

BBSAG Bulletin 81

1986 October 31

114th List of Minima of Eclipsing Binaries

The following table lists 4 photoelectric (underlined) and 238 visual heliocentric minima obtained mainly 1986 August to October by the observers

RD	Roger Diethelm, Rodersdorf, Switzerland
DE	Demetrius P.Elias, Penteli, Greece
RG	Robert Germann, Wald, Switzerland
MKo	Michael Kohl, Uster, Switzerland
KL	Kurt Locher, Grüt, Switzerland
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

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

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

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

Nr.	Design.	Star	Type	T _{obs}	O-C	n	Obs.	Remarks
23339	2308+527	RT And	p	46639,361	-0,001	13	APs	joint red. 20./27.7
23340	0041+306	UU And	p	46678,502	+0,023	6	KL	
23341	0058+378	WZ And	p	46659,460	-0,006	13	APs	
23342	0153+418	XZ And	p	46684,454	+0,001	6	KL	
23343			p	46714,316	+0,003	9	RG	
23344	2309+366	AB And	p	46684,334	+0,007	12	APs	
23345	0008+418	DO And	s	46696,314	-0,016	5	KL	
23346	0139+445	EP And	s	46717,398	-0,013	9	KL	
23347	0209+444	OZ And	s	46704,327	+0,005	6	KL	
23348	0031+410	HS And	p	46702,385	+0,117	6	KL	
23349	2117-110	RY Aqr	p	46645,511	-0,021	21	APs	
23350	2218-072	ST Aqr	p	46346,344	-0,024	10	APs	
23351			p	46350,264	-0,009	9	APs	
23352			p	46627,524	-0,022	9	APs	
23353			s	46679,435	-0,027	11	APs	
23354	2202-090	XZ Aqr	p	46679,366	+0,025	6	KL	
23355	2209-230	AO Aqr	p	46657,474	-0,026	9	KL	elem. BBSAG Bul. 80,4
23356	2204-209	AT Aqr	p	46651,555	+0,048	5	KL	
23357	2233-009	CX Aqr	p	46687,592	-0,001	8	RG	
23358			p	46714,284	+0,004	6	KL	
23359	2319-162	CZ Aqr	p	46646,480	-0,003	6	KL	
23360	2217-009	SYS 2647 Aqr	p	46644,455	+0,027	8	KL	elem. Per. Zv. 22,323
23361	2219-029	SYS 2649 Aqr	p	46674,492	-0,016	6	KL	elem. Per. Zv. 22,328
23362	1936+064	LT Aql	p	46651,452	+0,061	5	KL	
23363	1936+126	V343 Aql	p	46627,490	-0,023	17	APs	
23364	2007+102	V346 Aql	p	46681,279	+0,002	9	GM	
23365			p	46692,343	+0,002	6	GM	
23366			p	46713,350	-0,012	11	GM	
23367	1932+057	V417 Aql	s	46676,379	-0,044	13	APs	
23368	1847+106	V479 Aql	p	46674,388	-0,006	6	KL	
23369	1958+085	V760 Aql	p	46657,390	-0,036	6	KL	
23370	1958+142	V761 Aql	p	46651,534	+0,080	4	KL	
23371	1858-075	V803 Aql	s	46678,402	+0,001	6	KL	
23372	1903-117	V805 Aql	p	46678,358	+0,003	5	RD	
23373	1904-096	V808 Aql	p	46646,443	-0,017	10	KL	
23374	1908+120	V917 Aql	p	46646,528	-0,010	5	KL	
23375	1948+151	V1045 Aql	p	46702,396	-0,011	6	KL	
23376	1922+159	V1353 Aql	p	46624,571	+0,024	10	APs	
23377			p	46627,403	+0,027	9	APs	
23378			p	46685,393	+0,010	13	APs	
23379	0456+299	BE Aur	p	46717,582	-0,035	6	KL	
23380	0506+293	CI Aur	p	46679,607	+0,029	6	KL	
23381	0548+302	FW Aur	p	46681,591	-0,040	5	KL	
23382	1419+473	UW Boo	p	46613,470	+0,023	10	APs	
23383	0000+574	EY Cas	s	46657,532	-0,100	7	KL	
23384	0033+549	FV Cas	p	46712,549	-0,018	10	KL	
23385	0145+560	GH Cas	p	46718,335	-0,121	6	KL	
23386	2304+538	IR Cas	p	46714,342	+0,028	6	KL	
23387	0028+734	V380 Cas	p	46657,405	-0,043	16	APs	
23388	0037+499	V523 Cas	s	46657,471	+0,003	10	MKo	
23389	2038+754	VW Cep	p	46607,375	-0,041	6	GM	
23390			p	46612,385	-0,041	6	GM	
23391			p	46614,332	-0,043	8	GM	
23392			p	46692,270	-0,034	6	GM	
23393			p	46700,343	-0,031	6	GM	
23394			p	46707,308	-0,023	10	GM	
23395			p	46712,308	-0,033	8	GM	
23396			p	46714,265	-0,024	5	GM	
23397	2320+726	WZ Cep	p	46657,443	-0,001	15	APs	
23398	2336+640	XX Cep	p	46326,360	+0,018	8	APs	
23399			p	46340,356	-0,010	14	APs	
23400			p	46700,317	+0,003	11	GM	
23401			p	46707,329	+0,002	11	GM	
23402	2350+686	XY Cep	p	46657,400	-0,002	17	APs	joint red. 20.7/14.8
23403	2017+766	EO Cep	p	46646,370	+0,001	15	APs	
23404			p	46646,373	+0,004	11	SP	
23405	2320+650	CM Cep	p	46659,588	-0,019	7	KL	
23406	2306+609	DP Cen	p	46644,454	-0,050	7	KL	

Nr.	Design.	Star	Type	T _{obs}	O-C	n	Obs.	Remarks
23407	2024+614	HI Cap	p	46576,460	-0,008	4	KL	elem. BBSAG Bul. 81, 6
23408			p	46590,505	+0,015	9	KL	
23409			p	46597,495	-0,006	6	KL	
23410			p	46611,512	-0,012	7	KL	
23411			p	46674,624	+0,001	11	KL	
23412			p	46681,638	+0,004	5	KL	
23413			s	46717,597	+0,030	6	KL	
23414			p	46718,458	+0,015	11	KL	
23415	0220+809	V358 Cap	p	46659,497	+0,395	6	KL	elem. BBSAG Bul. 63, 4
23416			p	46712,447	+0,403	7	KL	
23417	0146-211	TW Cat	s	46659,591	-0,001	6	KL	
23418	0156-231	AA Cat	s	46659,617	+0,007	7	KL	
23419	2021+430	UW Cyg	p	46685,336	+0,023	7	KL	
23420	2104+455	VY Cyg	p	46644,591	-0,010	5	KL	
23421	2051+386	WZ Cyg	p	46706,404	+0,033	6	HP	
23422	2022+467	ZZ Cyg	p	46706,417	-0,005	6	HP	
23423	2056+349	CG Cyg	p	46645,393	+0,018	7	RG	
23424			p	46705,352	+0,018	6	RG	
23425			p	46657,391	+0,024	7	MKO	
23426	1938+291	EN Cyg	p	46678,472	+0,097	6	KL	
23427	1928+342	HK Cyg	p	46718,282	-0,048	6	KL	
23428	1941+326	V370 Cyg	p	46646,507	-0,003	6	KL	
23429	2113+372	V387 Cyg	p	46645,399	+0,005	7	RG	
23430			p	46679,345	-0,000	8	RG	
23431			p	46702,407	+0,000	7	RG	
23432	2014+386	V435 Cyg	p	46645,532	-0,012	7	KL	
23433	2003+318	V477 Cyg	p	46686,443	-0,019	5	GM	
23434	1924+298	Y687 Cyg	p	46685,385	+0,001	8	HP	
23435	1931+283	Y889 Cyg	p	46678,331	-0,017	5	RD	
23436	2021+523	V1048 Cyg	p	46678,600	-0,006	9	KL	
23437	2105+518	V1061 Cyg	p	46651,4515	-0,0023	8	RD	
23438	2014+519	V1188 Cyg	p	46674,542	-0,019	8	KL	
23439	2117+407	V1665 Cyg	p	46625,361	-0,004	9	DE	
23440	2126+376	V1723 Cyg	p	46630,448	+0,007	28	DE	
23441	2136+357	V1729 Cyg	p	46678,458	+0,024	6	KL	
23442	2040+382	V1788 Cyg	p	46643,4	-0,7	4	KL	elem. BBSAG B. 68, p.6
23443	2033+082	TI Del	p	46679,466	+0,003	6	KL	
23444	2101+130	TY Del	p	46642,435	+0,026	10	APs	
23445			p	46679,360	+0,026	8	RG	
23446	2051+044	FZ Del	p	46591,468	-0,024	9	MKO	
23447			p	46707,395	-0,013	6	HP	
23448	1142+725	Z Dra	p	46681,593	-0,020	7	KL	
23449	1841+626	RR Dra	p	46700,339	+0,024	9	KL	
23450	1822+588	RZ Dra	p	46703,311	-0,001	7	RG	
23451			p	46708,282	+0,012	6	RG	
23452			p	46714,332	+0,003	8	RG	
23453	1533+640	TW Dra	p	46707,366	+0,274	12	GM	
23454	1820+475	TZ Dra	p	46657,523	+0,001	10	MKO	
23455	1817+550	XY Dra	p	46679,476	+1,007	7	KL	
23456			p	46702,612	+1,000	7	KL	
23457	1655+527	AI Dra	p	46612,361	+0,017	10	GM	
23458			p	46618,354	+0,017	5	GM	
23459			p	46672,289	+0,005	6	GM	
23460			p	46684,274	+0,001	6	GM	
23461			p	46690,273	+0,006	11	GM	
23462	1922+698	NSV11987 Dra	p	46651,481	-1,035	6	KL	elem. BBSAG B. 72, p.4
23463			p	46678,467	-1,065	6	KL	
23464	0419-061	TZ Eri	p	46685,627	+0,023	7	KL	
23465	0639+134	AV Gem	p	46676,611	-0,024	6	KL	
23466	1737+329	SZ Her	p	46657,530	-0,013	8	MKO	
23467			p	46717,250	-0,014	6	KL	
23468	1711+307	TU Her	p	46684,367	-0,015	10	KL	
23469	1717+419	TX Her	p	46657,447	+0,018	10	MKO	
23470	1711+164	AK Her	p	46561,448	+0,011	11	APs	
23471	1838+248	BO Her	p	46674,442	-0,028	7	KL	
23472	1615+090	CC Her	p	46689,343	+0,012	8	KL	
23473	1845+227	DH Her	p	46657,491	+0,001	10	KL	
23474	1851+242	DI Her	s	46651,4332	+2,8403	9	RD	displaced secondary
23475	1806+458	DQ Her	p	46651,580	-0,002	7	KL	
23476	1622+114	FN Her	p	46642,287	+0,130	34	APs	joint reduc. 10.5/30.7.

Nr.	Design.	Star	Type	T _{obs}	O-C	n	Obs.	Remarks
23477	1819+144	MT Her	p	46613.525	+0,016	8	APs	
23478			p	46614.485	+0,001	15	APs	
23479			p	46678.373	-0,002	13	APs	
23480			p	46679.353	+0,002	7	KL	
23481	1751+437	V338 Her	p	46707.377	-0,004	8	HP	
23482	2251+376	SW Lac	p	46682.354	+0,004	10	GM	
23483			p	46684.269	-0,006	8	GM	
23484			p	46691.331	+0,001	6	GM	
23485			p	46692.295	+0,003	7	GM	
23486			p	46700.313	+0,002	7	GM	
23487			p	46715.379	-0,005	7	GM	
23488	2228+543	TW Lac	p	46679.335	+0,005	6	KL	
23489	2238+380	VX Lac	p	46657.460	+0,003	10	MKO	
23490	2231+558	OO Lac	p	46712.509	+0,069	10	KL	
23491	0601-249	RU Lep	p	46718.682	+0,019	5	KL	
23492	1925+415	TT Lyr	p	46696.333	-0,002	5	KL	
23493	1814+410	TZ Lyr	p	46657.521	+0,007	11	MKO	
23494	1919+378	UZ Lyr	p	46708.418	+0,005	7	HP	
23495	1913+269	AK Lyr	p	46650.397	-0,535	4	KL	
23496	1831+377	EW Lyr	p	46657.522	+0,234	8	MKO	
23497			p	46657.526	+0,239	9	KL	
23498	1848+333	β Lyr	p	46608.9	+6,88	6	RG	
23499	1803+005	V423 Oph	p	46582.525	+0,021	32	APs	
23500	1728+106	V449 Oph	p	46625.432	-0,000	8	DE	
23501			p	46681.372	+0,001	8	APs	
23502	1840+087	V456 Oph	s	46626.511	+0,009	11	APs	
23503			s	46627.521	+0,003	15	APs	
23504	1816+142	V501 Oph	p	46613.484	-0,002	15	APs	
23505			p	46614.457	+0,003	13	APs	
23506	1638+006	V502 Oph	p	46614.484	-0,012	12	APs	
23507			p	46649.379	-0,029	11	APs	
23508	1756+135	V508 Oph	p	46681.350	+0,006	5	MKO	
23509			s	46705.320	+0,013	8	RG	
23510	1754+049	V566 Oph	p	46591.443	+0,004	11	APs	
23511			p	46610.331	+0,049	8	GM	
23512			n	46612.358	+0,027	5	GM	
23513	1834+104	V636 Oph	p	46702.363	-0,002	7	KL	
23514	1820+040	V916 Oph	p	46678.353	+0,031	9	KL	
23515	0454-036	EQ Ori	p	46676.566	-0,016	6	KL	
23516	0502+092	FK Ori	p	46679.591	-0,003	6	KL	
23517	0505-028	FL Ori	p	46718.513	-0,009	6	KL	
23518	0544+058	QT Ori	p	46676.600	-0,344	6	KL	
23519	0612+155	V645 Ori	p	46679.638	+0,001	5	KL	
23520	2355+156	U Peg	p	46321.542	-0,046	14	APs	
23521			p	46350.407	-0,037	12	APs	
23522			p	46685.460	-0,039	8	APs	
23523			p	46700.448	-0,042	9	APs	
23524	2327+132	TY Peg	p	46645.486	-0,043	18	APs	
23525			p	46707.323	-0,050	8	APs	
23526	2226-177	UX Peg	p	46707.443	-0,022	9	HP	
23527	2220+169	BB Peg	p	46706.418	-0,000	11	APs	
23528	2250+153	BG Peg	p	46707.440	+0,031	16	APs	
23529	2146-278	CM Peg	p	46679.446	-0,261	7	KL	
23530	2329+146	DI Peg	p	46305.501	-0,021	17	APs	
23531			p	46320.450	-0,020	8	APs	
23532			p	46350.345	-0,022	13	APs	
23533			p	46422.238	-0,022	10	APs	
23534			p	46678.490	-0,025	10	APs	
23535	2339+099	DK Peg	p	46377.361	+0,032	15	APs	
23536			p	46687.434	+0,062	9	APs	
23537	2231-134	EH Peg	p	46385.217	-0,054	16	APs	
23538	0320+464	RT Per	p	46706.552	-0,085	9	HP	
23539	0405+464	XZ Per	p	46655.502	+0,013	6	KL	
23540			p	46681.380	+0,010	9	MKO	
23541	0256+437	IU Per	p	46708.441	+0,089	8	HP	
23542	0156+529	KW Per	p	46657.394	+0,053	8	MKO	
23543			p	46696.511	+0,058	5	KL	
23544	0304+407	8 Per	p	46702.414	-0,189	9	RG	
23545	2331+076	Y Peg	p	46708.460	+0,139	12	HP	
23546	1922-163	CU Sge	p	46627.501	+0,005	14	APs	
23547			p	46676.420	+0,035	13	APs	
23548			p	46678.363	+0,023	9	APs	
23549	1846-103	RS Sct	p	46626.500	+0,015	9	APs	
23550			p	46648.419	+0,014	15	APs	
23551	1842-061	FG Sct	p	46704.316	-0,044	6	KL	
23552	1534+190	LX Ser	p	46625.466	+0,044	19	DE	elements accord- ing to IAU 3466
23553	0434-015	AC Tau	p	46674.622	+0,072	6	KL	
23554	0344-249	AH Tau	p	46661.611	-0,065	7	KL	
23555	0511-276	AS Tau	p	46702.422	+0,178	6	KL	
23556	0412-305	BN Tau	p	46674.511	+0,058	6	KL	
23557	0128+291	V Tr1	p	46696.317	+0,015	6	KL	
23558	0157+275	X Tr1	p	46706.531	-0,051	9	HPs	
23559			p	46707.520	-0,053	10	APs	
23560			p	46708.492	-0,053	11	HP	
23561			p	46714.323	-0,046	10	RG	
23562	0222-278	RW Tr1	p	46674.621	-0,004	6	KL	
23563			p	46674.623	-0,002	6	KL	
23564	1206+563	TY UMa	p	46552.395	+0,009	10	MKO	elements accord- ing to IBVS 1949
23565	0936+562	VV UMa	p	46657.380	+0,157	8	MKO	
23566			p	46681.433	+0,152	7	MKO	
23567	2035+276	VV Vul	p	46700.335	+0,240	6	KL	
23568	1927+273	XZ Vul	p	46717.319	+0,387	7	KL	
23569	2026+246	AM Vul	p	46681.433	-0,022	6	MKO	
23570			p	46706.438	-0,017	9	HP	
23571	1954+237	BO Vul	p	46627.514	-0,088	16	APs	
23572			p	46701.452	-0,093	13	RG	

Nr.	Design.	Star	Type	T _{obs}	O-C	n Obs.	Remarks
23573			p	46705.342	-.095	8	RG
23574			p	46705.350	-.087	11	HP
23575			p	46707.297	-.086	9	HP
23576	2044+278	BU Vul	p	46657.513	+.015	9	MKo
23577			p	46681.411	+.015	11	HP
23578			p	46685.388	+.009	8	HP
23579			p	46706.449	+.017	8	HP
23580	2023+262	CD Vul	p	46705.331	-.020	7	HP

The Yellow Amplitude of RS Leporis

The GCVS 1985 entries on magnitudes and their relating reference, revised with respect to the GCVS 1969, have evoked our serious doubts. They read :

1969 : 9.3 10.92 p No. 3404 = AJ 69, 92, 1964

1985 : 9.91 10.38 V No. 2487 = AJ 64, 56, 1959

Having surveyed visually several minima in almost each of the 20 past winters, we are quite sure that the visual amplitude is about $1^m.5$, by the way in agreement with Fig.1 in reference No.3404, and that it did not undergo any remarkable change meanwhile.

R.Germann, M.Kohl, K.Locher, H.Peter

The Minimum Brightness of AE Geminorum

Since the GCVS 1985 still gives an unknown minimum magnitude for this EA binary, we should like to remind that such a value has been published as $13^m.0 \pm 0.3$ already in 1977, BBSAG Bulletin 32, page 4.

K.Locher

V 1061 Cygni : The Duration of Totality

Since the new edition of the GCVS (1985) contains no information on the duration d of totality for the eclipsing variable V 1061 Cygni in primary minimum, we would like to note that the minimum observed photoelectrically during the night of JD 46651 in the instrumental b system (close to the standard Johnson B) yielded the following value :

$$d = 55^m \pm 5^m, \text{ corresponding to}$$

$$d/p = 0.016 \pm 0.002$$

R. Diethelm

H I Cephei : Detection of the Period

The GCVS 1985 classifies this variable as E without known period. My visual survey during 33 nights April to October 1986 yields EA type, probably subtype /SD, the elements

$$JD_{\text{hel Min}_I} = 2446576.468 + 1.75278 E$$

and the photometric parameters

$$D_I / p = D_{II} / p = 0.08 \pm 0.01$$

$$d_I / p = 0.01 \pm 0.01$$

$$m_{\text{max}} - m_{\text{min}_{II}} = 0.2 \pm 0.1$$

whereas the GCVS primary amplitude is roughly confirmed.

Figure 78 plots all my observations against phase, along with 5 photovisual observations marked *, found in 1986 patrols by P.Wild (field NGC 6946) and investigated by the author.

K. Locher

Plot symbols in Figure 78 :

JD 2446000 +	542	563	576	577	582	584	588	590	591	592	596
	A	B	C	D	E	G	S	H	K	Ø	M
	597	598	599	602	603	606	607	608	611	646	650
	N	O	+	X	Q	c	m	n	S	U	s
	657	674	679	680	681	687	689	701	704	717	718
	o	X	Z	Y	Z	8	3	w	&	\$	#

