

# BBSAG Bulletin 1

1972 February 5

## Editorial Declaration

The BBSAG is an astronomical amateur organization which has made 2914 mainly visual timings of 232 eclipsing binaries since 1964. Its initials mean "Bedeckungsveränderlichen Beobachter der Schweizerischen Astronomischen Gesellschaft", i.e. "Swiss Astronomical Society's Eclipsing Variable Observers". The results of these timings were hitherto published in ORION (Bulletin of the Swiss Astronomical Society, no. 90 through 127<sup>\*)</sup>). One of the purposes of the present new bulletin consists in continuing publication of these results, because the size of these numerical tables has now grown too large with respect to the design of ORION as a general informative amateur journal. Other subjects concerning eclipsing binaries to be announced in this bulletin will be: revised elements, results of survey of stars having periods yet unknown, problems of identification, suspected variables, etc.

Every person or institution known to us to be working on the survey of periodicity of eclipsing binaries through either correspondance or meeting at the 1971 IAU colloquium at Bamberg now becomes automatically subscriber free of charge. The BBSAG Bulletin will be issued non-periodically according to need, but at least 4 times a year.

Any author of a paper on the above mentioned subjects is kindly invited to submit it to the editors. Papers not written in English will be translated by us and published after consultation with the author.

Roger Diethelm, Tellstrasse 22, 8400 Winterthur,  
Robert Germann, im Nahren, 8636 Wald,  
Kurt Locher, Rebrainstrasse, 8624 Grüt-Wetzikon,  
Hermann Peter, Bühlstrasse 29 B, 8112 Otelfingen, Switzerland

## 34<sup>th</sup> List of Minima of Eclipsing Binaries

The following table lists 119 visual minima obtained by the subsequent observers:

RD	Roger Diethelm, Winterthur
RG	Robert Germann, Wald
KL	Kurt Locher, Grüt-Wetzikon
HP	Hermann Peter, Otelfingen

The O-C refer to the linear elements of the GCVS 1969. Reductions were made using the tracing paper method by R.Diethelm, R.Germann and K.Locher.

---

\*) no. 90 p. 130, no. 93 p. 35, no. 95 p. 95, no. 97 p. 137, no. 98 p. 177, no. 100 p. 63, no. 102 p.110, no.103 p.135, no.104 p.22, no.105 p.54, no.106 p. 81, no.107 p.111, no.108 p.129, no.109 p.164, no.110 p.23, no.111 p.46, no. 112 p.81, no.113 p.109, no.114 p.134, no.115 p.159, no.116 p.21, no.117 p.54, no.118 p.90, no.119 p.126, no.120 p.160, no.121 p.191, no.122 p.21, no. 123 p.55, no.124 p.91, no.125 p.111, no.126 p.142, no.127 p.182

*)											
cur- rent no.	star	minimum or- der	JD hel 244...	0 - C n	ob- ser- ver	cur- rent no.	star	minimum or- der	JD hel 244...	0 - C n	ob- ser- ver
3136	XZ And	I	1248.548	-0.006	13 RD	3190	YY Eri	I	1301.280	+0.001	8 KL
3137		I	1308.269	-0.007	8 RD	3191		II	1302.401	-0.004	11 RD
3138		I	1308.278	+0.003	11 HP	3192		I	1302.551	-0.014	7 KL
3139	AB And	II	1291.253	+0.023	10 HP	3193		I	1308.346	-0.006	11 KL
3140		I	1319.291	+0.016	11 KL	3194		I	1319.284	+0.001	11 KL
3141		I	1328.250	+0.014	8 RG	3195		II	1324.263	-0.003	11 KL
3142		I	1328.252	+0.016	6 KL	3196		I	1326.353	-0.003	11 KL
3143	S Ant	I	1350.425	-0.001	10 KL	3197		I	1328.289	+0.004	6 KL
3144	EE Aqr	I	1308.238	-0.012	7 KL	3198		II	1334.234	+0.001	7 KL
3145	OO Aql	I	1301.227	-0.023	7 RG	3199		I	1335.352	-0.006	11 KL
3146		I	1301.230	-0.020	6 KL	3200		II	1348.372	-0.006	7 KL
3147	TT Aur	I	1301.245	+0.020	11 KL	3201		II	1350.306	-0.002	8 KL
3148	UW Boo	I	1332.682	+0.003	6 KL	3202		II	1352.236	0.000	9 KL
3149		I	1334.703	+0.015	7 KL	3203	SZ Her	I	1257.279	+0.022	10 HP
3150	SV Cam	I	1302.309	-0.011	7 RG	3204	WY Hya	I	1324.575	+0.010	12 KL
3151		I	1324.265	+0.002	7 RG	3205	SW Lac	II	1291.244	-0.011	9 HP
3152	TU CMa	I	1308.443	-0.009	11 KL	3206		II	1350.244	-0.025	11 KL
3153		I	1334.395	+0.004	17 KL	3207	CM Lac	I	1303.256	-0.002	11 RG
3154	RZ Cas	I	1302.251	-0.003	12 HP	3208		I	1303.257	0.000	7 KL
3155		I	1302.254	0.000	9 RG	3209		I	1319.306	+0.002	11 KL
3156	TW Cas	I	1248.524	-0.008	11 RD	3210	UV Leo	I	1302.531	-0.004	6 KL
3157	AB Cas	I	1257.375	+0.006	10 HP	3211	UZ Lyr	I	1282.351	+0.016	17 HP
3158		I	1324.353	+0.007	12 RD	3212	FL Lyr	I	1299.271	-0.014	11 HP
3159	VW Cep	II	1304.263	-0.077	5 KL	3213	RW Mon	I	1335.320	-0.005	5 KL
3160		I	1348.376	-0.077	8 KL	3214	TU Mon	I	1308.433	-0.002	13 KL
3161	ZZ Cep	I	1308.280	+0.005	9 RD	3215	AO Mon	I	1302.545	-0.083	6 KL
3162	RW Cet	I	1326.356	-0.041	6 KL	3216	BO Mon	I	1324.615	+0.059	15 KL
3163	TW Cet	I	1301.310	-0.015	9 RG	3217	ER Ori	I	1322.416	-0.014	11 KL
3164		I	1302.264	-0.012	7 RG	3218		II	1324.319	-0.016	12 RD
3165		I	1334.259	-0.019	8 KL	3219		I	1334.275	-0.010	7 KL
3166	W Crv	II	1304.684	+0.004	10 KL	3220		II	1335.326	-0.018	8 KL
3167	Y Cyg	I	1298.324	-0.122	13 KL	3221		I	1350.361	-0.013	9 KL
3168		I	1316.307	-0.118	7 KL	3222	BB Peg	II	1335.227	-0.002	6 KL
3169		I	1319.298	-0.124	14 KL	3223	RT Per	I	1276.334	-0.043	10 HP
3170		I	1334.288	-0.115	10 KL	3224		I	1282.279	-0.044	13 HP
3171		I	1352.266	-0.115	6 KL	3225		I	1299.262	-0.049	10 HP
3172	UZ Cyg	I	1257.95	-0.01	18 HP	3226	ST Per	I	1324.280	+0.005	13 KL
3173	BR Cyg	I	1302.267	+0.008	11 HP	3227	IU Per	I	1308.300	+0.037	12 RD
3174	V456 Cyg	I	1291.341	+0.025	10 HP	3228	β Per	I	1257.408	-0.021	19 HP
3175	V728 Cyg	I	1308.285	+0.042	13 HP	3229		I	1303.278	-0.029	11 RG
3176	TY Del	I	1257.327	0.000	13 HP	3230	Y Psc	I	1308.311	+0.098	12 RD
3177		I	1282.343	+0.003	15 HP	3231	UV Psc	I	1301.250	+0.004	11 KL
3178	Z Dra	I	1261.307	-0.007	10 HP	3232		I	1319.340	+0.011	10 KL
3179		I	1276.240	-0.007	10 HP	3233		I	1350.333	+0.007	10 KL
3180	RR Dra	I	1261.350	+0.073	16 HP	3234	RW PsA	I	1299.219	-0.034	10 KL
3181	RU Eri	I	1328.229	+0.019	6 KL	3235		II	1301.203	-0.032	7 KL
3182		I	1350.341	+0.003	7 KL	3236	UZ Pup	I	1301.557	-0.026	11 KL
3183		I	1352.250	+0.016	11 KL	3237		II	1350.445	-0.021	7 KL
3184	TZ Eri	I	1301.469	-0.026	5 KL	3238	AY Pup	II	1308.525	+0.043	8 KL
3185	WX Eri	I	1299.236	+0.006	10 KL	3239		II	1324.472	+0.046	8 KL
3186		I	1302.545	+0.022	6 KL	3240	EQ Pup	I	1308.519	-0.013	10 KL
3187		I	1308.291	+0.004	9 RD	3241	RZ Pyx	I	1304.636	+0.183	11 KL
3188		I	1308.301	+0.015	10 KL	3242	RW Tau	I	1298.385	-0.064	10 RG
3189		I	1350.285	+0.011	11 KL	3243		I	1334.374	-0.070	18 RG

\*) The remaining minima no. 2915 through 3135 will probably be published in ORION no. 129

current no.	star	minimum or-der	JD hel 244...	O-C	n	observer	current no.	star	minimum or-der	JD hel 244...	O-C	n	observer
3244		I	1334.377	-0.066	12	KL	3250	XZ UMa	I	1302.406	-0.058	8	RD
3245	RZ Tau	I	1308.309	-0.003	10	RD	3251	AH Vir	II	1316.720	+0.009	8	KL
3246	HU Tau	I	1316.446	+0.009	11	KL	3252	BO Vul	I	1276.349	-0.058	10	HP
3247	X Tri	I	1319.400	+0.022	4	KL	3253	BU Vul	I	1291.333	+0.004	13	HP
3248		I	1324.257	+0.023	10	KL	3254		I	1299.297	+0.002	9	HP
3249	W UMa	I	1302.330	-0.072	7	RD							

New Elements for the Eclipsing Binary EU Vul

From the 48 minima of BU Vulpeculae observed by BBSAG members since 1958 I was able to obtain the following new elements for this eclipsing binary:

(1)  $\text{Min hel JD} = 2433597.97945 + 0.56899297 \times E$

In order to compute these elements I used the common method of the least square deviations, providing each single observed minimum with the same weight. Table 1 contains all minima used in computing the new elements. The O-C<sub>1</sub> refer to the formula

(2)  $\text{Min hel JD} = 2433597.983 + 0.568988 \times E$

while the O-C<sub>2</sub> values were calculated from the new elements mentioned above (1). In figure 1 these O-C<sub>2</sub> values have been plotted against time.

One cannot make any comments on the variability of the period of this star, since I have not been able to find any other observations within the last 30 years.

R. Diethelm

Table 1

JD	O 244..	E	O-C <sub>1</sub>	O-C <sub>2</sub>	observer (see p.1)	JD	O 244..	E	O-C <sub>1</sub>	O-C <sub>2</sub>	observer (see p.1)
0038.406	11319	+0.048	-0.005		RD	0768.423	12602	+0.053	-0.006		RD
0059.468	11356	+0.057	+0.004		RD	0805.408	12667	+0.054	-0.005		KL
0063.439	11363	+0.045	-0.007		RD	0839.550	12727	+0.057	-0.003		KL
0088.494	11407	+0.065	+0.012		RD	0858.328	12760	+0.058	-0.002		KL
0141.382	11500	+0.037	-0.017		RD	0866.300	12774	+0.064	+0.004		RD
0149.367	11514	+0.056	+0.002		RG	0866.308	12774	+0.072	+0.012		A. Erdin
0157.329	11528	+0.052	-0.001		RD	0887.345	12311	+0.057	-0.003		KL
0344.528	11857	+0.054	-0.001		KL	1082.509	13154	+0.058	-0.004		RD
0344.537	11857	+0.063	+0.008		RD	1107.549	13198	+0.062	0.000		RD
0364.449	11892	+0.061	+0.005		KL	1115.516	13212	+0.054	+0.002		RD
0365.588	11894	+0.062	+0.006		KL	1135.424	13247	+0.057	-0.005		N. Rüber
0381.514	11922	+0.056	0.000		KL	1139.414	13254	+0.064	+0.002		RD
0402.575	11959	+0.062	+0.007		KL	1143.394	13261	+0.061	-0.001		HP
0435.314	12122	-0.058	+0.002		KL	1168.425	13305	+0.057	-0.006		RD
0504.406	12138	+0.047	-0.010		RG	1176.403	13319	+0.069	+0.006		KL
0507.258	12143	+0.054	-0.003		KL	1176.400	13319	+0.066	+0.003		RD
0528.312	12180	+0.055	-0.002		A. von Rotz	1202.568	13365	+0.060	-0.002		RD
0565.298	12245	+0.057	0.000		KL	1213.379	13384	+0.061	-0.002		HP
0711.534	12502	+0.053	+0.004		RD	1213.333	13384	+0.067	+0.004		RD
0731.442	12537	+0.056	-0.002		RD	1217.360	13391	+0.059	-0.004		H. Bader
0731.445	12537	+0.059	+0.001		KL	1217.367	13391	+0.066	+0.003		RD
0735.425	12544	+0.056	-0.002		KL	1221.351	13398	+0.057	+0.004		KL
0735.433	12544	+0.064	+0.006		RD	1225.329	13405	+0.062	-0.001		HP
0740.547	12553	+0.058	-0.001		KL	1233.295	13419	+0.062	-0.001		KL

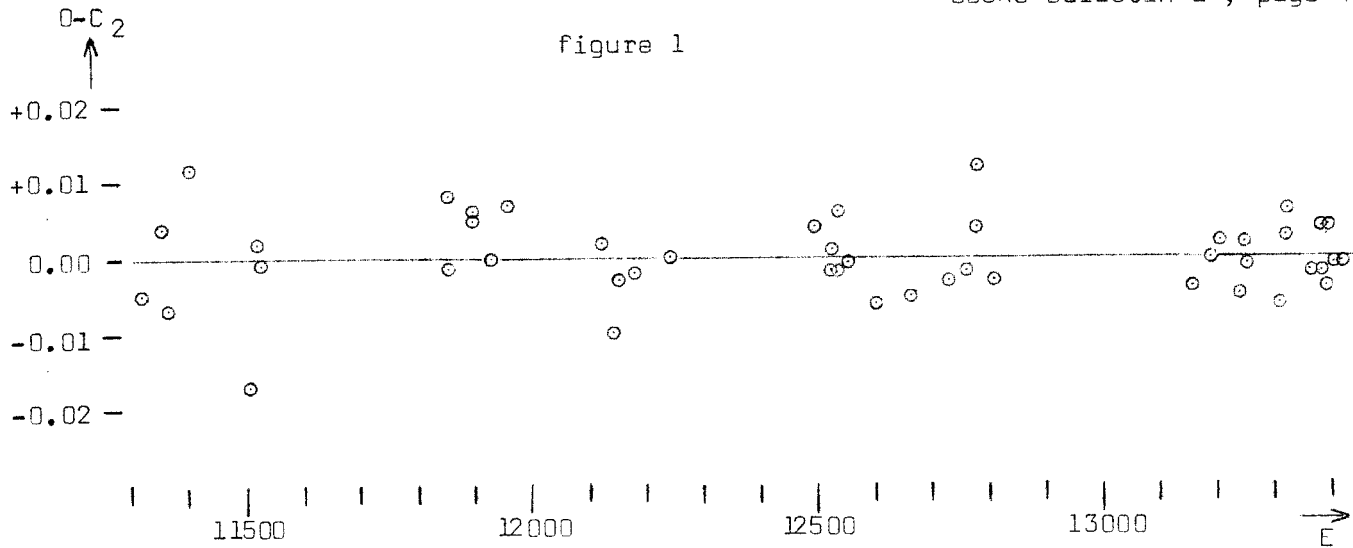


figure 1

On the Identification of the Eclipsing Component of the Visual Binary BV 1481 Cet

This star was recently discovered and investigated as an eclipsing variable by Bloomer ( IBVS 586 and 587 respectively ) using Boyden and Mt. John patrol plates. Bloomer did not mention its nature of a visual binary of separation 10" (SAO 167450 /167451) and small magnitude difference.

Such the pair is very suitable for a visual survey of its variable magnitude difference. Unfortunately I started this work only late in the now ending season, but decided to publish its poor results because continuation of this visual survey could be immediately made by someone from a southern latitude, maybe even in daytime with sufficiently large instruments.

I made 20 visual estimations during 9 nights, strictly not being aware of the phases. The results are compiled in table 2 and plotted against phase in figure 2, using Bloomer's elements ( Min = JD 2440566.652 + 0.733282 E , IBVS 587 ). If these elements are approximately correct, there is little doubt that the brighter (southern following) visual component is the eclipsing one.

K.Locher

Table 2

heliocentric JD; 244....:	1308.245	1319.248	.266	.304	1324.233	.244				
mag.167450 - mag.167451:	.9	.6	.8	.7	.3	.3				
cycle + fraction of cycle:	1011.33	1026.34	.36	.42	1033.14	.15				
1326.254	1334.222	.256	.306	1335.231	1350.225	.247	.256	.272	.280	.308
.6	.8	.8	.6	.3	.4	.2	.2	.4	.5	.5
1035.89	1046.76	.81	.87	1048.14	1068.58	.61	.63	.65	.66	.70
1352.229	1353.246	.261								
.5	.6	.6	$m_{50} - m_{51}$							
1071.32	1072.70	.72								

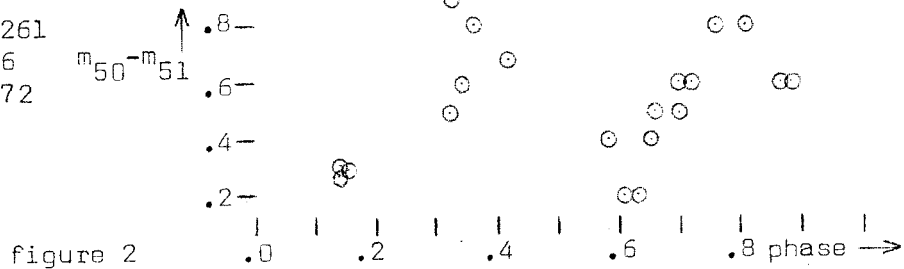


figure 2

Errata

- ORION 127, p.182 : The quote sign denoting omission of non-linear terms should be given to the star Y Cyg instead of EG Cep.
- BBSAG Prediction Book 1972: August 11/12: The minimum of XZ Aql must be cancelled. All minima of Y Cam and 80 Mon are predicted 1/2 hours too early.

