

BBSAG Bulletin 114

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
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BULLETIN

114

1997 April 15

147. LIST OF MINIMA OF ECLIPSING BINARIES

The following table lists 58 electronically recorded (CCD; underlined) and 346 visual timings of minima of eclipsing binaries obtained primarily between November 1996 and March 1997 by the following observers:

FAC	Francesco Acerbi, Codogno, Italy
EBI	Ernst Blättler, Wald, Switzerland
DDa	Davide Dalmazio, Formia, Italy
AD	Antonin Dedoch, Praha, Czech Republic
RD	Roger Diethelm, R. Szafraniec Observatory, Metzerlen, Switzerland
BK	Bruce Krobusek, Farmington, USA
MKo	Michael Kohl, Laupen, Switzerland
KL	Kurt Locher, Gröf, Switzerland
MMa	Massimiliano Martignoni, Busto Arsizio, Italy
CPa	Carlo Pampaloni, Firenze, Italy
APs	Anton Paschke, Rütli, Switzerland
HP	Hermann Peter, Otelfingen, Switzerland

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

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
33718	2311+458	TT And	p	50391.309	0.004	-0.064	9	HP	
33719	0042+284	WX And	p	50425.569	0.006	+0.044	8	KL	
33720	0058+378	WZ And	p	50390.290	0.006	+0.013	7	HP	
33721			p	50422.286	0.005	+0.009	8	HP	
33722			p	50486.292	0.004	+0.014	8	HP	
33723	0153+418	XZ And	p	50433.316	0.005	+0.062	8	HP	
33724			p	50509.323	0.003	+0.061	8	MKo	
33725			p	50509.323	0.003	+0.062	8	KL	
33726			p	50509.327	0.005	+0.065	9	HP	
33727	2309+366	AB And	p	50378.279	0.006	-0.008	10	DDa	
33728			s	50400.336	0.0100	-0.021	11	DDa	
33729			s	50415.274	0.007	-0.019	11	DDa	
33730			s	50420.259	0.005	-0.012	12	DDa	
33731	2334+483	AD And	p	<u>50368.316</u>	0.007	<u>-0.042</u>	51	APs	CCD; norm. minimum
33732	2347+455	AP And	p	<u>50465.3030</u>	0.0002	<u>+0.0009</u>	33	EBI	CCD; elem. GEOS Circ. EB 22
33733	2308+506	BD And	p	<u>50391.415</u>	0.005	<u>+0.018</u>	13	APs	CCD
33734	2308+516	BL And	p	50502.282	0.005	-0.009	4	HP	
33735	0205+405	BX And	p	<u>50445.483</u>	0.003	<u>-0.026</u>	286	APs	CCD
33736	0108+466	CO And	p	<u>50436.2601</u>	0.0007	<u>+0.0061</u>	24	EBI	CCD
33737	0209+453	CP And	p	50397.342	0.009	+0.245	5	KL	
33738	0008+418	DO And	p	<u>50390.304</u>	0.002	<u>-0.020</u>	15	RD	CCD; elem. MVS 11, 106
33739	0139+445	EP And	p	<u>50463.300</u>	0.002	<u>+0.044</u>	14	RD	CCD
33740			p	<u>50482.300</u>	0.009	<u>+0.051</u>	5	KL	
33741	2337+474	EX And	p	50425.364	0.003	-0.007	5	KL	
33742	2351+453	GK And	p	<u>50285.463</u>	0.010	<u>-0.016</u>	30	APs	CCD; elem. BAV Rb. 43. 108
33743			p	<u>50462.281</u>	0.003	<u>-0.018</u>	10	RD	CCD
33744			p	<u>50466.3012</u>	0.0013	<u>-0.0171</u>	37	EBI	CCD
33745	0209+444	GZ And	s	50390.467	0.004	+0.003	5	KL	
33746	2324+452	LO And	p	50390.325	0.005	+0.046	8	HP	elem. GEOS EB No. 11
33747			s	<u>50464.3212</u>	0.0009	<u>+0.0483</u>	14	RD	CCD
33748	2233-009	CX Aqr	p	50423.261	0.004	-0.003	6	KL	
33749	2319-162	CZ Aqr	p	50425.333	0.004	-0.013	8	KL	
33750	2243+007	DD Aqr	p	50390.325	0.005	+0.011	7	HP	elem. BBSAG Bull. 90, 7
33751	1932+057	V417 Aql	s	<u>50312.488</u>	0.005	<u>0.000</u>	31	APs	CCD; elem. IBVS No. 4358
33752	1847+106	V479 Aql	p	50250.469	0.002	-0.008	6	MKo	

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33753	1948+163	V602 Aql	p	50390.336	0.007	+0.171	12	HP	
33754			p	50396.366	0.006	+0.177	10	HP	
33755	1953+072	V719 Aql	p	<u>50343.366</u>	<u>0.015</u>	<u>-2.096</u>	39	APs	CCD
33756	1956+116	V1168 Aql	p	50391.369	0.006	-0.007	6	HP	
33757	0514+382	RY Aur	p	50488.438	0.006	+0.024	11	HP	
33758			p	50518.413	0.005	+0.021	11	HP	
33759	0629+324	WW Aur	p	50479.271	0.006	-0.002	11	CPa	
33760	0542+411	ZZ Aur	p	50433.305	0.004	+0.018	8	HP	
33761			p	50487.412	0.004	+0.017	6	HP	
33762	0509+334	CL Aur	p	50423.330	0.004	+0.123	5	KL	
33763			p	50464.375	0.002	+0.104	8	MKo	
33764			p	50520.355	0.005	+0.087	13	HP	
33765	0539+321	FO Aur	p	<u>50489.365</u>	<u>0.005</u>	<u>-0.023</u>	16	RD	CCD
33766	0621+386	GX Aur	p	<u>50509.3331</u>	<u>0.0009</u>	<u>-0.0085</u>	15	RD	CCDV; elem. BAV Mitt. 69
33767	0615+497	HL Aur	p	50489.288	0.005	+0.014	7	HP	elem. IBVS No. 4235
33768	0507+357	HP Aur	p	50489.378	0.004	+0.040	9	HP	
33769			p	50509.298	0.005	+0.041	7	HP	
33770	0458+397	HW Aur	s	<u>50488.3178</u>	<u>0.0005</u>	<u>+0.2302</u>	16	RD	CCD
33771	0602+483	KO Aur	s	50487.331	0.005	+0.026	7	HP	elem. IBVS No. 3410
33772	0624+304	KU Aur	p	50396.690	0.004	+0.038	5	KL	
33773			p	50519.403	0.005	+0.030	9	HP	
33774	1402+302	TU Boo	p	50465.617	0.005	-0.071	5	KL	
33775	1345+175	AQ Boo	p	<u>50518.517</u>	<u>0.003</u>	<u>+0.034</u>	15	RD	CCDV; e.PSP 108,1105; n.p.11
33776	07.34+761	Y Cam	p	50482.390	0.003	+0.167	8	MKo	
33777			p	50482.393	0.007	+0.170	7	KL	
33778	1137+805	AL Cam	p	50519.417	0.003	-0.028	12	MKo	
33779	0447+548	AO Cam	s	50415.281	0.018	-0.006	16	DDa	elem. PASP 97, 648
33780			s	50421.220	0.011	-0.005	9	DDa	
33781			p	50434.246	0.012	-0.011	11	DDa	
33782	0447+548	AQ Cam	p	50425.412	0.009	+0.020	6	KL	
33783	0837+200	RY Cnc	p	50396.621	0.006	+0.029	5	KL	
33784			p	<u>50487.3420</u>	<u>0.0007</u>	<u>+0.0358</u>	15	RD	CCD
33785	0849+092	TU Cnc	p	50487.387	0.006	-0.068	10	HP	
33786			p	50487.398	0.006	-0.058	7	KL	
33787	0837+191	TX Cnc	p	<u>50515.5522</u>	<u>0.0022</u>	<u>+0.0160</u>	10	BK	CCD

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33788	0857+191	VY Cnc	p	<u>50515.562</u>	0.005	<u>-0.154</u>	9	BK	CCD
33789	0906+306	WW Cnc	p	50488.390	0.004	-0.388	7	HP	
33790			p	50517.406	0.003	-0.388	10	MKo	
33791	0843+330	WX Cnc	p	50489.352	0.005	+0.025	8	HP	
33792	0843+105	AD Cnc	p	<u>50508.5558</u>	0.0028	<u>-0.0088</u>	12	BK	CCD
33793	0837+234	EF Cnc	p	<u>50508.653:</u>	0.005	<u>+0.090</u>	10	BK	CCD
33794	1354+289	YZ CVn	p	50519.586	0.006	-0.003	21	AD	
33795	0717-163	R CMa	p	50481.414	0.010	+0.041	11	CPa	
33796	0615-215	EG CMa	p	50509.417	0.005	-0.049	8	KL	
33797	0751+037	XZ CMi	p	50486.384	0.005	+0.003	8	HP	
33798			p	50519.374	0.004	+0.001	7	HP	
33799	0737+040	AK CMi	p	50467.387	0.005	-0.007	5	KL	
33800			p	50488.326	0.004	-0.006	7	HP	
33801			p	50502.472	0.002	-0.007	10	MKo	
33802			p	50514.347	0.005	-0.016	7	HP	
33803	0706+017	AN CMi	p	50425.628	0.008	-0.524	6	KL	
33804	2021-131	TY Cap	p	50336.391	0.002	+0.026	8	MKo	
33805	0232+710	AB Cas	p	50396.348	0.005	+0.054	11	HP	
33806			p	50422.318	0.006	+0.054	9	HP	
33807			p	50482.456	0.002	+0.050	9	MKo	
33808			p	50489.297	0.004	+0.056	7	HP	
33809			p	50519.362	0.003	+0.050	6	KL	
33810			p	50519.366	0.002	+0.054	7	MKo	
33811	0123+698	AE Cas	p	50488.309	0.007	+0.072	6	KL	
33812	0118+589	BS Cas	s	<u>50397.2635</u>	0.0008	<u>-0.1119</u>	41	EBI	CCD
33813	0028+714	CV Cas	p	50391.348	0.005	+0.455	7	KL	
33814	0042+628	CW Cas	p	50422.316	0.005	+0.004	8	HP	elem. JAAVSO 21, 34
33815			p	50436.339	0.005	-0.003	7	HP	
33816			p	50487.359	0.005	-0.001	7	HP	
33817			p	50502.332	0.004	-0.014	7	HP	
33818			p	50517.327	0.004	-0.006	6	HP	
33819	2350+572	EP Cas	p	50489.356	0.005	-0.029	8	HP	
33820	2304+538	IR Cas	s	50343.418	0.005	+0.029	8	MKo	
33821			p	50436.322	0.005	+0.020	8	HP	
33822			p	50453.333	0.003	+0.014	6	KL	
33823	2326+602	IS Cas	p	50423.288	0.006	+0.046	6	HP	

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33824	2347+528	IV Cas	p	<u>50343.562</u>	0.005	<u>-0.013</u>	30	APs	CCD
33825	0048+585	KL Cas	p	50444.510	0.006	-0.003	5	KL	
33826	0101+538	KT Cas	p	<u>50369.3284</u>	0.0014	<u>-0.1101</u>	27	RD	CCD; norm. minimum
33827	0051+541	MM Cas	p	<u>50481.3392</u>	0.0020	<u>+0.0128</u>	16	RD	CCD;e.JAAVSO 24,92;n. p.11
33828	0044+607	OQ Cas	p	<u>50463.304</u>	0.004	<u>-0.010</u>	14	RD	CCD
33829	0045+605	OR Cas	p	50390.351	0.006	-0.013	7	HP	
33830			p	50486.270	0.005	-0.014	7	HP	
33831			p	50538.595	0.003	-0.009	6	KL	
33832	2332+556	V360 Cas	p	<u>50465.348</u>	0.004	<u>-0.094</u>	14	RD	CCD
33833	0037+499	V523 Cas	s	50250.487	0.004	+0.025	7	MKo	
33834			s	50251.427	0.003	+0.030	5	MKo	
33835			p	50343.388	0.002	+0.034	5	MKo	
33836			p	50423.308	0.006	+0.031	5	HP	
33837			p	50436.395	0.004	+0.032	5	KL	
33838			s	50486.289	0.005	+0.033	6	HP	
33839	0230+631	V541 Cas	p	50423.298	0.005	+0.014	7	HP	elem. Chin. AA 11, 237
33840			p	50514.292	0.005	+0.023	8	HP	
33841	0203+652	V558 Cas	p	49958.524	0.0010	+0.063	13	FAc	elem. IBVS No. 4320
33842	0057+816	U Cep	p	50410.319	0.003	+0.083	6	KL	
33843	2038+754	VW Cep	p	50316.405	0.021	+0.004	15	DDa	elem. IBVS No. 4117
33844			s	50322.377	0.005	-0.008	13	DDa	
33845			p	50330.322	0.016	+0.006	16	DDa	
33846			p	50333.379	0.004	+0.001	13	DDa	
33847			p	50343.399	0.006	+0.002	17	DDa	
33848			p	50357.312	0.007	0.000	16	DDa	
33849			p	50377.349	0.007	-0.001	14	DDa	
33850			p	50379.290	0.015	-0.008	16	DDa	
33851			s	50392.234	0.026	-0.006	13	DDa	
33852			p	50394.323	0.008	-0.004	16	DDa	
33853			s	50400.309	0.006	-0.002	13	DDa	
33854			s	50402.256	0.004	-0.003	11	DDa	
33855			s	50414.220	0.009	-0.006	10	DDa	
33856			p	50423.270	0.016	-0.001	23	DDa	
33857			s	50434.260	0.004	-0.004	13	DDa	
33858	2149+712	VZ Cep	p	<u>50380.395</u>	0.003	<u>-0.002</u>	39	APs	CCD
33859	2320+650	CM Cep	p	50392.312	0.004	-0.019	6	KL	
33860	2157+607	DK Cep	p	50396.364	0.005	+0.041	7	HP	
33861	2127+649	GI Cep	p	50314.408	0.003	-0.012	8	MKo	
33862			p	50396.382	0.006	-0.016	5	HP	
33863			p	50422.323	0.006	-0.016	6	HP	
33864	0140+798	GW Cep	s	50423.257	0.004	-0.005	7	HP	elem. IBVS No. 4293

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33865	2109+575	IO Cep	p	50466.342	0.004	-0.016	5	KL	
33866	0220+809	V358 Cep	p	50465.299	0.005	+0.015	8	KL	elem. BBSAG Bull. 96, 10
33867	0146-211	TW Cet	p	50422.354	0.003	-0.013	6	KL	
33868	0147-198	VY Cet	s	50444.233	0.005	-0.011	6	KL	
33869	0156-231	AA Cet	p	50423.244	0.007	-0.011	5	KL	
33870	1230+269	RW Com	s	50518.427	0.004	-0.019	8	HP	
33871	1232+236	RZ Com	p	50517.382	0.005	+0.023	7	HP	
33872	1209+228	CC Com	p	50488.445	0.005	-0.005	7	HP	
33873			p	50509.406	0.005	-0.009	6	HP	
33874	1121-164	V Crf	p	50517.478	0.003	-0.006	11	MKo	
33875	1205-128	W Crv	p	50485.706	0.002	+0.007	6	KL	
33876	1227-233	Z Crv	p	50509.496	0.008	-0.005	5	KL	
33877	2051+386	WZ Cyg	p	50390.306	0.005	+0.046	9	HP	
33878	2022+467	ZZ Cyg	p	50396.382	0.006	-0.019	7	HP	
33879			p	50507.636	0.004	-0.029	5	KL	
33880	2147+409	BO Cyg	p	50391.245	0.009	-0.009	5	KL	elem. Per. Zv. 23, 266
33881	1939+466	BR Cyg	p	50314.397	0.002	-0.003	8	MKo	
33882			p	50466.298	0.008	-0.015	4	KL	
33883	1941+326	V370 Cyg	p	50517.669	0.002	-0.012	7	KL	
33884	2113+372	V387 Cyg	p	50422.352	0.005	+0.003	7	HP	
33885	2025+586	V728 Cyg	p	50422.358	0.004	-0.017	8	HP	
33886	2014+478	V787 Cyg	p	50436.311	0.005	-0.003	7	HP	
33887	1952+362	V822 Cyg	p	50539.618	0.009	-0.096	6	KL	
33888	1936+303	V922 Cyg	p	<u>50335.339</u>	<u>0.004</u>	<u>-0.067</u>	29	RD	CCD; norm. minimum
33889	2123+388	SVS2365 Cyg	p	50390.308	0.005	-0.011	5	KL	elem. Per. Zv. 23, 330
33890	2052+082	ET Del	s	<u>50390.303</u>	<u>0.003</u>	<u>-0.015</u>	15	RD	CCD
33891	2014+157	EX Del	s	50312.401	0.012	-0.075	19	MMA	elem. IBVS No. 2343
33892			s	50313.396	0.009	-0.073	18	MMa	
33893			s	50318.357	0.008	-0.077	11	MMa	
33894			p	50318.512	0.007	-0.088	17	MMa	
33895			s	50319.342	0.001	-0.085	12	MMa	
33896			p	50319.503	0.007	-0.090	17	MMa	
33897			p	<u>50397.292</u>	<u>0.005</u>	<u>-0.083</u>	18	APs	CCD
33898	2051+044	FZ Del	p	50396.324	0.005	-0.015	7	HP	

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33899	2012+151	GG Del	p	<u>50391.2842</u>	0.0012	-0.0131	8	RD	CCD; n.m.; el. IBVS No. 3406
33900	1142+725	Z Dra	p	50482.390	0.002	-0.100	7	KL	
33901			p	50482.391	0.003	-0.099	8	MKo	
33902			p	50516.333	0.005	-0.093	7	HP	
33903			p	50520.400	0.004	-0.099	8	HP	
33904	1841+626	RR Dra	p	50392.412	0.004	+0.053	6	KL	
33905	1214+651	AR Dra	p	50517.367	0.004	+0.002	7	HP	
33906	1633+572	CM Dra	s	50517.594	0.005	+0.006	20	AD	
33907	1922+698	DW Dra	p	50390.680	0.005	+0.021	10	KL	elem. BBSAG Bull. 84, 6
33908	0419-061	TZ Eri	p	50425.449	0.008	+0.142	9	KL	
33909	0558+231	RW Gem	p	50519.411	0.005	-0.029	13	MKo	
33910			p	50519.441	0.005	+0.001	6	KL	
33911			p	50519.441	0.004	+0.001	13	HP	
33912	0647+214	AF Gem	p	50464.273	0.007	-0.048	5	KL	
33913	0706+198	AN Gem	p	<u>50514.328:</u>	0.005	+0.391	12	RD	CCDV
33914	0628+197	AY Gem	p	50464.330	0.002	-0.029	7	MKo	
33915			p	50519.305	0.005	-0.020	7	HP	
33916	0631+155	BD Gem	p	50425.389	0.006	-0.018	6	KL	
33917			p	50488.437	0.003	-0.023	11	HP	
33918			p	50509.458	0.002	-0.020	8	MKo	
33919			p	50514.309	0.006	-0.018	7	HP	
33920	0622+180	BO Gem	p	50421.484	0.006	+0.384	7	KL	
33921	0655+132	EG Gem	p	50519.312	0.005	+0.216	7	HP	
33922	0644+169	FG Gem	p	50489.339	0.005	-0.013	7	HP	
33923	0640+159	KQ Gem	p	<u>50488.2838</u>	0.0008	-0.0484	16	RD	CCD; see note page 11
33924	1737+329	SZ Her	p	50251.437	0.003	-0.012	5	MKo	
33925			p	50314.419	0.002	-0.024	7	MKo	
33926	1615+090	CC Her	p	50507.695	0.004	+0.083	6	KL	
33927	1618+185	CT Her	p	50502.668	0.004	0.000	6	KL	
33928	1806+458	DQ Her	p	50539.491	0.001	+0.002	9	KL	
33929	1658+320	IK Her	p	<u>50525.6357</u>	0.0008	+0.1653	15	RD	CCD; see note page 11
33930	1849+240	IX Her	p	<u>50515.668:</u>	0.005	+0.504	13	RD	CCDV
33931	1819+144	MT Her	p	50396.266	0.004	+0.019	6	HP	
33932	1749+500	MX Her	p	50391.317	0.005	-0.370	11	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
33933	1727+228	V490 Her	p	<u>50525.66:</u>	0.015	+0.250	15	RD	CCD
33934	0903-080	RX Hya	p	50509.426	0.004	+0.035	10	MKo	
33935			p	50509.426	0.006	+0.035	10	HP	
33936	0912+030	AL Hya	p	50488.590	0.009	+0.355	8	KL	
33937	0928-187	AS Hya	p	50390.676	0.003	-0.031	6	KL	elem. BBSAG Bull. 83, 5
33938	0932+055	AV Hya	p	50514.436	0.005	+0.003	7	HP	elem. BAV Rdb. 43, 108
33939	0851+038	CU Hya	p	<u>50486.4195</u>	0.0005	-0.1728	16	RD	CCD
33940	2238+380	VX Lac	p	50391.348	0.004	+0.023	6	HP	
33941	2216+542	AW Lac	p	50433.338	0.004	+0.126	9	HP	
33942	2226+535	DG Lac	p	50396.296	0.005	-0.123	6	HP	
33943			p	50517.617	0.008	-0.162	5	KL	
33944	0933+264	Y Leo	p	50464.406	0.004	-0.001	5	KL	
33945			p	50518.372	0.005	+0.010	9	HP	
33946	0945+132	UU Leo	p	50517.368	0.005	+0.062	10	HP	
33947			p	<u>50517.3810</u>	0.0010	+0.0748	17	RD	CCDV
33948			p	50517.382	0.002	+0.076	12	MKo	
33949	0959+172	XZ Leo	p	50514.350	0.005	+0.021	8	HP	
33950	0507-149	Z Lep	p	50486.316	0.009	+0.044	8	KL	elem. JAAVSO 21, 111
33951	0509-132	RR Lep	p	50464.388	0.003	-0.011	12	MKo	
33952	0557-202	RS Lep	p	50464.345	0.006	-0.004	6	KL	
33953	0652+509	RV Lyn	p	50509.622	0.008	+0.615	8	KL	
33954	0851+466	RY Lyn	p	50514.379	0.006	-0.025	8	HP	
33955	0912+429	UU Lyn	p	50514.338	0.005	-0.003	7	HP	
33956	0753+408	BG Lyn	p	50518.348	0.005	+0.026	9	HP	elem. AJ 87, 314
33957	1925+415	TT Lyr	p	50508.543	0.005	+0.018	7	KL	
33958	1919+378	UZ Lyr	p	50343.430	0.003	-0.009	9	MKo	
33959			p	50530.670	0.008	-0.005	4	KL	
33960	1831+377	EW Lyr	p	50391.286	0.006	+0.245	5	KL	
33961			p	50391.290	0.006	+0.249	10	HP	
33962	0632+088	RW Mon	p	50444.525	0.008	-0.021	7	KL	
33963			p	50488.356	0.005	-0.030	7	HP	
33964			p	50509.328	0.002	-0.025	8	MKo	
33965			p	50509.331	0.005	-0.022	9	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
33966	0625+052	TV Mon	p	<u>50524.3490</u>	0.0014	+0.0028	13	RD	CCD
33967	0658-086	BB Mon	p	50502.337	0.005	+0.003	10	HP	
33968	0757-033	BO Mon	p	50530.308	0.005	-0.081	8	KL	
33969	0700+003	HM Mon	p	<u>50489.3359</u>	0.0006	-0.0019	16	RD	CCD
33970	0626+047	NSV2980 Mon	p	<u>50517.3420</u>	0.0004	+0.0444	17	RD	CCDV; elem. IBVS No. 4246
33971	1728+106	V449 Oph	p	50538.659	0.004	+0.027	5	KL	
33972	1756+135	V508 Oph	p	50502.685	0.003	+0.010	8	KL	
33973	1805+024	V511 Oph	p	<u>50287.427</u>	0.005	-0.024	32	APs	CCD
33974	1752+141	V913 Oph	p	50518.664	0.005	+0.110	5	KL	
33975	0620+139	CQ Ori	p	50517.409	0.004	+0.015	8	MKo	
33976	0608+163	EG Ori	p	<u>50481.3826</u>	0.0016	-0.0769	24	RD	CCD; normal minimum
33977	0454-036	EQ Ori	p	50453.286	0.003	-0.018	6	KL	
33978	0452+013	ET Ori	p	50464.339	0.005	+0.010	5	MKo	
33979	0532+029	FF Ori	p	50486.382	0.005	+0.018	9	HP	
33980	0505-028	FL Ori	p	50487.402	0.005	+0.020	9	HP	
33981	0602+125	V343 Ori	s	<u>50524.373</u>	0.008	+0.101	13	RD	CCD
33982	0608+185	V392 Ori	p	<u>50483.5956</u>	0.0008	+0.0012	32	BK	CCD
33983	2327+132	TY Peg	p	50433.318	0.005	-0.152	10	HP	
33984	2226+177	UX Peg	p	50391.339	0.004	-0.009	7	HP	
33985	2256+146	ZZ Peg	p	<u>50412.3025</u>	0.0025	+0.138	24	EBI	CCD
33986			s	<u>50425.337</u>	0.010	+0.159	22	APs	CCD
33987	2220+160	BB Peg	p	50390.315	0.005	+0.009	7	HP	
33988	2250+153	BG Peg	p	50423.283	0.006	-0.799	8	HP	
33989	0236+419	Z Per	p	50390.300	0.006	-0.107	6	HP	
33990			p	50396.398	0.005	-0.122	10	HP	
33991	0320+463	RT Per	p	50396.386	0.006	+0.044	6	HP	
33992			p	50436.308	0.005	+0.044	7	HP	
33993			p	50509.350	0.002	+0.038	10	MKo	
33994			p	50509.357	0.005	+0.045	7	HP	
33995			p	50520.392	0.004	+0.038	9	HP	
33996	0256+389	ST Per	p	50519.352	0.009	+0.107	18	AD	
33997			p	50519.357	0.002	+0.112	9	MKo	
33998			p	50519.361	0.005	+0.116	12	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
33999	0335+425	WY Per	p	50487.363	0.006	-0.011	7	HP	
34000	0405+464	XZ Per	p	50433.357	0.005	-0.048	8	HP	
34001			p	50486.342	0.006	-0.038	7	HP	
34002			p	50509.371	0.003	-0.042	12	MKo	
34003			p	50509.378	0.004	-0.035	8	HP	
34004			p	50516.282	0.003	-0.041	5	KL	
34005			p	50517.430	0.002	-0.044	13	MKo	
34006	0150+545	BY Per	p	<u>50396.3552</u>	<u>0.0008</u>	<u>+0.0165</u>	15	RD	CCD
34007	0220+577	DK Per	p	50502.282	0.003	-0.008	6	KL	
34008	0356+480	IQ Per	p	50478.284	0.012	+0.007	6	CPa	
34009	0256+437	IU Per	p	50509.351	0.006	+0.016	8	HP	
34010			p	50509.351	0.003	+0.017	7	MKo	
34011	0156+529	KW Per	p	50412.241	0.003	+0.014	6	KL	
34012			p	50464.382	0.003	+0.005	10	MKo	
34013			p	50519.331	0.004	+0.009	7	HP	
34014			p	50519.332	0.002	+0.011	6	MKo	
34015	0253+376	LS Per	p	50422.324	0.006	-0.347	7	HP	
34016	2331+076	Y Psc	p	50391.373	0.005	-0.031	12	HP	
34017			p	50410.227	0.003	-0.006	6	KL	
34018	0054+120	SX Psc	p	50422.318	0.006	+0.005	7	HP	
34019	0811-238	XZ Pup	p	50482.349	0.007	+0.065	5	KL	
34020			p	50517.421	0.003	+0.060	13	MKo	
34021	1922+163	CU Sge	p	50390.302	0.004	-0.001	9	HP	
34022	1846-102	RS Sct	p	50314.360	0.004	+0.012	5	MKo	
34023	1556+173	AO Ser	p	50336.332	0.005	+0.012	5	MKo	
34024			p	50530.670	0.003	+0.014	5	KL	
34025	1554+224	AU Ser	p	50507.571	0.004	-0.049	6	KL	
34026	1535+190	LX Ser	p	50539.541	0.001	+0.001	7	KL	
34027	0400+279	RW Tau	p	50396.652	0.003	-0.110	7	KL	
34028	0433+186	RZ Tau	p	50509.298	0.005	+0.022	7	HP	
34029	0548+281	SV Tau	p	50517.342	0.005	-0.011	8	HP	
34030			p	50517.357	0.004	+0.004	13	MKo	
34031			p	50530.339	0.004	-0.016	5	KL	
34032	0431+151	TY Tau	p	50436.346	0.004	+0.214	7	HP	
34033	0434+015	AC Tau	p	50520.286	0.006	+0.075	5	KL	
34034	0344+249	AH Tau	p	50421.463	0.005	-0.092	6	KL	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
34035			s	50422.300	0.005	-0.087	7	HP	
34036			p	50486.339	0.005	-0.088	7	HP	
34037	0452+278	AQ Tau	p	<u>50464.3387</u>	0.0003	<u>-0.0640</u>	23	RD	CCD; norm. minimum
34038	0412+305	BN Tau	p	50486.342	0.003	+0.001	6	KL	
34039	0555+270	CT Tau	p	50486.283	0.004	+0.010	7	HP	
34040	0526+287	ES Tau	p	50390.409	0.005	+0.005	8	KL	
34041			p	<u>50462.2836</u>	0.0012	<u>+0.0057</u>	10	RD	CCD
34042	0538+259	GQ Tau	p	50518.336	0.005	-0.042	8	HP	
34043	0435+205	HU Tau	p	50477.273	0.009	+0.009	10	CPa	
34044			p	50481.389	0.014	+0.013	8	CPa	
34045	0436+283	IV Tau	p	<u>50514.3624</u>	0.0016	<u>-0.0001</u>	12	RD	CCDV
34046	0547+269	V781 Tau	p	<u>50489.6092</u>	0.0005	<u>-0.0288</u>	50	BK	CCD
34047	0128+301	V Tri	p	50422.337	0.005	+0.011	7	HP	
34048			p	50436.371	0.003	0.000	5	KL	
34049	0157+276	X Tri	p	<u>50397.385</u>	0.003	<u>-0.031</u>	22	APs	CCD
34050			p	50433.334	0.004	-0.029	8	HP	
34051			p	50502.307	0.002	-0.035	7	MKo	
34052	0132+293	RS Tri	p	50436.311	0.005	+0.009	9	HP	
34053	0210+367	RV Tri	p	50396.283	0.005	0.000	6	HP	
34054			p	50509.322	0.002	-0.011	7	MKo	
34055	0222+278	RW Tri	p	50390.550	0.001	-0.001	6	KL	
34056	0940+561	W UMa	s	50448.478	0.009	-0.030	13	AD	
34057	1339+596	TW UMa	p	50539.471	0.009	-0.101	6	KL	
34058	1206+563	TY UMa	p	50518.359	0.005	+0.018	8	HP	elem. JAAVSO 21, 111
34059	1334+521	UX UMa	p	50486.681	0.001	+0.001	5	KL	
34060	0934+562	VV UMa	p	50487.424	0.005	-0.035	6	HP	
34061			p	50509.414	0.002	-0.040	8	MKo	
34062			p	50518.355	0.004	-0.035	8	HP	
34063	0906+546	XY UMa	p	50519.434	0.005	+0.013	7	HP	
34064			p	50520.390	0.005	+0.012	7	HP	
34065	0928+496	XZ UMa	p	50397.617	0.004	-0.036	6	KL	
34066			p	50517.400	0.002	-0.040	10	MKo	
34067			p	50517.402	0.007	-0.039	6	HP	
34068	1026+620	ZZ UMa	p	50487.402	0.005	-0.004	7	HP	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
34069			p	50517.293	0.004	-0.003	6	KL	
34070	0943+459	AA UMa	s	50502.330	0.004	+0.014	7	HP	
34071			s	50517.315	0.005	+0.019	7	HP	
34072	0851+651	AC UMa	p	50425.276	0.008	-0.076	6	KL	
34073	1042+525	BH UMa	p	50194.439	0.004	+0.003	7	MKo	
34074	1604+869	RZ UMi	p	50520.519	0.008	-0.009	17	AD	elem. BBSAG Bull. 111, 8
34075	1312-172	UW Vir	p	50525.563	0.003	-0.027	8	KL	
34076	1355-014	BH Vir	p	50194.442	0.005	+0.002	6	MKo	
34077	1241-084	HW Vir	p	50425.716	0.001	-0.002	7	KL	elem. IBVS No. 4109
34078			p	50444.625	0.001	-0.002	5	KL	
34079			p	50466.686	0.001	-0.001	6	KL	
34080			p	50482.559	0.001	-0.001	6	KL	
34081			p	50485.711	0.001	-0.001	6	KL	
34082			p	50486.528	0.001	-0.001	6	KL	
34083			p	50486.644	0.001	-0.001	6	KL	
34084			p	50488.512	0.001	-0.001	7	KL	
34085			p	50488.630	0.001	0.000	6	KL	
34086			p	50507.537	0.001	-0.002	6	KL	
34087			p	50507.654	0.001	-0.001	5	KL	
34088			p	50508.588	0.001	-0.001	5	KL	
34089			p	50509.522	0.001	-0.001	6	KL	
34090			p	50514.424	0.001	0.000	5	KL	
34091			p	50514.541	0.001	-0.001	6	KL	
34092			p	50514.657	0.001	-0.001	5	KL	
34093			p	50515.591	0.001	-0.002	6	KL	
34094			p	50517.575	0.001	-0.002	6	KL	
34095			p	50517.692	0.001	-0.001	5	KL	
34096			p	50518.509	0.001	-0.001	5	KL	
34097			p	50518.627	0.001	0.000	5	KL	
34098			p	50519.442	0.001	-0.002	6	KL	
34099			p	50519.678	0.001	0.001	4	KL	
34100			p	50520.610	0.001	-0.001	6	KL	
34101			p	50521.427	0.001	-0.001	7	KL	
34102			p	50524.462	0.001	-0.001	6	KL	
34103			p	50525.395	0.001	-0.002	7	KL	
34104			p	50525.513	0.001	0.000	5	KL	
34105			p	50525.630	0.001	0.000	4	KL	
34106			p	50528.663	0.001	-0.002	6	KL	
34107			p	50530.532	0.001	0.000	5	KL	
34108			p	50536.601	0.001	-0.001	5	KL	
34109			p	50538.468	0.001	-0.002	6	KL	
34110			p	50538.585	0.001	-0.001	6	KL	
34111			p	50539.518	0.001	-0.002	7	KL	
34112	1241-084		p	50539.518	0.001	-0.002	5	KL	
34113	2026+246	AW Vul	p	50390.303	0.004	0.000	7	HP	
34114	2030+246	AX Vul	p	50391.313	0.005	-0.011	8	HP	
34115	2023+272	BE Vul	p	50412.309	0.006	+0.012	5	KL	

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Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
34116	2123+276	BK Vul	p	<u>50392.2570</u>	0.0004	<u>-0.1258</u>	23	EBI	CCD
34117	1954+237	BO Vul	p	50336.352	0.002	+0.029	7	MKo	
34118			p	50410.294	0.002	+0.028	7	KL	
34119	2044+280	BU Vul	p	50396.371	0.005	+0.012	6	HP	
34120	1953+275	KN Vul	p	<u>50390.2499</u>	0.0004	<u>+0.1059</u>	9	EBI	CCD
34121			p	<u>50391.3220</u>	0.0012	<u>+0.1060</u>	31	EBI	CCD

Notes on observations given in table above

AQ Boo

An ambiguity exists in the paper given as the source for the elements (PASP 108, 1105) concerning the value of the period (0.333412^d resp. 0.33412^d). We have used the first value stated.

MM Cas

In the GCVS, an uncertain value for the duration of totality is given (0.08:p = 0.09^d). Our CCD observation shows that this duration is certainly less than 0.01^d.

KQ Gem

The variable shows a phase of totality lasting for $d = 0.029^d \pm 0.004^d$.

IK Her

According to the GCVS, the duration of totality is questionable. Our CCD observation yields a value of $d = 0.023^d \pm 0.004^d$.

R. Diethelm

On the elements of EX Delphini

EX Del was discovered as variable star by Hofmeister (Erg. AN 12, 1), while Karamysh and Mandel (Per. Zv. 15, 586) determined the eclipsing nature. Based on their photographic observations they found the following ephemerides:

$$\text{Min (JD, hel)} = 2429846.372 + 0.39684486 * E \quad (1).$$

These are the elements quoted in the GCVS 1985. Another paper based on photoelectric data published by Hoffmann and Meinunger (IBVS 2343) points out the erroneous value of the period. They find the corrected elements:

$$\text{Min (JD, hel)} = 2424338.343 + 0.3309882 * E \quad (2)$$

from 33 observed minima.

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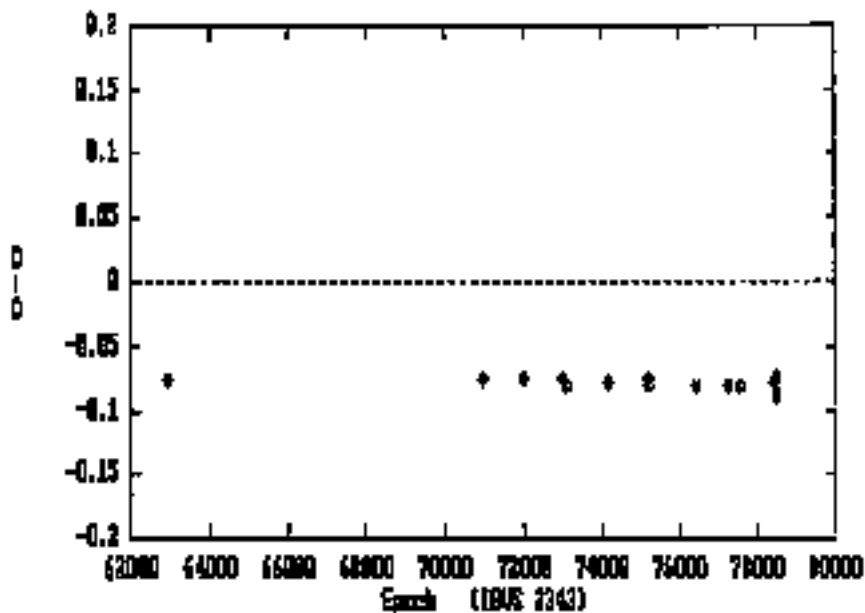
Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
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Our visual survey lets us suspect, that the epoch in the elements given above is in error. Using all the recently published times of minimum the following new elements can be computed:

$$\text{Min (JD, hel)} = 2424338.300 + 0.3309877 * E \quad (3)$$

$$\pm .020 \quad .0000003$$

We used only the minima after JD2445000 for this determination. The period of EX Del has remained constant since that time as can be seen in the O-C-diagram (based on elements (2)) given below.



M. Martignoni

Improved elements of variation for HI Cephei

Locher (BBSAG Bull 81, 6) was the first to determin the elements of variation of HI Cep. In the meantime, a number of additional minima have been timed by him, making it possible to improve these elements considerably. A least square analysis yields:

$$\text{Min (JD, hel)} = 2446576.466 + 1.7529291 * E$$

$$\pm .007 \quad 0.0000026$$

R. Diethelm