

BBSAG

BULLETIN

95

1990 July 30

128. List of Minima of Eclipsing Binaries

The following table lists 2 photoelectric (**bold**), 17 CCD-measured and 265 visual heliocentric minima of eclipsing binaries obtained primarily from April to June of 1990 by the following observers:

FAc Francesco Acerbi, Codogno, Italy
RCr Robert E. Crumrine, Fairport, USA
RD Roger Diethelm, Rodersdorf, Switzerland
MKo Michael Kohl, Wald, Switzerland
KL Kurt Locher, Grüt, Switzerland
APs Anton Paschke, Rüti, Switzerland
HP Hermann Peter, Otelfingen, Switzerland
JVb Jacqueline Vandenbroere, Bruxelles, Belgium

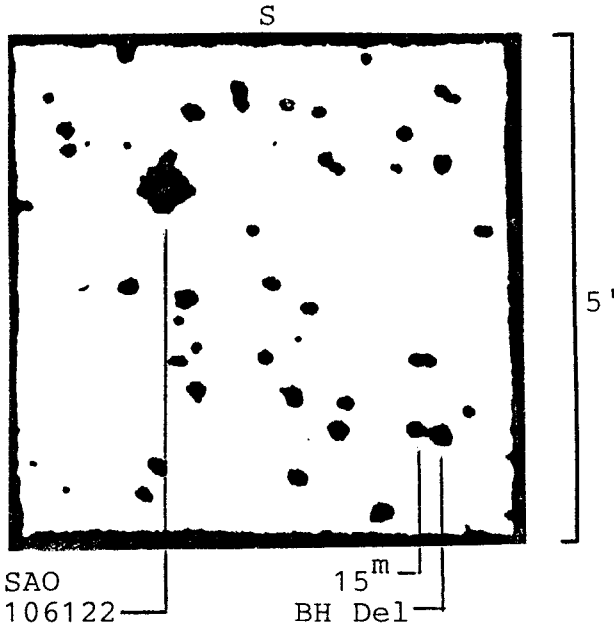
The O-C values generally refer to the linear elements of the GCVS 1985, with the remarked exceptions. For the reduction of the visual minima, the tracing paper method was employed, while the photoelectric observations were reduced with the Kwee-van Woerden algorithm.

Nr	Design.	Star	Type	O	O-C	n	Obs	Remarks
27618	2308+527	RT And	p	47834.320	-0.008	10	JVb	
27619			p	47849.421	-0.001	10	JVb	
27620			p	47856.344	0.004	10	JVb	
27621	0209+444	GZ And	p	48067.606	0.007	5	KL	
27622	2324+452	LO And	s	48068.511	0.004	12	HP	
27623	2243+007	DD Aqr	p	47826.400	0.000	10	APs	CCD, el. BBSAG B. 90, p.7
27624	1901+027	FK Aql	p	48071.437	-0.041	7	HP	
27625	1936+064	LT Aql	p	48067.464	0.039	6	KL	
27626	1847+106	V479 Aql	p	48041.427	-0.017	5	KL	
27627	2013+008	V589 Aql	p	48060.452	-0.046	4	KL	
27628	1929+106	V616 Aql	p	48041.534	-0.009	8	KL	elem. MVS 11, p. 120
27629	1958+085	V760 Aql	p	48039.456	-0.048	5	KL	
27630	1858-075	V803 Aql	s	48067.437	-0.006	5	KL	
27631	1908+120	V917 Aql	p	48068.535	0.051	9	KL	
27632	1943+073	V1157 Aql	p	48014.542		10	KL	period unknown
27633	0506+395	TT Aur	p	47887.603	-0.024	11	JVb	
27634			p	47895.608	-0.015	11	JVb	
27635	0522+411	ZZ Aur	p	47983.341	0.007	8	HP	
27636	0509+334	CL Aur	p	47974.379	0.081	6	KL	
27637	1402+302	TU Boo	p	48002.387	-0.019	5	HP	
27638			p	48011.455	-0.031	6	HP	
27639			s	48042.408	-0.047	6	KL	
27640	1458+353	TY Boo	p	47983.364	0.059	8	HP	
27641			p	47996.362	0.054	9	HP	
27642			p	48014.435	0.049	9	HP	
27643			s	48043.455	0.050	8	HP	
27644			s	48069.464	0.053	8	HP	
27645	1454+465	AC Boo	p	48013.4051	0.0868	8	RD	pe, B
27646	1137+805	AL Cam	p	47999.591	-0.006	9	RCr	
27647			p	48039.432	-0.015	7	HP	
27648			p	48043.408	-0.024	8	HP	
27649	0819+773	AY Cam	p	48044.394	-0.029	7	HP	
27650	0844+085	TY Cnc	p	47968.39	-0.17	62	APs	CCD
27651	0843+330	WX Cnc	p	48003.416	0.005	8	HP	
27652	0858+268	WY Cnc	p	48011.415	-0.004	7	HP	
27653	0737+064	RT CMI	p	47974.400	-0.383	16	APs	CCD
27654	0748+037	UZ CMI	p	47958.370	0.189	26	APs	CCD
27655	0751+037	XZ CMI	p	47996.351	0.009	8	HP	
27656	0705+063	AG CMI	p	47983.370	-0.031	9	HP	
27657	0737+040	AK CMI	p	47947.461	0.009	64	APs	CCD
27658	0244+694	FZ Cas	p	48012.374	0.003	19	FAC	
27659	0045+605	OR Cas	p	47992.347	-0.023	6	KL	
27660			s	48071.474	0.002	8	HP	
27661	1140-355	V752 Cen	s	48008.319	-0.004	6	KL	
27662	0057+816	U Cep	p	48024.443	0.053	5	KL	
27663	2038+754	VW Cep	s	48010.512	-0.028	21	FAC	
27664			p	48011.483	-0.031	22	FAC	
27665	2157+607	DK Cep	p	48002.560	0.017	5	KL	
27666	2306+609	DP Cep	p	48041.439	-0.029	5	KL	
27667	2017+766	EG Cep	p	47853.241	-0.010	6	JVb	
27668			p	47872.303	-0.010	6	JVb	
27669	2334+666	QZ Cep	p	47968.512	-0.040	12	JVb	
27670	1230+269	RW Com	s	47983.353	-0.007	7	HP	
27671			p	48013.363	-0.015	7	HP	
27672	1232+236	RZ Com	s	48001.426	0.014	8	HP	
27673			p	48010.398	0.015	7	HP	
27674			p	48014.446	0.002	7	HP	
27675	1247+189	SS Com	s	48001.439	0.022	12	HP	
27676			p	48002.462	0.013	9	HP	
27677			s	48013.419	0.031	7	RD	pe, B
27678			s	48013.436	0.047	9	HP	
27679			s	48039.424	0.030	9	HP	
27680	1209+228	CC Com	p	48011.463	-0.004	6	HP	
27681			s	48016.440	0.008	7	HP	
27682	1604+274	TW CrB	p	47996.385	0.018	7	HP	
27683			p	48013.453	0.009	8	HP	
27684			p	48016.408	0.019	7	HP	
27685			p	48069.401	0.014	7	HP	
27686	1205-128	W Crv	s	48001.396	-0.004	6	HP	
27687			p	48012.462	0.001	6	HP	

Nr	Design.	Star	Type	O	O-C	n	Obs	Remarks
27688	1121-164	V Cr1	p	48001.389	0.001	10	HP	
27689	2005+461	SW Cyg	p	48041.462	-0.086	9	HP	
27690	2021+430	UW Cyg	p	48041.510	0.040	9	HP	
27691	2104+455	VV Cyg	p	48068.462	-0.013	6	KL	
27692	2002+414	WW Cyg	p	48068.479	0.005	6	KL	
27693			p	48068.480	0.005	10	HP	
27694	2022+467	ZZ Cyg	p	48016.448	-0.011	6	HP	
27695			p	48058.554	-0.022	6	KL	
27696	2111+305	AE Cyg	p	48071.420	-0.006	9	HP	
27697	1939+466	BR Cyg	p	48010.403	0.006	6	KL	
27698	2056+349	CG Cyg	p	48041.486	0.027	9	HP	
27699	1952+379	CV Cyg	p	48069.448	-0.092	9	HP	
27700	2156+523	DO Cyg	p	48042.479	-0.007	6	HP	
27701	2007+304	KR Cyg	p	48012.453	-0.003	6	HP	
27702	2016+361	V382 Cyg	p	48069.420	0.013	7	HP	
27703	2113+372	V387 Cyg	p	48010.504	-0.001	7	HP	
27704			p	48069.441	0.001	6	HP	
27705	2014+386	V435 Cyg	p	48013.566	0.093	8	KL	
27706	1952+328	V456 Cyg	p	48014.507	0.023	8	HP	
27707			p	48039.461	0.023	8	HP	
27708	1952.328	V466 Cyg	p	48043.428	0.021	9	HP	
27709			p	48068.459	0.003	7	HP	
27710	1924+298	V687 Cyg	p	48008.479	-0.009	6	KL	
27711			s	48014.454	-0.009	7	HP	
27712			p	48061.415	0.003	8	HP	
27713	2011+404	V726 Cyg	p	48061.525	0.029	7	KL	
27714	2025+586	V728 Cyg	p	48061.445	-0.002	8	HP	
27715	2040+531	V749 Cyg	p	48014.450	-0.009	6	KL	
27716	1947+461	V995 Cyg	p	48013.529	0.008	8	JVb	
27717	1938+365	V1141 Cyg	p	48016.583	0.082	15	JVb	
27718	2027+138	YY Del	p	48061.477	0.003	8	HP	
27719	2033+129	AL Del	p	47840.290	0.060	13	APs	CCD, normal minimum
27720	2025+135	BH Del	p	48041.573	0.054	8	KL	
27721	2014+157	EX Del	p	47822.375	0.034	52	APs	CCD
27722	1142+725	Z Dra	p	47983.360	-0.053	6	HP	
27723			p	47983.363	-0.050	5	MKo	
27724			p	48002.366	-0.051	9	HP	
27725	1841+626	RR Dra	p	48042.402	0.040	8	HP	
27726			p	48042.404	0.042	6	KL	
27727	1822+588	RZ Dra	p	48041.408	0.024	10	HP	
27728	1533+640	TW Dra	p	48043.450	0.024	10	HP	
27729	1820+475	TZ Dra	p	48041.436	-0.009	10	HP	
27730	1214+651	AR Dra	p	48013.392	0.005	6	HP	
27731			p	48015.421	0.007	7	HP	
27732			p	48040.425	0.005	7	HP	
27733			p	48042.460	0.012	6	KL	
27734			p	48069.483	0.002	7	HP	
27735	1238+665	AX Dra	p	48012.399	-0.079	8	HP	
27736			p	48016.432	-0.024	10	HP	
27737			p	48041.446	-0.009	7	HP	
27738	1826+689	BE Dra	p	47980.498	0.083	18	JVb	
27739			p	47990.410	0.068	15	JVb	
27740			p	47991.471	0.085	15	JVb	
27741			p	48013.405	0.074	13	JVb	
27742			p	48014.462	0.085	11	JVb	
27743	1851+698	BF Dra	p	48044.385	0.204	8	HP	GCVS period prob. erron.
27744	0625+205	SX Gem	p	47954.330	-0.057	14	APs	CCD, normal minimum
27745	0647+214	AF Gem	p	48003.379	-0.049	6	HP	
27746	0749+272	GW Gem	p	48001.405	0.014	7	HP	
27747	1737+329	SZ Her	p	48002.489	-0.008	7	HP	
27748			p	48016.390	-0.014	7	HP	
27749			p	48061.386	-0.013	8	HP	
27750			p	48061.388	-0.012	5	KL	
27751	1711+307	TU Her	p	48069.507	-0.012	10	HP	
27752	1615+090	CC Her	p	48012.410	0.032	8	HP	
27753	1618+185	CT Her	p	48012.469	0.007	7	HP	
27754			p	48028.521	-0.018	6	KL	
27755	1845+227	DH Her	p	48043.445	-0.002	9	HP	
27756	1732+151	DP Her	p	48039.446	0.032	5	KL	

Nr	Design.	Star	Type	O	O-C	n	Obs	Remarks
27898	2044+280	BU Vul	p	48014.562	0.007	7	HP	
27899			p	48042.436	0.000	6	HP	
27900			p	48071.457	0.003	7	HP	
27901	2023+263	CD Vul	p	48071.457	0.002	8	HP	

BH Delphini: The True Amplitude and Identification



The GCVS 1985 states a photographic amplitude of 2.4^m for this EA/SD system. A recent visual survey of a minimum reveals that there is a 15th magnitude field star 13" west-south-west of the variable, as shown in the adjacent copy from the blue Palomar Sky Survey chart, and that the maximum visual light is about 1.5ⁿ brighter, the minimum at least 2^m fainter than that of this field star.

The visual amplitude, to be expected even less than the photographic for an SD type variable, is therefore much larger than catalogued.

K. Locher

The True Period of AP Canis Majoris

21 visual observations obtained in 12 nights from October 1989 to March 1990 show the star faint at JD 2447825.55, 2447918.55, 2447968.302 and 2447970.466. The minima are deep and must be primary. In accordance with the minima found in the literature, namely:

2426692.498 (Morgenroth, AN 250, 75),
 2426770.357 (Morgenroth, AN 250, 75) and
 2427460.32 (Piotrowski, AAc Suppl. 3, 153)

the most probable elements are: $JD_{\min, \text{hel}} = 2447105.34 + 2.162835 * E$.

J. Borovicka

CCD-survey of little observed eclipsing binaries

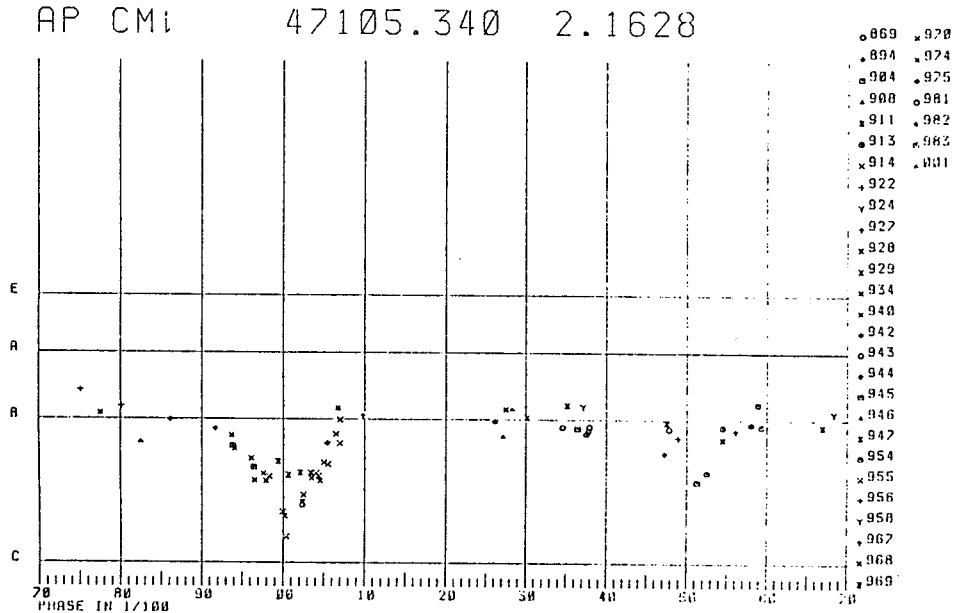
RW CMi: 260 images in 44 nights from 9/12/89 to 5/5/90 have been secured. The star did show no significant changes in brightness. Only the expositions taken at JD 2448001.317 and 2448001.339 (altogether 8 images) show the star marginally fainter.

SX CMi: This star was surveyed in 16 nights. On the images taken at JD 2448010.321 it is slightly fainter than usual.

TT CMi: The variable was observed in 17 nights. 50 CCD-images have been made. It was faint at JD 2447945.404 and 2447967.399. Since the GCVS period is given to 5 digits only, the small O-C values are probably a coincidence.

TX CMi: 24 images in 9 nights were obtained. Faintest at JD 2447992.349.

AP CMi: 186 CCD expositions taken in 36 nights (consecutive images averaged) result in the light curve presented in the following diagram. At phase 0.5 a secondary minimum can be distinguished. The elements suggested by J. Borovicka in the note above are confirmed.



RR Crv: 32 images in 10 nights were secured. They show the variable very faint at JD 2448039.455. As the GCVS 1985 does not state a value for the duration of totality D, there may be an uncertainty of some hour in the time of mid-eclipse.

NSV 3690 = KZP 1106 = SVS 906: In the NSV catalogue, this star is registered with an amplitude of 10.7 - 12.1 mag. and type S. I have made 146 images in 43 nights and found no significant changes in brightness. The star is obviously red.

A. Paschke

NSV 3570 = KZP 1032 = P 0461 = 132.1929

Discovered by C. Hoffmeister, this variable was suspected to be of eclipsing nature from the very beginning of the systematic photographic research on variable stars initiated in Germany by Prof. Guthnick.

The writer has observed NSV 3570 visually in 36 nights from JD 2447170 to 2447803 and with the CCD camera in 44 nights from JD 2447870 to 2448015, totaling 178 images. A periodicity of about 3 days was obvious without any calculation. The preliminary elements are:

$$2447170.516 + 2.9416 * E.$$

In the attached diagram, each point represents two to four images. There is a substantial scatter in these points. If the increase of the brightness lasting from phase 0 to 0.4 has any significance, the suspected EA type of variation is contradicted.

A. Paschke

NSV3570 47170.516 2.9416

