	p	46747.269	+.011	6	KL
23778	0320+464	RT Per	p	46747.332	-.076	7	HP
23779			p	46753.277	-.077	6	KL
23780	0256+389	ST Per	p	46745.408	-.040	12	HP
23781			p	46766.598	-.036	7	HP
23782	0405+464	XZ Per	p	46742.422	+.016	6	KL
23783			p	46764.301	+.014	6	KL
23784			p	46765.454	+.015	8	HP
23785	0256+437	IU Per	p	46762.429	+.085	6	HP
23786	0156+529	KW Per	p	46753.299	+.040	4	KL
23787			p	46764.485	+.050	11	HP
23788	0304+407	B Per	p	46702.419	-.184	8	EB1
23789			p	46728.234	-.175	11	EB1
23790			p	46745.442	-.170	9	EB1
23791			p	46768.373	-.178	8	EB1
23792	2331+076	Y Psc	p	46742.348	+.134	8	HP
23793	0054+120	SX Psc	p	46760.360	-.033	10	HP
23794			p	46765.314	-.035	8	HP
23795	0114+065	UV Psc	p	46760.303	+.025	6	RG
23796			p	46760.306	+.028	8	HP
23797	0811-238	XZ Pup	p	46759.685	-.015	6	KL
23798			p	46825.454	-.017	6	KL
23799	0736-243	AY Pup	p	46798.427	+.066	7	KL
23800	0739-151	GK Pup	p	46766.527	+.014	7	KL
23801			p	46766.533	+.020	6	TS
23802	0033-259	RT Scl	p	46753.298	-.148	4	KL
23803	1534+190	LX Ser	p	46831.587	+.048 *	6	KL *elements accord- ing to IAUC 3466
23804	0400+279	RW Tau	p	46808.344	-.108	6	KL
23805	0434+015	AC Tau	p	46766.576	+.076	9	HP
23806	0344+249	AH Tau	p	46827.284	-.064	6	KL
23807	0549+162	AM Tau	p	46827.243	-.203	6	KL
23808	0511+276	AS Tau	p	46831.297	+.164	7	KL
23809	0345+221	EQ Tau	p	46742.303	+.005 *	7	RG *elements accord- ing to GCVS 1976
23810			s	46763.291	+.001 *	7	RG
23811			p	46770.290	+.002 *	10	EB1
23812			p	46770.292	+.004 *	7	RG
23813			p	46773.364	+.004 *	8	RG
23814	0526+287	ES Tau	p	46746.678	-.001 *	6	KL *elements accord- ing to BBSAG 58 <sub>5</sub>
23815	0128+291	V Tri	p	46762.446	+.016	10	HP
23816			p	46809.254	+.008	6	KL
23817	0157+276	X Tri	p	46713.355	-.047	9	PWi
23818			p	46744.439	-.053	9	HP
23819			p	46745.410	-.053	8	HP
23820			p	46745.415	-.047	11	EB1
23821			p	46747.351	-.055	14	RG
23822	0132+293	RS Tri	p	46765.457	+.014	8	HP
23823	0210+367	RV Tri	p	46764.358	-.039	10	HP
23824	0222+278	RW Tri	p	46760.418	-.004	6	KL
23825	1334+521	UX UMa	p	46821.513	-.001	4	KL
23826	0928+496	XZ UMa	p	46807.701	-.065	7	KL
23827	1402-099	VV Vir	p	46851.582	-.003	5	KL BBSAG 31,6
23828	2026+246	AW Vul	p	46765.310	-.016	10	HP
23829	1954+237	BO Vul	p	46742.320	-.089	7	KL
23830			p	46742.326	-.084	8	HP
23831	2044+280	BU Vul	p	46742.289	+.011	7	RG

Note on the Amplitude of F W M n

The GCVS 1985 gives  $|m_p \text{ max} - m_p \text{ min}| = 1.2$  and spectra B5 & F2 for this EA binary.

My recent dense visual survey (no. 23760 page 4) has yielded

$$|m_v \text{ max} - m_v \text{ min}| = 1.7 \pm .1$$

which should be considerably less than the photographic amplitude assuming the spectra to be correct. The catalogued amplitude is therefore to be revised.

K. Locher

E R R A T A

( 6<sup>th</sup> list after the general one in BBSAG Bulletin 54, pages 4 - 6 )  
 { 5<sup>th</sup> " see BBSAG Bulletin 75, page 3 }  
 { 4<sup>th</sup> " " " " 65, " 7 }  
 { 3<sup>rd</sup> " " " " 63, " 4 }  
 { 2<sup>nd</sup> " " " " 60, " 7 }  
 { 1<sup>st</sup> " " " " 58, " 5 }

Corrections are underlined

Bulletin no. Minimum no.

76	22340	1638+608 WW Dra	s	46175.376	<u>±.097</u>	8	RG ✓
77	22455	2008+102 V 346 Aql	p	<u>46235.404</u>	<u>-.009</u>	6	NSV
	22458	1922+159 V1353 Aql	p	46252. <u>454</u>	<u>-.001</u>	24	PSy
	22533	2051+045 FZ Del	p	46259.394	<u>-.017</u>	7	HP
	22547-8	NSV 11987 Dra (reference to BBSAG 72)					
	22552	1738+330 SZ Her	p	4620 <u>4.309</u>	<u>+.038</u>	7	GM
80	23214	0630+823 SV Cam	p	46547. <u>440</u>	<u>+.014</u>	12	APs ✓
	23215	1329+288 VZ CVn	p	46528. <u>438</u>	<u>-.009</u>	20	APs ✓
	23217	0717-163 R CMa	p	46503. <u>327</u>	<u>+.018</u>	13	APs ✓
	23229	1230+269 RW Com	p	46535. <u>414</u>	<u>-.012</u>	10	APs ✓
	23257	1142+725 Z Dra	p	46517. <u>354</u>	<u>-.007</u>	8	APs ✓
	23289	0958+176 XY Leo	p	46529.354	<u>+.003</u>	9	APs ✓
	23290		p	46552. <u>377</u>	<u>+.014</u>	11	APs ✓
	23291	0959+172 XZ Leo	p	46535. <u>381</u>	<u>-.005</u>	11	AR ✓
	23292	1059+101 AM Leo	p	46557. <u>393</u>	<u>-.005</u>	16	APs ✓
	23293		p	46561. <u>402</u>	<u>-.020</u>	15	APs ✓