

BBSAG Bulletin 83

1987 May 21

116th List of Minima of Eclipsing Binaries

The following table lists 10 photoelectric (underlined) and 187 visual minima obtained mainly during 1987 March - May by the observers

RD Roger Diethelm, Rodersdorf, Switzerland
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
HP Hermann Peter, Otelfingen, Switzerland

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 using mainly the tracing paper method.

Hr.	Design.	Star	Type	T _{obs}	0-C	n	Obs.	Remarks
23832	2308+527	RT And	p	46768.305	+0.012	5	GM	
23833			p	46795.339	+0.002	8	GM	
23834	0153+418	XZ And	p	46824.254	+0.002	8	HP	
23835			p	46866.318	-0.010	5	KL	
23836	2309+366	AB And	p	46757.347	+0.004	10	GM	
23837			p	46760.331	+0.001	7	GM	
23838			p	46766.296	-0.008	7	GM	
23839			p	46768.298	+0.003	8	GM	
23840	0108+466	CO And	p	46819.317	+0.008	10	HP	
23841	1936+064	LT Aql	p	46913.605	+0.054	4	KL	
23842	1847+106	Y479 Aql	p	46908.581	-0.004	5	KL	
23843	1858-075	Y803 Aql	s	46907.585	+0.004	6	KL	
23844	1908+120	Y917 Aql	p	46908.618	+0.046	6	KL	
23845	0201+237	SS Afi	p	46843.323	-0.043	4	GM	
23846	0542+411	ZZ Aur	p	46816.366	-0.009	6	HP	
23847			p	46819.399	+0.018	9	HP	
23848			p	46825.397	+0.004	7	HP	
23849	0544+430	IY Aur	p	46834.292	-0.099	7	GM	
23850	0624+304	KU Aur	p	46877.380	+0.039	7	KL	
23851	0526+353	LY Aur	p	46862.304	-0.021	7	RD	
23852	1402+302	TU Boo	p	46861.541	-0.023	6	KL	
23853	1506+401	TZ Boo	s	46908.3544	-0.0532	7	RD	
23854			p	46909.3918	-0.0559	7	RD	
23855	1346+204	XY Boo	p	46903.4115	+0.2179	9	RD	
23856	1454+465	AC Boo	s	46909.3864	+0.0533	8	RD	
23857	0630+823	SY Cam	p	46757.393	+0.020	13	GM	
23858			p	46760.359	+0.020	7	GM	
23859			p	46766.289	+0.020	8	GM	
23860			p	46795.349	+0.019	6	GM	
23861			p	46836.271	+0.019	6	GM	
23862			p	46843.387	+0.019	7	GM	
23863	0510+757	XZ Cam	p	46831.606	+0.064	5	KL	
23864	0447+548	AQ Cam	p	46831.273	+0.012	4	KL	
23865	0837+200	RY Cnc	p	46877.352	+0.037	6	KL	
23866	0849+092	TU Cnc	p	46861.363	-0.026	7	KL	
23867	0858+268	WY Cnc	p	46908.3508	-0.0044	6	RD	
23868	1329+288	YZ Cyb	p	46908.3953	-0.0020	6	RD	
23869	1354+289	YZ Cyb	p	46875.360	+0.001	7	KL	
23870	0656-187	UU CMa	p	46875.353	-0.034	9	KL	
23871	0635-199	EL CMa	p	46831.395		10	KL	period unknown
23872	0737+040	AK CM1	p	46843.380	-0.006	6	GM	
23873			p	46847.342	-0.006	5	GM	
23874	0244+694	RZ Cas	p	46861.354	+0.006	15	RD	
23875			p	46867.334	+0.010	9	RD	
23876	0232+710	AB Cas	p	46797.324	+0.009	8	GM	
23877			p	46849.267	+0.011	7	GM	
23878	2302+592	CR Cas	p	46902.406	-0.065	5	KL	
23879	0037+499	V523 Cas	p	46819.311	+0.012	8	HP	
23880	1140-355	V752 Cen	s	46884.321	0.000	5	KL	
23881	2246+647	AH Cep	p	46917.539	+0.038	5	RD	
23882	2157+607	DK Cep	p	46881.582	+0.015	6	KL	
23883	2024+614	HI Cep	p	46902.520	+0.035	6	KL	elem. BBSAG Bul. 81, 6
23884			p	46909.531	+0.035	9	KL	
23885			p	46923.550	+0.032	6	KL	
23886	0220+809	V358 Cep	p	46875.576	+0.450	7	KL	elem. BBSAG Bul. 63, 5
23887			s	46917.442	+0.481	11	KL	
23888	1230+269	RW Com	p	46901.391	-0.021	7	RG	
23889			s	46904.365	-0.015	8	RG	
23890	1232+236	RZ Com	s	46908.372	-0.004	6	RG	
23891	1209+228	CC Com	s	46908.376	+0.010	7	RG	
23892			s	46910.390	+0.007	6	RG	
23893	1205-128	W Crv	p	46862.580	+0.003	6	KL	
23894	2005+461	SW Cyg	p	46861.614	-0.066	9	KL	
23895	2104+455	VV Cyg	p	46907.506	-0.010	6	KL	
23896	2002+414	WW Cyg	p	46900.620	0.000	6	KL	
23897	1924+292	DX Cyg	p	46907.554	-0.063	6	KL	
23898	2035+352	GO Cyg	p	46768.333	+0.003	7	GM	
23899	2007+304	KR Cyg	s	46917.589	+0.027	5	RD	
23900	1941+326	V370 Cyg	p	46907.520	-0.011	5	KL	
23901	2025+586	V728 Cyg	p	46901.589	+0.004	6	KL	

Nr.	Design.	Star	Type	T _{obs}	O-C	n	Obs.	Remarks
23902	1930+325 V886 Cyg	V224	p	46907,641	+0,104	6	KL	
23903	2040+382 V1788 Cyg			46910,0	-1,6	5	KL	elem. BBSAG Bul. 68, 6
23904	1142+725 Z Dra		p	46889,280	+0,023	8	KL	
23905	1926+688 UZ Dra		p	46863,376	0,000	6	KL	
23906	1214+651 AR Dra		p	46889,467	-0,002	5	KL	
23907	1922+698 NSV11987		p	46863,649	-1,311	6	KL	elem. BBSAG Bul. 72, 4
23908	Dra		p	46917,605	-1,387	8	KL	
23909	0321-008 WX Eri		p	46795,390	-0,000	8	GM	
23910	0558+231 RW Gem		p	46877,391	-0,002	6	KL	
23911	0733+170 TX Gem		p	46913,349	+0,002	6	KL	
23912	0647+214 AF Gem		p	46854,398	-0,003	6	GM	
23913	0631+155 BD Gem		p	46831,400	-0,024	5	KL	
23914	1737+329 SZ Her		p	46900,506	-0,012	6	KL	
23915	1711+307 TU Her		p	46881,608	-0,002	8	KL	
23916	1615+090 CC Her		p	46890,500	+0,024	10	KL	
23917	1732+151 DP Her		p	46907,471	+0,019	6	KL	
23918	1606+458 DO Her		p	46907,549	+0,001	6	KL	
23919	1819+144 MT Her		p	46890,530	-0,003	10	KL	
23920	0903-080 RX Hya		p	46863,341	+0,015	9	KL	
23921	0927-092 SY Hya		p	46903,345	-0,013	6	KL	
23922	1017-229 VY Hya		p	46861,489	-0,043	10	KL	
23923	0923-219 XZ Hya		p	46902,363	+0,012	6	KL	
23924	0928-187 AS Hya		p	46889,336	+0,002	10	KL	elem. BBSAG Bul. 83, 5
23925			p	46890,398	+0,001	7	KL	
23926			p	46907,415	0,000	10	KL	
23927	2238+380 VX Lac		p	46770,278	-0,001	7	HP	
23928	2231+558 OO Lac		p	46891,633	+0,098	9	KL	
23929	0933+264 Y Leo		p	46881,436	-0,005	6	KL	
23930			p	46903,352	-0,008	6	KL	
23931			p	46903,355	-0,005	11	RG	
23932	1035+145 UV Leo		s	46903,423	+0,005	10	RD	
23933	1142+250 BL Leo		s	46877,548	-0,010	5	KL	
23934	0945+335 T LMI		p	46910,331	0,001	6	KL	
23935	0509-132 RR Lep		p	46795,685	+0,022	10	GM	
23936	0557-202 RS Lep		p	46820,360	+0,013	8	HP	
23937	1519-080 TY Lib		p	46914,370	+0,002	6	KL	
23938	0652+509 RV Lyn	N241	p	46877,449	+0,462	11	KL	
23939	0851+466 RY Lyn		p	46902,505	-0,035	5	KL	
23940	1913+269 AK Lyr		p	46875,575	-0,587	6	KL	
23941	1915+328 BV Lyr		p	46861,588	+0,015	6	KL	
23942	1831+377 EW Lyr		p	46881,630	+0,239	6	KL	
23943	1913+337 NV Lyr		p	46903,578	-0,028	5	KL	
23944	0632+088 RW Mon		p	46876,334	-0,004	5	KL	
23945	0746-103 AW Mon	N242	p	46863,27	-0,14	5	KL	
23946	0650+092 AY Mon		p	46831,549	0,000	6	KL	
23947	0635+036 V396 Mon		p	46877,370	+0,010	6	KL	
23948	1712-080 SZ Oph		p	46909,543	+0,036	9	KL	
23949	1755+046 V391 Oph		p	46902,631	+0,013	6	KL	
23950	1728+106 V449 Oph		p	46861,622	+0,005	6	KL	
23951	1840+087 V456 Oph		p	46917,618	+0,032	5	RD	
23952	1834+104 V636 Oph		p	46914,534	+0,013	7	KL	
23953	1719+106 V752 Oph		p	46914,515	+0,011	6	KL	
23954	1752+141 V913 Oph		p	46875,635	+0,010	6	KL	
23955	1613-052 V1016 Oph		p	46907,542	-0,004	7	KL	see BBSAG Bull. 83, 7
23956			s	46908,566	+0,002	6	KL	
23957			p	46909,590	+0,008	9	KL	
23958			s	46910,604	+0,004	5	KL	
23959			p	46914,461	-0,007	7	KL	
23960			s	46915,489	+0,003	6	KL	
23961			s	46917,526	+0,004	11	KL	
23962			p	46923,437	+0,010	7	KL	
23963			s	46923,623	-0,007	5	KL	
23964	0452+013 EI Ori		p	46821,258	-0,037	6	RG	
23965	0502+092 FK Ori		p	46876,282	-0,013	6	KL	
23966	0505-028 FL Ori		p	46819,3285	-0,007	8	HP	
23967	0612+155 V645 Ori		p	46876,298	+0,017	6	KL	

No.	Design.	Star	Type	T _{obs}	O-C	n Obs.	Remarks
23968	2226+177	UX Peg	p	46704.325	-.051	8	APs
23969	2220+160	BB Peg	s	46731.365	+.003	11	APs
23970	2136+264	BX Peg	s	46743.283	-.016	13	APs
23971	2146+278	CW Peg	p	46909.585	-.260	6	KL
23972	0320+464	RT Per	p	46770.276	-.066	9	HP
23973			p	46820.383	-.074	8	HP
23974			p	46843.309	-.082	5	GM
23975	0256+389	ST Per	p	46843.400	-.037	5	GM
23976	0405+464	XZ Per	p	46817.280	+.017	8	HP
23977	0306+507	AY Per	<u>neu</u> p	46866.284	-.061	6	KL
23978	0256+437	IU Per	p	46817.272	+.078	7	HP
23979	0156+529	KW Per	p	46819.432	+.053	8	HP
23980			p	46820.367	+.057	9	HP
23981			p	46861.337	+.052	9	KL
23982	2331+076	Y Psc	p	46742.352	+.139	16	APs
23983	0054+120	SX Psc	p	46770.278	-.026	9	HP
23984	0736-243	AY Pup	p	46884.247	+.067	6	KL
23985	0849-272	RZ Pyx	p	46884.281	+.220	7	KL
23986	1842-061	FG Sct	p	46909.550	-.039	6	KL
23987	1556+173	AO Ser	p	46917.430	+.013	8	MKo
23988	1554+224	AU Ser	s	46884.364	-.009	*	6 KL *elements accord-
23989			p	46910.449	-.013	*	7 MKo ing to GCVS 1974
23990	0400+279	RW Tau	p	46819.415	-.112	11	HP
23991			p	46844.335	-.113	9	GM
23992	0433+186	RZ Tau	p	46821.430	+.045	17	APs
23993	0548+281	SV Tau	p	46842.286	-.036	5	GM
23994	0431+151	TY Tau	s	46770.60	+.17	8	APs
23995			p	46773.335	+.211	10	APs
23996	0435+205	HU Tau	p	46862.302	+.031	9	RD
23997			p	46864.330	+.003	7	RD
23998	0128+291	V Tri	p	46816.290	+.021	8	HP
23999	0157+276	X Tri	p	46816.332	-.053	8	HP
24000			p	46817.303	-.054	8	HP
24001	0210+367	RV Tri	p	46819.377	-.038	8	HP
24002	1206+563	TY UMa	s	46908.347	+.003	6	RG *elements accord-
24003	1334+521	UX UMa	p	46877.367	-.002	6	KL ing to IBVS 1949
24004	0934+562	VV UMa	p	46901.395	+.158	8	RG
24005			p	46910.332	+.159	7	RG
24006			p	46914.460	+.163	7	MKo
24007	0906+547	XY UMa	p	46884.346	-.002	6	GM
24008			p	46906.371	-.010	11	GM
24009	1026+620	ZZ UMa	p	46900.555	-.005	6	KL
24010	1108+466	BM UMa	s	46907.342	+.007	5	KL *elements accord-
24011	1402-099	VV Vir	p	46877.458	-.003	*	5 KL ing to GCVS 1976
24012	1158+132	AG Vir	p	46892.505	+.046	13	APs *elements accord-
24013			p	46903.42	+.03	15	APs ing to BBSAG 31 ₆
24014	1402-181	AK Vir	p	46917.559	+.087	8	MKo
24015	1325+033	AW Vir	p	46903.440	+.018	12	APs
24016			p	46908.388	+.010	9	APs
24017			p	46909.457	+.017	10	APs
24018	1340+048	AZ Vir	p	46909.360	+.023	*	9 APs *elements accord-
24019	1324-158	BD Vir	p	46924.473	+.194	10	APs ing to GCVS 1976
24020	1345-003	BF Vir	p	46910.470	-.048	8	MKo
24021	1355-014	BH Vir	s	46909.388	+.004	18	APs
24022	1502+045	CG Vir	<u>neu</u> p	46904.45	-.22	14	APs
24023	2026+246	AW Vul	p	46728.211	-.018	13	APs
24024	2033+225	AY Vul	p	46909.576	+.056	6	KL
24025	1954+237	BO Vul	p	46913.559	-.086	6	KL
24026	2044+280	BU Vul	p	46917.541	+.013	8	MKo
24027	2023+262	CD Vul	p	46770.286	-.021	6	HP
24028	1933+264	FO Vul	<u>neu</u> p	46907.506	-.028	5	KL

The Totality Duration of RV Lyncis

is unknown according to the GCVS 1985. The writer's visual observation of the minimum on JD 2446877 has yielded

$$d/p = .003 \pm .003$$

K. Locher

The Totality Duration and Brightness of SY Hydrae

are still quoted unknown in the GCVS 1985. We should therefore like to remind that we had published these values already in 1973 (BBSAG Bulletin 8, p.5) as

$$d/p = .002 \pm .002 \quad m_{V \min I} = 14.0 \pm .2$$

K. Locher

The Period of AS Hydrae

is given as 15^{d99} by the GCVS 1985. During my visual survey in 20 winter nights 1986-7 this value turned out to be the 15-fold period, corresponding to elements

$$JD_{\min, \text{hel}} = 2446760.638 + 1.0636 E.$$

along with the further photometric parameters

$$D/p = .09 \pm .01$$

$$d/p = .004 \pm .004$$

$$| m_{V \max} - m_{V \min I} | = 1.8 \pm .2$$

Figure 79 plots all my observations against phase.

K. Locher

plot symbols in figure 79 :

JD 2446000	+	742	744	745	746	747	760	766	768	769
		Z	+	S	S	O	°	Z	¥	Y
770	798	831	884	888	889	890	902	903	904	907
H	Ø	X	N	x	*	§	\$	#	¢	8

X X \$ X
 X Z ZX S S
 ¥ # N N H ¥
 ¥ 0 0 0 0 O ° 8 ** ¢ ¢ N N N ¥ 0
 X S 8 * N N X
 ° Y
 §

east-----
 com-
 par-
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 tude
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X
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 8 X
 ° 8
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 8
 8
 8

.5 .6 .7 .8 .9 0 .1 .2 .3 .4 | phase

The Period of V 1016 Ophiuchi

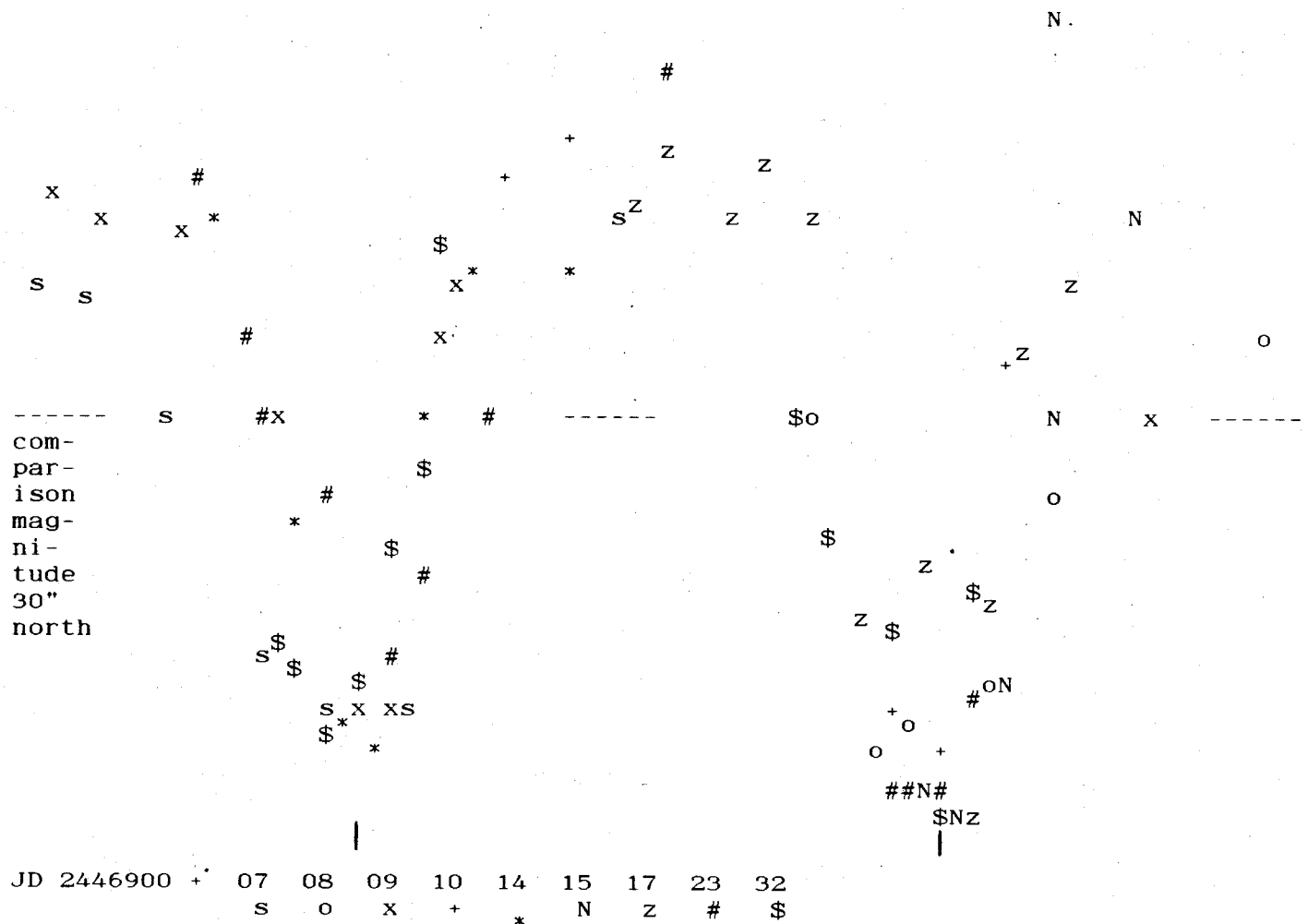
is roughly given as 0.51:day in the GCVS 1985, obviously derived from observations in consecutive nights, when the minimum advances by $\frac{1}{2}$ hour. The author's visual survey during 9 springtime nights 1987, however, reveals that there are 5 minima within $24\frac{1}{2}$ hours, and not 4. This results in the elements

$$JD_{hel \text{ Min.}} = 2446907.546 + .4072 E$$

The following figure plots all the observations against phase.

K. Locher

Fig.80



Visual Observations of VV Ceti

The EW variable VV Ceti was discovered by Döppner (MVS 592/3 (1961)) at Sonneberg, who has observed 48 minima from JD 27305.575 to 36602.287. Recently, a photoelectrically observed minimum (JD 46441.5482) was published by Faulkner (PASP 98, 690). The GCVS elements $2431328.483 + .522390 E$ are based on the observations by Döppner. Other observations are not known. The present author has observed the star from September 1986 to January 1987 visually. Figures 81 and 82 show a superposition of the observations assuming periods of 0.522390 (GCVS) and 0.50226 (smallest scatter of observations). As VV Ceti is difficult for visual observation and most of the minima have been observed early in the evening and thus are incomplete, there are doubts as to the significance of the period 0.50226. But, as no other recent observations are known, even this result may be helpful for future work.

A. Paschke

Fig. 81

VV Cet 46441.5482 0.522390

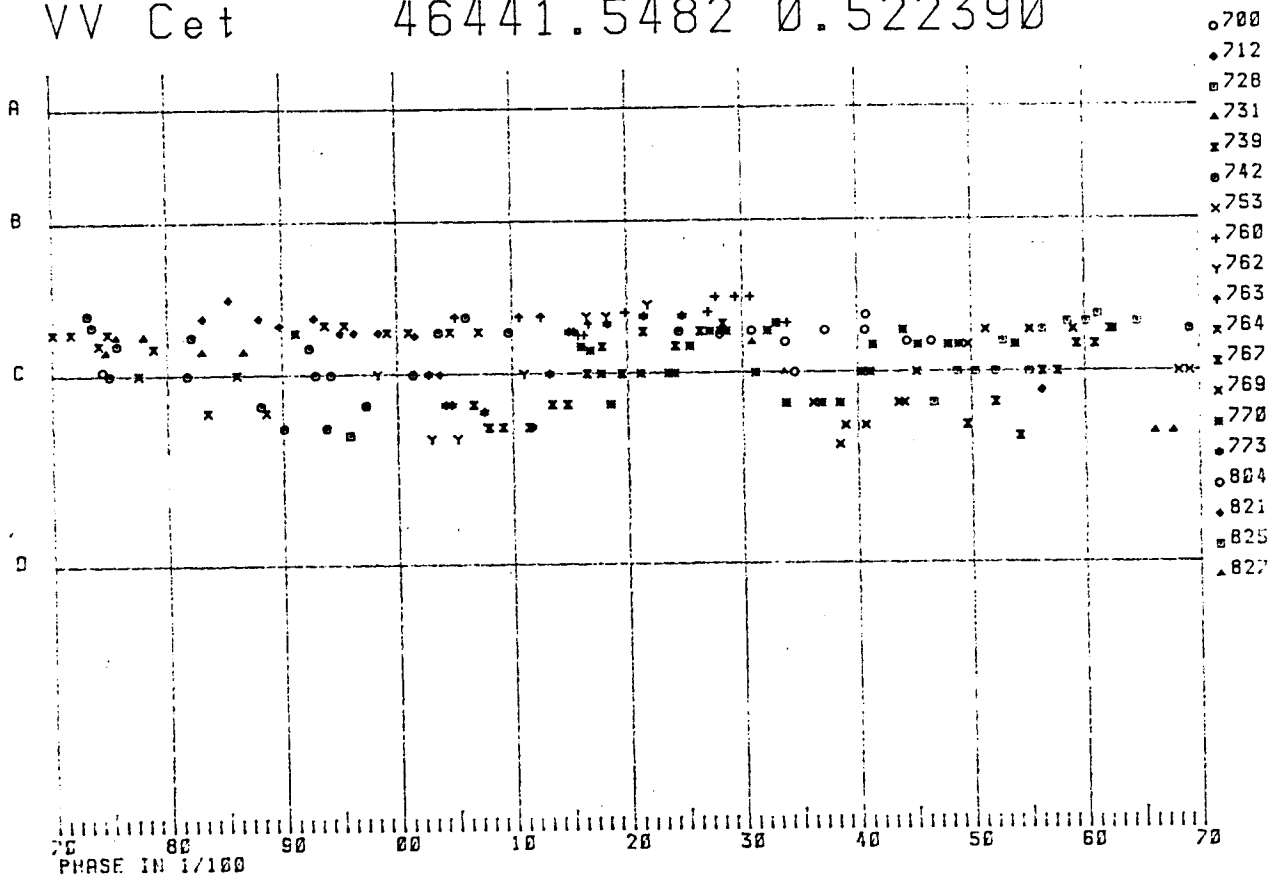


Fig. 82

VV Cet 46441.5482 0.50226

