

# BBSAG Bulletin 7

1973 February 3

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

The following table lists 179 minima, all except 2 addenda (no. 4455 & 4490 from previous months) observed during 1972 December and 1973 January by the BBSAG members

RD Roger Diethelm, Winterthur  
 RG Robert Germann, Wald  
 KL Kurt Locher, Grüt-Wetzikon  
 TM Tony Mallama, Solon Ohio USA  
 RM Roger Maier, Rapperswil  
 PM Peter Morger, Hinwil  
 HP Hermann Peter, Otelfingen .

The O-C refer to the linear elements of the GCVS 1969, disregarding improved elements in the 1971 first supplement to the GCVS. Reductions were made using the tracing paper method by R.Diethelm, R.Germann, K.Locher, and H.Peter .

cur- rent no.	star	minimum or- der	JD hel 244...	O-C	n	ob- ser- ver	cur- rent no.	star	minimum or- der	JD hel 244...	O-C	n	ob- ser- ver
4401	RT And	I	1668.302	-0.010	17	RG	4426	CX Aqr	I	1664.256	+0.007	9	HP
4402		I	1673.340	-0.004	10	RG	4427		I	1664.258	+0.009	9	RD
4403		I	1688.430	-0.008	8	KL	4428		I	1664.259	+0.010	10	KL
4404		I	1707.302	-0.004	12	RG	4429	DX Aqr	I	1664.253	+0.042	14	KL
4405	UU And	I	1653.311	+0.109	8	KL	4430	OO Aql	II	1657.239	-0.034	8	RG
4406	XZ And	I	1666.600	-0.002	9	TM	4431		I	1673.210	-0.026	7	KL
4407		I	1673.381	-0.007	11	KL	4432		I	1675.240	-0.014	10	RG
4408	AD And	II	1657.324	+0.018	5	RD	4433	V 346 Aql	I	1657.269	-0.021	10	RG
4409		II	1657.329	+0.023	7	RG	4434	IM Aur	I	1664.284	-0.031	6	RD
4410		II	1658.311	+0.010	9	HP	4435	SV Cam	I	1675.354	-0.008	8	RG
4411		II	1664.290	+0.014	8	RD	4436		I	1678.334	+0.007	11	RG
4412		II	1664.298	+0.023	9	RG	4437	R CMa	I	1707.373	+0.012	16	KL
4413		II	1668.278	+0.020	11	RG	4438	RX CMa	I	1707.487	-0.034	6	KL
4414		II	1673.254	+0.017	11	RG	4439	TX CMa	I	1699.423	-0.063	6	KL
4415		II	1675.247	+0.019	10	RG	4440	RZ Cas	I	1657.246	+0.004	11	RG
4416		II	1677.236	+0.016	9	RG	4441		I	1657.254	+0.012	9	PM
4417		II	1677.241	+0.022	6	KL	4442		I	1664.409	-0.004	11	RM
4418		II	1681.222	+0.020	9	KL	4443		I	1682.332	-0.011	12	RG
4419		II	1682.218	+0.020	10	KL	4444		I	1682.342	0.000	12	HP
4420		I	1688.318	-0.020	8	KL	4445		I	1688.324	+0.005	11	KL
4421		I	1697.319	+0.020	7	KL	4446		I	1694.291	-0.004	8	RG
4422		I	1705.298	+0.034	6	KL	4447		I	1694.293	-0.002	9	RD
4423		I	1707.267	+0.011	10	RG							
4424	CN And	I	1657.358	-0.039	7	RD							
4425		I	1664.282	-0.057	6	RD							

cur- rent no.	star	minimum or- JD hel der 244...	0 - C	n ser- ver	ob- cur- rent no.	star	minimum or- JD hel der 244...	0 - C	n ser- ver	ob-
4448		I 1694.294	0.000	13 HP	4487	RW Com	I 1706.620	-0.038	12 KL	
4449		I 1694.298	+0.003	10 KL	4488	CC Com	II 1706.576	+0.067	12 KL	
4450		I 1694.298	+0.004	8 PM	4489		I 1706.685	+0.066	12 KL	
4451		I 1707.444	+0.001	10 KL	4490	W Crv	II 1649.679	-0.005	10 KL	
4452	TV Cas	I 1664.238	-0.006	6 RD	4491	AE Cyg	I 1657.330	-0.008	5 RD	
4453		I 1664.244	+0.001	9 HP	4492	V548 Cyg	I 1678.231	-0.033	10 RG	
4454	AB Cas	I 1663.340	+0.009	11 HP	4493	RR Del	I 1673.243	-0.004	5 KL	
4455	DM Cas	I 1546.8	-8.5	8 RD	4494	Z Dra	I 1694.340	+0.002	14 HP	
4456	VW Cep	II 1673.318	-0.072	7 KL	4495		I 1709.267	-0.003	12 HP	
4457		I 1681.255	-0.067	11 KL	4496	RZ Dra	I 1687.597	-0.017	14 KL	
4458		II 1682.214	-0.082	5 KL	4497		I 1688.705	-0.011	9 KL	
4459		II 1684.723	-0.077	6 KL	4498	TW Dra	I 1694.323	-0.034	17 HP	
4460		I 1687.651	-0.072	13 KL	4499	AI Dra	I 1667.234	+0.005	15 KL	
4461		II 1688.337	-0.082	10 KL	4500		I 1673.225	+0.002	8 KL	
4462	ZZ Cep	I 1657.376	-0.013	6 RD	4501		I 1687.603	-0.006	7 KL	
4463	SS Cet	I 1657.268	-0.053	6 KL	4502	RU Eri	I 1673.409	+0.018	11 KL	
4464	TW Cet	I 1653.337	-0.011	11 KL	4503		I 1694.279	+0.025	8 KL	
4465		II 1657.292	-0.017	8 RG	4504		I 1699.325	+0.014	6 KL	
4466		II 1664.263	-0.016	7 KL	4505	WX Eri	I 1657.371	+0.018	7 RD	
4467		I 1673.290	-0.020	9 RG	4506		I 1681.229	+0.001	4 KL	
4468		II 1675.348	-0.021	7 RG	4507		I 1699.340	0.000	9 KL	
4469		II 1677.252	-0.019	14 RG	4508	YY Eri	II 1657.332	-0.004	5 RG	
4470		I 1699.269	-0.023	9 KL	4509		II 1657.335	-0.001	6 RD	
4471		II 1708.296	-0.026	8 KL	4510		II 1675.332	-0.008	7 RG	
4472	VY Cet	II 1653.405	*	9 KL	4511		II 1677.266	-0.003	7 KL	
4473		I 1657.323	*	6 KL	4512		I 1680.322	-0.002	9 RG	
4474		II 1664.294	*	10 KL	4513		I 1681.286	-0.002	10 KL	
4475		I 1673.334	*	8 KL	4514		II 1681.440	-0.008	9 KL	
4476		II 1694.311	*	6 KL	4515		I 1688.356	-0.005	7 KL	
4477		I 1699.237	*	9 KL	4516		II 1694.305	-0.003	10 KL	
4478		II 1707.251	*	10 KL	4517	AS Eri	I 1688.313	-0.007	17 KL	
4479		II 1708.264	*	9 KL	4518	AF Gem	I 1706.303	-0.011	7 KL	
4480		II 1709.295	*	6 KL	4519	WY Hya	II 1664.679	+0.010	6 KL	
4481	AA Cet	II 1653.379	**	11 KL	4520		I 1709.424	+0.005	5 KL	
4482		I 1657.425	**	6 KL	4521	SW Lac	I 1657.327	-0.039	5 RD	
4483		I 1664.382	**	9 KL						
4484		II 1673.236	**	8 KL						
4485		I 1699.234	**	9 KL						
4486		I 1707.281	**	8 KL						

\* GCVS period erroneous, 0 - C according to the elements of BDSAG Bulletin 6 page 6 :

+0.005 +0.003 -0.014 -0.007 +0.007 -0.008 -0.005 -0.015 -0.006

\*\* not contained in the GCVS, 0 - C according to Bloomer's (new) elements IBVS 745 (cp. page 4 of this issue) :

-0.012 +0.012 -0.001 +0.006 0.000 +0.004

current no.	star	minimum or-der	JD hel 244...	0 - C	n ser-ver	ob-serve	current no.	star	minimum or-der	JD hel 244...	0 - C	n ser-ver	ob-serve	
4522		I	1658.273	-0.055	9	HP	4552		II	1694.373	-0.015	10	HP	
4523		II	1664.237	-0.024	6	RD	4553		II	1697.332	-0.019	5	KL	
4524		I	1675.290	-0.036	11	RG	4554		I	1707.282	-0.019	8	RG	
4525		I	1677.211	-0.040	7	KL	4555	UX	Peg	I	1664.272	+0.004	10	RD
4526		I	1677.222	-0.029	8	RG	4556	DI	Peg	I	1657.337	-0.011	6	RD
4527		II	1681.228	-0.032	9	KL	4557	IQ	Per	I	1673.266	*	6	KL
4528		II	1688.275	-0.040	11	KL	4558		I	1699.391	*	9	KL	
4529	VX Lac	I	1664.285	-0.046	5	RD	4559	SX	Psc	I	1657.241	-0.027	7	KL
4530	CM Lac	I	1664.300	-0.013	9	RG	4560	UZ	Pup	I	1681.502	-0.020	8	KL
4531		I	1664.312	-0.001	7	RD	4561	XZ	Pup	I	1664.605	+0.003	10	KL
4532		I	1664.318	+0.006	10	KL	4562	AY	Pup	I	1707.386	+0.054	7	KL
4533		I	1680.354	-0.005	8	RG	4563	RW	Tau	I	1658.327	-0.071	14	HP
4534		I	1688.377	-0.007	7	KL	4564		I	1658.331	-0.068	21	RG	
4535		I	1709.242	-0.003	10	HP	4565		I	1694.321	-0.072	18	RG	
4536	Y Leo	I	1664.641	+0.070	12	KL	4566		I	1694.321	-0.072	7	KL	
4537	UV Leo	II	1664.679	-0.008	6	KL	4567		I	1694.322	-0.070	20	HP	
4538		II	1681.488	-0.001	13	KL	4568		I	1694.324	-0.069	8	RD	
4539		I	1709.388	-0.006	11	KL	4569		I	1705.401	-0.068	7	KL	
4540	δ Lib	I	1687.644	+0.017	27	KL	4570	RZ	Tau	II	1694.282	+0.018	8	RD
4541	RU Mon	II	1709.319	+0.064	6	KL	4571	AH	Tau	I	1664.264	+0.044	9	RD
4542	RW Mon	I	1699.384	-0.006	9	KL	4572	GR	Tau	I	1664.297	+0.036	10	RD
4543	TU Mon	I	1707.312	+0.004	11	KL	4573	X	Tri	I	1663.321	-0.026	10	HP
4544	DO Mon	I	1707.400	+0.116	12	KL	4574		I	1664.289	-0.029	9	RD	
4545	V 508 Oph	II	1703.750	+0.003	11	KL	4575		I	1664.296	-0.023	13	RG	
4546		I	1706.678	+0.001	12	KL	4576		I	1697.323	-0.028	7	KL	
4547	ER Ori	I	1654.793	-0.007	16	TM	4577	W	UMa	I	1657.322	+0.004	6	RD
4548		I	1673.419	-0.011	7	KL	4578	AH	Vir	II	1684.728	+0.025	11	KL
4549		I	1681.469	-0.005	10	KL	4579	BH	Vir	I	1664.665	+0.002	10	KL
4550		I	1682.311	-0.009	14	RG								
4551		I	1688.447	-0.013	5	KL								

\* no period given in the GCVS, 0 - C according to Bischof's elements IDVS 673:

+0.012 -0.017

V Y C e t i

Further Support for the New Interpretation

Meanwhile 9 further minima were observed within 9 weeks, all of which being consistent with the new elements announced in OBSAG Bulletin 6, page 6 (cp. page 2 of this issue). By this the new period is verified to an accuracy of +3 units of the last given digit.

K. Locher

A A C e t i

Translation of the Results published in BDSAG Bulletins 2, 5, 6 to Bloomer's new, totally different Elements

In the IDVS no. 745 issued 1972 December, R.H. Bloomer announces corrected elements of this eclipsing star based on a period entirely different from the previously (IDVS 587) adopted one. The adapted reduction of my visual minimum timings supports these results, as the considerably more consistent residuals show in table 8. As far as my own observations are concerned, the discrepancy failed detection because of the fact that the minimum time advances by about 2 hours between consecutive nights following the old elements (1.5 period) as well as the new ones (2 periods).

table 8

BDSAG current minimum no.	published BDSAG Bulletin	minimum magnitude ADS 1581 B - m <sub>A</sub>	old		new	
			IDVS 587 order	elements O-C	IDVS 745 order	elements O-C
3307	2	.2	II	+0.085	I	+0.064
3900	5	- .2	I	+0.037	I	-0.008
3901	5	- .3	II	+0.032	I	+0.022
3902	5	.0	II	+0.044:	II	-0.014:
3903	5	- .1	I	+0.051	II	+0.022
3904	5	.2	II	+0.020	II	+0.018
3905	5	- .2	II	+0.018	I	+0.001
3906	5	.1	I	+0.067	II	+0.006
4203	6	.1	I	+0.027	II	+0.012
4204	6	- .1	I	+0.058	II	+0.012
4205	6	.2	II	+0.057	II	+0.007
4206	6	- .1	I	+0.047	II	-0.008
4207	6	.1	II	+0.043:	II	+0.016:
4208	6	- .3	II	+0.033	I	-0.010
4209	6	.1	I	+0.037	II	+0.006
4210	6	.0	I	+0.037	II	-0.002
4211	6	- .3	I	+0.046	I	-0.009
4212	6	- .3	II	+0.026	I	-0.001

The equal depths of the two minima shown in fig.7 of BDSAG Bulletin 5 are now no longer real, and the star finally joins the EB type as Bloomer initially suggested:

mean & mean error of the above 3<sup>rd</sup> column for

(new) primary minima : - 0<sup>m</sup>.20 ± 0<sup>m</sup>.07  
 (new) secondary minima : + 0<sup>m</sup>.05 ± 0<sup>m</sup>.03

K. Locher

Current Elements for V 346 Aquilae

From 70 minima of V 346 Aql observed by members of the BDSAG between 1966 May and 1972 November the following current elements of light variation have been derived:

$$\text{Min hel JD} = 2439267.542 + 1.1063611 \times E$$

$$\pm .005 \quad \pm .0000006$$

For these computations the common least-square method was applied. Each minimum was weighted according to the number of individual observations

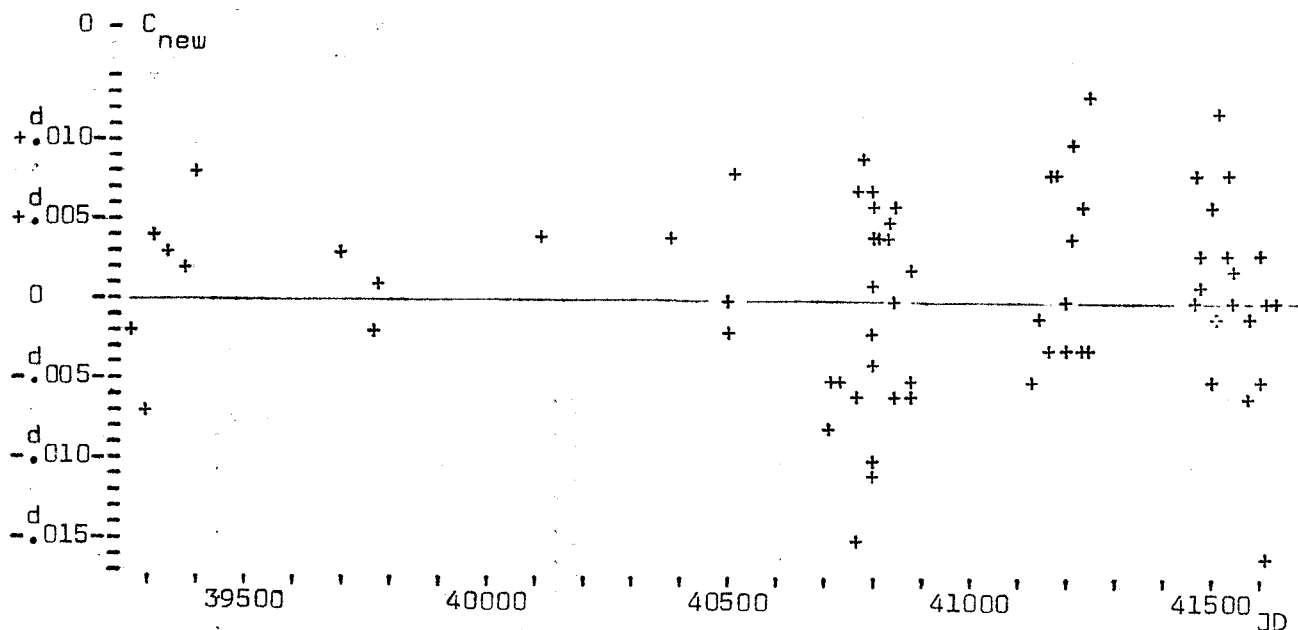
making it up. Table 9 states all minima (published earlier) along with their O-C values from these elements, while figure 10 depicts these values.

R. Diethelm

table 9.

$O_{JD} 24\dots$	$O-C_{new}$	$O_{JD} 24\dots$	$O-C_{new}$	$O_{JD} 24\dots$	$O-C_{new}$	$O_{JD} 24\dots$	$O-C_{new}$
39267.540	-0.002	40774.391	-0.015	40857.383	0.000	41472.528	+0.008
308.470	-0.007	774.400	-0.006	888.355	-0.006	482.478	+0.001
319.545	+0.004	775.519	+0.007	888.356	-0.005	482.480	+0.003
350.522	+0.003	785.478	+0.009	888.363	+0.002	493.535	-0.005
390.350	+0.002	795.428	+0.001	41139.500	-0.005	503.504	+0.006
401.420	+0.008	795.431	+0.004	159.418	-0.001	513.467	+0.012
704.558	+0.003	795.433	+0.006	159.427	+0.008	514.560	-0.001
775.360	-0.002	796.522	-0.011	169.374	-0.003	534.484	+0.008
785.320	+0.001	796.531	-0.002	180.448	+0.008	535.585	+0.003
40119.444	+0.004	805.374	-0.010	200.352	-0.003	554.390	0.000
390.502	+0.004	805.380	-0.004	200.355	0.000	554.393	+0.002
493.388	-0.002	805.391	+0.007	221.380	+0.004	585.362	-0.006
503.347	0.000	806.494	+0.004	221.386	+0.010	585.367	-0.001
523.270	+0.008	836.366	+0.004	231.339	+0.006	595.321	-0.005
713.548	-0.008	836.366	+0.005	232.436	-0.003	606.392	+0.003
713.551	-0.005	847.432	+0.006	241.287	-0.003	616.331	-0.016
733.465	-0.005	857.377	-0.006	241.304	+0.013	616.347	0.000
				471.413	0.000	626.304	0.000

figure 10



Errata

- BDSAG Bulletin 6 page 1 FK Aql, minimum no. 4143: The uncertainty sign (:) should be given
- 2 V346 Aql, minimum no. 4158: The date should be increased by 100
- 4 BE Vul, minimum no. 4395: The digit misprinted 1 should read 9
- 4 VY Hya appeal: The Julian date mentioned within (not at the end of) the text should be decreased by 100

