

# BBSAG

## BULLETIN

### 97

1991 May 15

#### 130. List of Minima of Eclipsing Binaries

The following table lists 11 photoelectric (**bold**), 26 CCD-measured and 304 visual heliocentric minima of eclipsing binaries obtained primarily from November 1990 to April of 1991 by the following observers:

<b>FAc</b>	Francesco Acerbi, Codogno, Italy
<b>CBa</b>	Carlo Barani, Codogno, Italy
<b>EBl</b>	Ernst Blättler, Wald, Switzerland
<b>RCr</b>	Robert E. Crumrine, Fairport, USA
<b>RD</b>	Roger Diethelm, R. Szafraniec Observatory, Metzerlen, Switzerland
<b>MFr</b>	Michel Frangeul, Cesson, France
<b>KL</b>	Kurt Locher, Grüt, Switzerland
<b>GM</b>	George Mavrofridis, Nikea, Greece
<b>APs</b>	Anton Paschke, Rüti, Switzerland
<b>HP</b>	Hermann Peter, Otelfingen, Switzerland

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.

## Editorial

Die Minimumsliste in dieser Ausgabe des BBSAG Bulletins enthält zum ersten Mal eine neue Kolonne (e.), mit der wir dem Leser ermöglichen wollen, sich ein Bild der Genauigkeit der gegebenen Minimumszeit zu machen. Für die photoelektrisch bestimmten Minima wurde die Fehlerabschätzung mit den in den Arbeiten über die Kwee-van Woerden Methode (z. B. *S. Ghedini, Software for Photometric Astronomy, Willman-Bell Inc., 1982, p. 47 ff*) dargestellten Formeln bestimmt. Für die visuell beobachteten Minima gelangt die Methode von *R. Szafraniec (Acta Astronomica Series c, 1948, 4, 81)* zur Anwendung. In ihrer Arbeit steht auf Seite 82: **"Die Fehlergrenzen der Minimumszeit kann gefunden werden, indem man das Pauspapier auf die eine oder die andere Seite solange verschiebt, bis eine deutliche Abweichung der Punkte des absteigenden von denen des aufsteigenden Astes feststellbar ist. Die Hälfte der grösseren Verschiebung wird als Mass für die Fehlerabschätzung angenommen ..."** (Üebersetzung durch den Schreibenden.)

**Wir bitten alle Beobachter, die im Bulletin Resultate zu publizieren wünschen, ab sofort die genannte Methode zu verwenden.**

Starting with this issue of the BBSAG Bulletin, we include a new column (e.) in our table, with which we want to give the reader a possibility to judge the accuracy of the observed time of minimum. For the minima determined by photoelectric means, the limit of error was deduced as given in the paper describing the Kwee-van Woerden algorithm (*S. Ghedini, Software for Photometric Astronomy, Willman-Bell Inc., 1982, p. 47 ff*). In the case of the visual minima, the method given by *R. Szafraniec (Acta Astronomica Series c, 1948, 4, 81)* was employed. We quote from her paper (page 82): **"The limits of error of this moment of minimum may be found by shifting the tracing-paper to one or the other side till a distinct divergence of points is perceptible. Half of the greater shift is assumed as the limit of error ..."**

**We urge all the contributing observers of our Bulletin to use this method starting immediately.**

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28440	2308+527	RT And	p	48252.571		0.005	10	RCr	
28441	0000+325	TW And	p	48255.407	0.020	0.017	7	KL	
28442	0058+378	WZ And	p	48205.241		0.024	7	HP	
28443	0153+418	XZ And	p	48203.260		0.013	9	HP	
28444			p	48222.261		0.012	8	HP	
28445			p	48260.266		0.014	10	EBI	
28446			p	48260.267	0.003	0.015	8	KL	
28447			p	48260.268		0.016	9	HP	
28448	2334+483	AD And	s	48260.370		0.005	10	HP	
28449	0205+405	BX And	p	48126.448	0.003	-0.012	19	CBa	
28450	0108+466	CO And	p	48208.368		0.035	12	HP	
28451	0139+445	EP And	p	48260.502	0.003	0.036	6	KL	
28452	0209+444	GZ And	s	48248.334	0.004	0.012	6	KL	
28453	2324+452	LO And	s	48203.381		0.052	7	HP	
28454	2202-090	XZ Aqr	p	48205.248		0.030	6	KL	
28455	2233-009	CX Aqr	p	48179.310		0.006	11	EBI	
28456			p	48233.242	0.002	0.007	6	KL	
28457	2319-162	CZ Aqr	p	48174.405	0.006	-0.016	29	APs	CCD
28458	2243+007	DD Aqr	p	48175.375	0.005	0.005	42	APs	CCD
28459	1936+064	LT Aql	p	48329.619	0.013	0.034	5	KL	
28460	1945+092	OP Aql	p	48171.420	0.005	-0.106	24	APs	CCD, normal minimum

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28461	1936+126	<b>V343 Aql</b>	p	48208.315		-0.023	9	HP	
28462			p	48346.658	0.003	-0.025	8	KL	
28463	1847+106	<b>V479 Aql</b>	p	48361.530	0.008	-0.015	6	KL	
28464	1946+154	<b>V688 Aql</b>	p	48176.340		-0.072	11	EBl	
28465	0201+237	<b>SS Ari</b>	s	48202.350		-0.080	6	HP	
28466			s	48222.252		-0.070	7	HP	
28467			p	48307.288		-0.091	9	EBl	
28468	0514+382	<b>RY Aur</b>	p	48305.402	0.006	0.027	7	KL	
28469	0629+324	<b>WW Aur</b>	p	48262.326	0.005	0.020	6	MFr	
28470	0542+411	<b>ZZ Aur</b>	p	48292.367		0.008	8	HP	
28471	0509+334	<b>CL Aur</b>	p	48203.344		0.083	6	KL	
28472	0615+497	<b>HL Aur</b>	p	48208.429		0.008	10	HP	
28473			p	48330.442		0.011	7	HP	
28474	0624+304	<b>KU Aur</b>	p	48260.296	0.004	0.039	6	KL	
28475	1402+302	<b>TU Boo</b>	p	48227.731	0.006	-0.054	5	KL	
28476			p	48348.382		-0.038	8	HP	
28477	1458+353	<b>TY Boo</b>	p	48321.435		0.050	8	GM	
28478			p	48348.402		0.060	7	HP	
28479			p	48362.357		0.060	7	HP	
28480	1419+473	<b>UW Boo</b>	p	48321.468		0.013	10	GM	
28481			p	48322.475		0.015	9	GM	
28482			p	48339.550		0.010	7	GM	
28483	1454+465	<b>AC Boo</b>	p	48340.460		0.087	9	GM	
28484	1432+093	<b>CK Boo</b>	s	<b>48356.4091</b>	<b>0.0022</b>	<b>-0.0117</b>	16	RD	pe, B
28485	0734+761	<b>Y Cam</b>	p	48290.661	0.009	0.067	5	KL	
28486	0630+823	<b>SV Cam</b>	p	48338.501		0.004	12	GM	
28487	1137+805	<b>AL Cam</b>	p	48322.361		-0.021	9	GM	
28488	0837+200	<b>RY Cnc</b>	p	48290.525	0.003	0.034	23	APs	CCD
28489	0906+097	<b>SW Cnc</b>	p	48356.380		-0.038	12	HP	
28490	0849+092	<b>TU Cnc</b>	p	48357.345	0.011	-0.075	8	KL	
28491			p	48357.355		-0.065	11	HP	
28492	0837+191	<b>TX Cnc</b>	p	<b>48332.3597</b>	<b>0.0010</b>	<b>0.0140</b>	8	RD	pe, B
28493	0906+306	<b>WW Cnc</b>	p	48312.287	0.004	-0.322	5	KL	
28494			p	48332.376		-0.321	7	HP	
28495			p	48361.391		-0.321	7	HP	
28496	0843+330	<b>WX Cnc</b>	p	48308.330		-0.004	7	EBl	
28497			p	48330.392		0.016	7	HP	
28498			p	48357.326		0.008	8	HP	
28499	0858+268	<b>WY Cnc</b>	p	48332.385		-0.001	9	EBl	
28500			p	48361.408		-0.006	6	HP	
28501	1354+289	<b>YZ CVn</b>	p	48329.525	0.006	0.000	8	KL	
28502	0717-163	<b>R CMa</b>	p	48275.395		0.019	10	FAc	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28503	0656-187	UU CMa	p	48307.377	0.003	-0.056	10	KL	
28504	0737+064	RT CMi	p	48329.39	0.01	-0.38	12	APs	CCD
28505	0734+056	TT CMi	p	48356.36	0.01	-0.03	22	APs	CCD, normal minimum
28506	0737+048	TX CMi		48307.435	0.007		35	APs	CCD, GCVS per. not accurate enough
28507	0748+037	UZ CMi	p	48310.415	0.010	0.213	34	APs	CCD
28508	0751+037	XZ CMi	p	48290.382		0.005	9	HP	
28509			p	48330.325		0.009	8	HP	
28510			p	48345.372		0.008	8	HP	
28511			p	48356.359		-0.003	10	HP	
28512	0727+106	AC CMi	p	48178.600	0.003	0.005	18	APs	CCD
28513	0737+040	AK CMi	p	48260.396	0.005	0.003	6	KL	
28514			p	48290.382		-0.004	9	HP	
28515			p	48329.423		-0.010	7	HP	
28516			p	48359.420		-0.006	6	HP	
28517	0722-000	AP CMi	p	48314.37	0.01	-1.67	40	APs	CCD
28518	0727+046	BF CMi	p	48266.470	0.007	-0.084	42	APs	CCD
28519			p	48331.387		-0.104	9	HP	
28520	0244+694	RZ Cas	p	48123.538	0.005	0.010	24	CBa	
28521			p	48232.317	0.004	0.021	9	MFr	
28522			p	48233.507		0.016	16	FAc	
28523			p	48269.349	0.007	0.000	17	MFr	
28524	0232+710	AB Cas	p	48265.361		0.024	7	HP	
28525			p	48332.336	0.006	0.022	6	KL	
28526			p	48332.336		0.022	8	HP	
28527	0123+698	AE Cas	p	48260.309	0.014	0.086	8	KL	
28528	0130+707	AH Cas	p	48233.310	0.002	-0.209	8	KL	
28529	2304+538	IR Cas	p	48208.430		0.011	9	HP	
28530			p	48255.403	0.004	0.017	6	KL	
28531	0045+605	OR Cas	p	48205.385		-0.001	9	HP	
28532			p	48205.395		0.009	5	KL	
28533	0037+499	V523 Cas	p	48258.383	0.003	0.017	7	KL	
28534	0057+816	U Cep	p	48348.529	0.003	0.043	9	KL	
28535	2145+570	SU Cep	p	48222.306		0.006	8	HP	
28536	2038+754	VW Cep	s	48275.463		-0.032	10	FAc	
28537			p	48275.582		-0.052	12	FAc	
28538	2350+686	XY Cep	p	48222.285		0.050	8	HP	
28539	2157+607	DK Cep	p	48234.271	0.005	0.040	5	KL	
28540	2306+609	DP Cep	p	48205.270		-0.024	5	KL	
28541	2017+766	EG Cep	p	48208.354		0.010	9	HP	
28542	2130+706	GK Cep	p	48126.434	0.008	-0.054	18	CBa	
28543			p	48127.399	0.010	-0.025	18	CBa	
28544	2024+614	HI Cep	p	48306.608	0.007	0.146	7	KL	elem. BBSAG Bull. 81, p. 6

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28545	2109+575	IO Cep	p	48202.370		0.011	6	KL	
28546	0158+786	V357 Cep	p	48234.339	0.003	-0.056	4	KL	elem. Brno C. 28, p. 34
28547	0220+809	V358 Cep	p	48255.307	0.015	0.025	7	KL	elem. BBSAG Bull. 96, p.10
28548	0212-124	RW Cet	p	48205.415	0.007	-0.004	42	APs	CCD
28549	0246+015	SS Cet	p	48283.262	0.007	-0.034	9	KL	
28550	0146-211	TW Cet	s	48255.258	0.003	0.000	7	KL	
28551	0147-198	VY Cet	s	48176.480	0.006	-0.017	22	APs	CCD
28552	0256+032	XY Cet	p	<b>48233.375</b>	<b>0.010</b>	<b>0.021</b>	9	RD	pe, B
28553	0156-231	AA Cet	s	48255.272	0.011	0.020	7	KL	
28554	1230+269	RW Com	s	48357.404		-0.006	6	HP	
28555	1232+236	RZ Com	s	48329.437		0.013	8	HP	
28556			s	48348.397		0.016	10	HP	
28557			p	48358.380		0.013	13	HP	
28558	1247+189	SS Com	p	48348.410		0.042	11	HP	
28559			s	48356.447		0.029	8	HP	
28560	1209+228	CC Com	s	48331.358		0.006	6	HP	
28561			p	48358.382		-0.003	8	HP	
28562	1604+274	TW CrB	p	48357.369		0.022	6	HP	
28563	1205-128	W Crv	p	48327.580	0.003	-0.001	9	KL	
28564			s	48332.440		0.007	7	HP	
28565			p	48357.469		0.005	8	HP	
28566	1121-164	V Crt	p	48359.411		-0.013	8	HP	
28567	2021+430	UW Cyg	p	48348.619	0.003	0.030	11	KL	
28568	2022+467	ZZ Cyg	p	48327.610	0.004	-0.014	6	KL	
28569	2111+305	AE Cyg	p	48203.242		0.006	8	HP	
28570	1939+466	BR Cyg	p	48222.280		0.005	10	HP	
28571	2056+349	CG Cyg	p	48202.424		0.024	10	HP	
28572	2156+523	DO Cyg	p	48208.356		-0.001	10	HP	
28573	1941+326	V370 Cyg	p	48329.586	0.005	-0.008	5	KL	
28574	2113+372	V387 Cyg	p	48203.330		0.006	8	HP	
28575	2026+381	V445 Cyg	p	48304.676	0.003	0.136	5	KL	
28576	2027+389	V456 Cyg	s	48233.299	0.005	0.028	8	KL	
28577	2050+158	BS Del	s	48116.39	0.02	0.11	29	APs	CCD, normal minimum
28578	2037+142	DM Del	p	48127.507	0.001	-0.078	26	CBa	
28579	2014+157	EX Del	s	48170.410	0.005	0.035	45	APs	CCD
28580	2051+044	FZ Del	p	48174.344		-0.021	9	EBl	
28581			p	48203.326		-0.018	7	HP	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28582	1142+725	Z Dra	p	48227.697	0.002	-0.058	10	KL	
28583			p	48359.368		-0.060	8	HP	
28584	1841+626	RR Dra	p	48260.422	0.005	0.048	9	KL	
28585	1822+588	RZ Dra	p	48208.321		0.022	9	HP	
28586	1533+640	TW Dra	p	48346.581	0.007	0.016	12	KL	
28587	1820+475	TZ Dra	p	48338.498		0.002	9	GM	
28588	1214+651	AR Dra	p	48304.675	0.002	0.003	6	KL	
28589			p	48330.356		0.002	7	HP	
28590			p	48357.386		-0.001	8	HP	
28591			p	48361.446		0.004	9	HP	
28592	1238+665	AX Dra	p	48332.327		-0.027	8	HP	
28593	1537+572	CK Dra	p	48260.541	0.010	-0.009	6	KL	
28594	1731+572	CV Dra	p	48124.386	0.002	-0.011	20	CBa	elem. IBVS No. 3213
28595	1922+698	DW Dra	p	48346.318	0.005	-0.001	5	KL	elem. BBSAG Bull. 84, p. 6
28596	0352-150	RU Eri	p	48232.475	0.006	-0.004	38	APs	CCD
28597	0356-173	RY Eri	p	48232.55	0.01	0.10	66	APs	CCD, normal min., descend. branch only
28598	0321-008	WX Eri	p	48272.344		0.007	9	HP	
28599			p	48286.338		0.004	10	EBl	
28600	0409-105	YY Eri	p	48290.282	0.002	0.040	29	APs	CCD
28601	0427-123	AM Eri	s	48248.420	0.010	-0.026	8	KL	
28602	0409-119	BL Eri	p	48286.29	0.01	0.01	32	APs	CCD
28603	0558+231	RW Gem	p	48347.386	0.005	-0.007	5	KL	
28604	0644+289	AE Gem	p	48358.404	0.013	0.126	6	KL	
28605	0647+214	AF Gem	p	48309.280	0.007	-0.050	6	KL	
28606			p	48345.346		-0.045	8	HP	
28607	0622+180	BO Gem	p	48232.432	0.004	0.239	6	KL	
28608	0627+196	CK Gem	p	48306.486	0.004	-0.037	7	KL	
28609	0749+272	GW Gem	p	48332.447		0.014	9	HP	
28610	1737+329	SZ Her	p	48321.547		-0.008	10	GM	
28611			p	48362.453		-0.007	7	HP	
28612	1838+248	BO Her	p	48306.669	0.006	-0.027	7	KL	
28613	1615+090	CC Her	p	48336.676	0.004	0.039	8	KL	
28614			p	48357.487		0.042	12	HP	
28615	1806+458	DQ Her	p	48306.653	0.001	0.000	6	KL	
28616	1819+144	MT Her	p	48359.542	0.006	0.003	6	KL	
28617	0903-080	RX Hya	p	48330.441		0.021	7	HP	
28618			p	48346.415	0.007	0.024	13	KL	
28619			p	48362.382		0.019	9	HP	
28620	1341-265	SX Hya	p	48311.566	0.004	-0.045	7	KL	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28621	1017-229	VY Hya	p	48332.368	0.006	-0.043	9	KL	
28622	0811+006	WY Hya	p	48330.340		0.002	6	HP	
28623			s	48359.353		0.017	7	HP	
28624	2247+447	VY Lac	p	48208.340		-0.111	9	HP	
28625	2226+535	DG Lac	p	48205.241		-0.091	7	HP	
28626			p	48260.393	0.005	-0.102	7	KL	
28627	0933+264	Y Leo	p	48331.482	0.005	-0.006	7	KL	
28628			p	48348.346		-0.003	9	HP	
28629			p	48358.464		-0.002	10	HP	
28630	0942+201	RT Leo	p	48310.410	0.008	0.002	6	KL	
28631	0945+132	UU Leo	p	48308.472	0.010	0.025	6	KL	
28632	1035+145	UV Leo	p	48328.328		0.004	9	EBl	
28633			p	48332.535	0.007	0.011	38	APs	CCD
28634			p	<b>48358.3399</b>	<b>0.0003</b>	<b>0.0124</b>	26	EBl	pe
28635	1114-063	UX Leo	p	48348.349		-0.213	8	HP	
28636			p	<b>48356.3969</b>	<b>0.0024</b>	<b>-0.2222</b>	16	RD	pe,B
28637			p	48356.409		-0.210	9	HP	
28638	1037+138	UZ Leo	s	<b>48359.403</b>	<b>0.006</b>	<b>0.064</b>	14	RD	pe, B
28639	0931+191	WZ Leo	p	48362.411		-0.049	7	HP	
28640	0958+176	XY Leo	s	48348.310		0.029	8	HP	
28641	0959+172	XZ Leo	p	48348.312		0.014	8	HP	
28642			p	48362.462		0.020	7	HP	
28643	1142+250	BL Leo	s	48357.411	0.016	-0.001	8	KL	
28644	0941+255	DHK-16 Leo	p	<b>48362.4010</b>	<b>0.0031</b>	<b>-0.0048</b>	16	RD	pe, B; elem. IBVS No. 3514
28645	0507-149	Z Lep	p	48260.388	0.008	-0.139	8	KL	
28646	0557-202	RS Lep	p	48258.370	0.003	0.008	6	KL	
28647			p	48307.340		0.014	12	EBl	
28648	1519-080	TY Lib	p	48361.525	0.008	0.001	7	KL	
28649	0851+466	RY Lyn	p	48307.397	0.006	0.004	6	KL	
28650			p	48330.349		-0.003	9	HP	
28651	0933+415	RZ Lyn	p	48345.368		-0.037	9	HP	
28652			p	48361.443		-0.018	8	HP	
28653	0912+429	UU Lyn	p	48331.343		0.027	9	HP	
28654			p	48359.427		0.003	7	HP	
28655	1925+415	TT Lyr	p	48222.245		-0.015	8	HP	
28656	1814+410	TZ Lyr	p	48362.460		0.008	9	HP	
28657	1831+377	EW Lyr	p	48214.577		0.259	10	RCr	
28658			p	48327.593	0.005	0.250	6	KL	
28659	0632+088	RW Mon	p	48296.366	0.003	-0.012	9	KL	
28660			p	48357.361		-0.012	10	HP	
28661	0750-029	TU Mon	p	48311.387	0.010	-0.047	5	KL	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28662	0658-086	<b>BB Mon</b>	p	48331.342		-0.005	8	HP	
28663	0757-033	<b>BO Mon</b>	p	48231.709	0.004	-0.028	7	KL	
28664	0643-002	<b>DD Mon</b>	p	48330.360		0.089	7	HP	
28665	0654-052	<b>EP Mon</b>	p	48329.373		0.009	9	HP	
28666	0706-024	<b>FH Mon</b>	p	48248.499	0.008	-0.059	5	KL	
28667	0755-070	<b>FW Mon</b>	p	48332.389	0.008	-0.022	6	KL	
28668			p	48332.402		-0.009	10	HP	
28669	0635+036	<b>V396 Mon</b>	p	48265.366	0.005	0.006	6	KL	
28670	0749-011	<b>V681 Mon</b>	p	48309.391	0.010	0.223	8	KL	elem. BBSAG Bull. 75, p. 4
28671	1728+106	<b>V449 Oph</b>	p	48359.540	0.006	0.018	7	KL	
28672	1752+141	<b>V913 Oph</b>	p	48361.606	0.008	0.050	5	KL	
28673	0530-011	<b>VV Ori</b>	p	48326.318		-0.002	24	CBa	
28674	0608+163	<b>EG Ori</b>	p	48243.46	0.01	-0.07	58	APs	CCD
28675	0454-036	<b>EQ Ori</b>	p	48307.374	0.003	-0.026	6	KL	
28676	0508-086	<b>ER Ori</b>	p	48275.499		0.031	6	FAc	
28677			p	48312.312	0.003	0.008	32	APs	CCD
28678	0452+013	<b>ET Ori</b>	p	48332.343		0.011	9	EBl	
28679			p	48332.343		0.011	8	HP	
28680	0532+029	<b>FF Ori</b>	p	48308.317		0.012	7	EBl	
28681	0520+042	<b>FH Ori</b>	p	48233.535	0.007	-0.195	46	APs	CCD
28682			p	48330.341		-0.192	10	HP	
28683	0525+035	<b>FO Ori</b>	p	48233.49	0.01	-0.04	24	APs	CCD
28684	0610+214	<b>FT Ori</b>	p	48358.357		0.000	12	HP	
28685	0538+025	<b>FZ Ori</b>	p	48290.290		-0.025	9	HP	
28686			s	48329.304		-0.010	8	HP	
28687	0608+185	<b>V392 Ori</b>	p	48307.307		0.009	8	EBl	
28688			p	48332.351		0.001	10	EBl	
28689	0552-093	<b>V640 Ori</b>	p	48290.353		-0.030	9	HP	
28690			p	48292.365		-0.039	6	HP	
28691			p	48296.405	0.003	-0.040	6	KL	
28692	0453+1000	<b>NSV1776 Ori</b>	p	48296.408	0.007	-0.011	6	KL	elem. IBVS No. 3544
28693	2355+156	<b>U Peg</b>	p	<b>48233.2922</b>	<b>0.0020</b>	<b>-0.0403</b>	9	RD	pe, B
28694	2226+177	<b>UX Peg</b>	p	48176.357	0.005	-0.010	23	APs	CCD
28695	2220+160	<b>BB Peg</b>	p	48205.390		0.003	7	HP	
28696	2128+117	<b>BO Peg</b>	p	48203.358		-0.005	8	HP	
28697	0320+483	<b>RT Per</b>	p	48202.363		0.022	9	HP	
28698			p	48292.392	0.003	0.015	6	KL	
28699			p	48292.403		0.025	6	HP	
28700			p	48332.328		0.029	8	HP	
28701			p	48332.330		0.031	11	EBl	



Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28702	0256+389	ST Per	p	48260.274	0.004	0.042	8	KL	
28703			p	48260.280		0.047	10	HP	
28704	0405+464	XZ Per	p	48222.254		-0.013	7	HP	
28705			p	48260.254	0.003	-0.017	6	KL	
28706			p	48260.258		-0.014	9	HP	
28707			p	48329.354		-0.015	6	HP	
28708	0403+333	AG Per	s	<b>48233.339</b>	<b>0.007</b>	<b>0.123</b>	16	RD	pe B, displaced secondary
28709	0433+441	KR Per	p	48203.349		0.009	10	HP	
28710			p	48222.268		0.003	7	HP	
28711	0156+529	KW Per	p	48202.357		0.007	8	HP	
28712			p	48255.439	0.006	0.008	6	KL	
28713	0236+454	PS Per	p	48283.362	0.004	0.043	9	KL	
28714	0116+309	RV Psc	p	48205.310		-0.018	9	HP	
28715	0054+120	SX Psc	p	48202.344		-0.002	5	KL	
28716	0811-238	XZ Pup	p	48283.387	0.006	0.044	7	KL	
28717	0736-243	AY Pup	p	48255.487	0.004	-0.006	6	KL	
28718	0828-229	SW Pyx	p	48306.541	0.003	0.141	10	KL	elem. BBSAG Bull. 91, p. 14
28719	1922+163	CU Sge	p	48205.292		0.011	9	HP	
28720	1739-138	AK Ser	p	48362.599	0.005	-0.011	6	KL	
28721	1554+224	AU Ser	s	48323.684	0.003	-0.013	5	KL	
28722			s	48358.468		-0.014	10	HP	
28723	1534+156	CC Ser	p	48356.412		0.011	9	HP	
28724			p	48359.52	0.01	0.02	32	APs	CCD
28725	1535+190	LX Ser	p	48306.593	0.001	0.000	6	KL	
28726	0400+279	RW Tau	p	48234.255	0.003	-0.047	5	KL	
28727			p	48292.396		-0.052	14	HP	
28728	0433+186	RZ Tau	p	48252.591		0.013	12	RCr	
28729	0431+151	TY Tau	p	48305.322	0.006	0.198	27	APs	CCD
28730	0434+015	AC Tau	p	48260.299		0.040	11	HP	
28731			p	48260.302	0.006	0.043	9	KL	
28732	0344+249	AH Tau	s	48205.369		-0.069	8	HP	
28733			p	48260.423	0.005	-0.074	6	KL	
28734			p	48290.370		-0.066	7	HP	
28735			p	48329.287		-0.072	9	HP	
28736	0549+162	AM Tau	p	48272.301		0.005	9	HP	
28737	0555+270	CT Tau	p	48290.392		0.009	8	HP	
28738			s	48331.386		-0.025	8	HP	
28739			p	48348.409		-0.006	9	HP	
28740	0427+254	GW Tau	s	48260.256		-0.005	7	HP	
28741			s	48292.328		0.001	11	HP	
28742	0128+301	V Tri	p	48255.306	0.014	-0.003	5	KL	

Nr	Design.	Star	Type	O	e.	O-C	n	Obs	Remarks
28743	0210+367	RV Tri	p	48202.342		-0.018	7	HP	
28744			p	48202.356		-0.004	5	KL	
28745			p	48260.379		-0.013	11	HP	
28746	0940+561	W UMa	p	48339.409		-0.009	11	GM	
28747	1339+596	TW UMa	p	48357.534	0.010	-0.046	5	KL	
28748	1206+563	TY UMa	s	48329.378		0.038	8	HP	elem. IBVS No. 1949
28749			p	48331.344		0.054	9	HP	
28750			p	48348.349		0.041	10	HP	
28751			p	48361.468		0.042	10	HP	
28752	1334+521	UX UMa	p	48327.624	0.002	0.001	6	KL	
28753	0934+562	VV UMa	p	48321.519		-0.005	8	GM	
28754			p	48348.325		-0.007	8	HP	
28755			p	48361.380		-0.012	9	HP	
28756	0906+546	XY UMa	p	<b>48332.3342</b>	<b>0.0007</b>	<b>0.0033</b>	8	RD	pe, B
28757	0928+496	XZ UMa	p	48340.482		-0.008	9	GM	
28758			p	48356.363		-0.016	12	HP	
28759			p	48362.489	0.005	-0.001	6	KL	
28760	0943+459	AA UMa	p	48331.395		0.011	7	HP	
28761			p	48361.359		0.015	9	HP	
28762	1127+302	AW UMa	s	<b>48332.353</b>	<b>0.002</b>	<b>-0.009</b>	7	RD	pe, B
28763	1042+525	BH UMa	s	48361.343		-0.097	8	HP	
28764			p	48362.376		-0.112	8	HP	
28765	1312-172	UW Vir	p	48314.622	0.004	-0.011	7	KL	
28766	1402-099	VV Vir	p	48304.639	0.002	-0.010	5	KL	
28767	1402-181	AK Vir	p	48311.619	0.009	-0.028	6	KL	
28768	1325+033	AW Vir	s	48356.413		0.002	9	HP	
28769			p	48358.361		0.003	7	HP	
28770	1325+041	AX Vir	p	48362.409		0.000	8	HP	
28771	1340+048	AZ Vir	s	48358.368		0.000	10	HP	
28772			s	48359.420		0.003	6	HP	
28773	1345-003	BF Vir	p	48359.443		0.003	8	HP	
28774	1927+273	XZ Vul	p	48348.649	0.007	0.008	10	KL	
28775	2023+272	BE Vul	p	48205.296		0.005	7	KL	
28776			p	48205.310		0.019	10	HP	
28777	1954+237	BO Vul	p	48312.648	0.003	0.028	6	KL	
28778	1935+218	BS Vul	p	48208.353		-0.001	8	HP	
28779	2044+280	BU Vul	p	48202.335		0.013	7	HP	
28780	2100+276	ER Vul	p	48126.581	0.001	0.009	20	CBa	

**Errata**

No. Bulletin	No. Observation	corrected value	value in error
96	27973	O = <u>480</u> 87.449	48187.449
96	28123	O = 48 <u>1</u> 89.378	48487.378

R. Diethelm

## Notes on some variables from CCD photometry

### RS CMi:

The minimum does not occur at the time predicted by the GCVS 1985 elements.

### RW CMi:

This EA-type variable was observed in 23 nights and was found to be about 0.4 mag fainter than usual on JD 2448227.655 and about 0.2 mag fainter on JD 2448232.567. These observations were hampered by the light of the full moon only a few degrees away and may therefore be uncertain.

### RX CMi:

The minimum does not occur at the time forecasted by the elements given in the GCVS 1985.

### SX CMi:

SX CMi was observed with the CCD array since the end of 1989 after identification from the GCVS coordinates by the author. The whole period was covered, but no minimum could be found, and the small variations reported in BBSAG Bulletin 95 could not be confirmed. With the kind help of Dr. G. Richter of Sonneberg observatory, the problem has now been solved. The actual position of SX CMi is about half a degree north of the one stated in the GCVS. The correct coordinates are: Rect. (2000.0) = 07<sup>h</sup> 34<sup>m</sup> 37<sup>s</sup> and Decl. (2000.0) = +05° 38' 35".

### NSV 3570 CMi:

This star was observed in 21 nights during the past observing season. It was faint at JD 2448221.660, 2448221.701 and 2448310.330. The timing of a minimum from a series of consecutive observations was not possible.

### NSV 3624 CMi:

The variable was found to be faint on JD 2448221.665, 2448307.518 and 2448330.323.

A. Paschke

