

BBSAG Bulletin 8

1973 April 6

41st List of Minima of Eclipsing Binaries

The following table lists 219 visual minima, namely :

- 1) completely those obtained during February and March 1973 by
 - RD Roger Diethelm, Winterthur
 - RG Robert Germann, Wald
 - KL Kurt Locher, Grüt-Wetzikon
 - HP Hermann Peter, Otelfingen
- 2) completely those obtained from January through March 1973 by
 - TM Tony Mallama, Solon Ohio USA
- 3) recent and earlier results from the "WAS EB program" (cp. heading comment 3) to the 37th list, BBSAG Bulletin 4, page 1, 1972) by
 - DB Dave van Buren, Geneva N.Y. USA
 - RS Robert D. Schlesinger, Rochester N.Y. USA

The O-C refer to the linear elements of the GCVS 1969, disregarding improved elements from the 1971 1st supplement to the GCVS. All reductions were made using the tracing paper method by anyone mentioned above under 1).

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
4500	XZ And	I	1708.668	-0.010	12	TM	4605	TX Cnc	II	1722.465	+0.007	8	RD ✓
4581	S Ant	I	1728.420	+0.009	10	KL	4606		I	1743.326	+0.001	7	RD ✓
4582		II	1753.359	-0.013	6	RG	4607		I	1751.365	-0.001	10	KL
4583		II	1753.369	-0.003	7	KL	4608	WW Cnc	I	1719.265	-0.150	5	RD ✓
4584		II	1764.393	-0.001	6	RG	4609	VZ CVn	I	1764.327	-0.023	6	RD ✓
4585		II	1766.333	-0.006	8	RG	4610	R CMa	I	1725.533	0.000	9	TM
4586	00 Aql	II	1727.679	-0.038	10	KL	4611		I	1765.307	+0.016	14	HP
4587	BF Aur	II	1764.309	-0.011	6	RD ✓	4612	TU CMa	I	1722.341	-0.015	6	KL
4588	HS Aur	I	1762.352	+0.015	10	RD ✓	4613		I	1766.342	+0.002	7	KL
4589	UW Boo	I	1751.641	-0.001	7	RD ✓	4614	XZ CMi	I	1753.310	-0.006	7	RD ✓
4590	ZZ Boo	I	1765.623	-0.015	6	KL	4615		I	1764.308	-0.006	6	RD ✓
4591	AD Boo	I	1763.339	-0.010	11	HP	4616	AG CMi	I	1751.354	-0.112	6	KL
4592		I	1763.381	+0.032	8	RG	4617		I	1766.337	-0.110	8	KL
4593		I	1764.378	-0.006	8	HP	4618	RZ Cas	I	1628.575	+0.019	8	DB
4594		I	1764.413	+0.030	9	RG	4619		I	1659.636	+0.004	24	DB
4595	Y Cam	I	1758.684	+0.062	5	KL	4620		I	1683.540	+0.002	11	TM
4596	SV Cam	I	1719.252	+0.003	5	RD ✓	4621		I	1689.504	-0.010	8	DB
4597		I	1725.758	-0.015	17	TM	4622		I	1689.520	+0.006	14	RS
4598		I	1729.323	-0.010	7	RG	4623		I	1696.686	+0.001	23	TM
4599		I	1747.705	-0.011	12	TM	4624		I	1743.305	+0.005	7	RG
4600		I	1752.449	-0.012	13	HP	4625		I	1743.305	+0.005	11	KL
4601		I	1764.311	-0.011	8	RG	4626		I	1762.424	0.000	17	KL
4602	AY Cam	I	1766.312	-0.001	7	RD ✓	4626		I	1762.424	0.000	14	HP
4603	RY Cnc	I	1751.409	-0.041	12	KL	4627	U Cep	I	1741.898	+0.027	22	TM
4604		I	1762.350	-0.029	10	KL	4628		I	1759.349	+0.027	14	HP
							4629		I	1759.350	+0.028	7	KL

current no.	star	minimum or- JD hel der 244...	O - C	n	ob- ser- ver	current no.	star	minimum or- JD hel der 244...	O - C	n	ob- ser- ver
4630		I 1761.843	+0.028	10	TM	4673	AF Gem	I 1722.466	-0.013	8	RD
4631		I 1764.334	+0.026	14	HP	4674		I 1747.344	-0.006	12	RG
4632		I 1764.340	+0.032	10	RD	4675	AY Gem	I 1761.448	-0.010	7	KL
4633	VW Cep	I 1753.331	-0.075	11	RD	4676	BO Gem	I 1722.433	-0.001	12	KL
4634		I 1761.400	-0.077	6	KL	4677	GW Gem	I 1762.391	-0.024	10	RD
4635		II 1762.379	-0.072	10	KL	4678		I 1766.350	-0.021	11	RD
4636		II 1764.323	-0.076	9	RD	4679	HR Gem	I 1753.321	+0.005	10	RD
4637	RW Cet	I 1722.279	-0.043	6	KL	4680	CC Her	I 1766.487	+0.040	8	KL
4638	TW Cet	II 1722.245	-0.018	7	KL	4681	V 450 Her	I 1751.579	-0.016	6	RD
4639	VY Cet	II 1722.253	*	6	KL	4682	RX Hya	I 1743.319	+0.008	10	KL
4640	AA Cet	I 1722.275	**	7	KL	4683		I 1752.442	+0.005	16	HP
4641	RW Com	II 1707.929	-0.035	17	TM	4684	SY Hya	I 1751.351	-0.071	6	KL
4642		I 1747.676	-0.044	9	TM	4685	VY Hya	I 1722.465	+0.002	6	KL
4643		II 1747.806	-0.033	9	TM	4686		I 1728.467	+0.001	10	KL
4644		I 1761.443	-0.043	7	KL	4687		I 1752.477	-0.003	6	KL
4645		I 1764.775	-0.034	11	TM	4688		I 1762.490	+0.003	6	KL
4646		I 1765.715	-0.043	11	TM	4689		I 1764.489	+0.001	13	KL
4647		II 1768.687	-0.038	12	TM	4690		I 1766.485	-0.004	5	KL
4648	W Crv	II 1728.460	-0.004	10	KL	4691	VZ Hya	II 1743.305	+0.002	7	KL
4649		I 1741.457	-0.008	10	KL	4692	WY Hya	I 1742.359	+0.004	5	KL
4650		I 1742.605	-0.025	10	KL	4693		II 1751.321	+0.015	7	KL
4651		II 1752.513	-0.013	10	KL	4694	DE Hya	I 1722.584	+0.010	11	KL
4652		I 1753.488	-0.008	11	KL	4695	DF Hya	I 1762.334	-0.026	8	RD
4653		II 1764.549	-0.007	14	KL	4696		I 1764.307	-0.037	7	RD
4654	V Crt	I 1762.389	+0.027	10	KL	4697	Y Leo	I 1750.633	+0.073	14	TM
4655		I 1768.719	+0.039	21	TM	4698		I 1752.321	+0.075	8	KL
4656	V 456 Cyg	II 1751.625	+0.009	7	RD	4699		I 1762.438	+0.075	21	HP
4657	RR Dra	I 1742.668	+0.081	10	KL	4700		I 1762.438	+0.075	13	KL
4658	RZ Dra	I 1748.749	-0.012	8	TM	4701	RW Leo	I 1751.544	+0.022	10	KL
4659		I 1764.722	-0.015	11	TM	4702	UV Leo	I 1721.391	-0.004	10	RG
4660	TW Dra	I 1722.408	-0.018	7	RD	4703		II 1728.290	-0.006	9	RG
4661	WW Dra	II 1763.327	+0.041	15	HP	4704		I 1734.298	+0.001	8	RG
4662	AI Dra	I 1752.348	+0.003	9	KL	4705		II 1743.296	-0.002	7	RG
4663	YY Eri	II 1721.306	-0.008	12	RG	4706		I 1751.399	0.000	11	KL
4664		I 1743.320	-0.016	9	RG	4707		II 1752.297	-0.003	10	KL
4665		I 1753.293	-0.010	7	RD	4708		I 1763.391	-0.010	11	RG
4666		I 1753.296	-0.007	8	RG	4709		II 1764.291	-0.010	10	RG
4667	AS Eri	I 1728.308	+0.026	6	KL	4710		I 1766.394	-0.007	12	HP
4668	RW Gem	I 1765.354	+0.010	17	HP	4711		I 1766.401	0.000	10	KL
4669	SX Gem	I 1743.287	-0.012	6	RD	4712	UZ Len	II 1762.341	-0.096	8	RD
4670	TX Gem	I 1719.312	-0.009	10	RD	4713		I 1766.352	-0.105	11	RD
4671		I 1719.323	+0.002	4	KL	4714	AP Leo	I 1753.318	-0.027	7	RD
4672	YY Gem	I 1719.350	-0.015	7	RD	4715	T LMi	I 1743.302	-0.088	11	KL

* GCVS period erroneous, O - C according to the elements of BBSAG Bulletin 6, page 6: -0.001

** not contained in the GCVS, O - C according to Bloomer's (new) elements IBVS 745: -0.014

current no.	star	minimum or-der 244...	JD hel	0 - C	n	ob-ser-ver	current no.	star	minimum or-der 244...	JD hel	0 - C	n	ob-ser-ver
4716		I	1746.329	-0.080	8	KL	4756	AY Pup	I	1720.521	+0.050	6	KL
4717		I	1764.435	-0.094	17	HP	4757		I	1721.456	+0.055	9	KL
4718	RS Lep	I	1729.302	-0.016	6	KL	4758		I	1722.385	+0.046	11	KL
4719		I	1729.308	-0.009	8	RG	4759		I	1729.436	+0.063	12	KL
4720		I	1738.319	-0.018	5	KL	4760		I	1738.342	+0.059	5	KL
4721	TZ Lyr	I	1751.584	+0.015	8	RD	4761		I	1746.315	+0.059	8	KL
4722	U Oph	I	1541.418	+0.003	14	DB	4762		I	1753.348	+0.058	11	KL
4723	RV Oph	I	1765.620	-0.006	16	KL	4763	RW Tau	I	1719.248	-0.065	12	RG
4724	V 508 Oph	I	1727.712	+0.003	6	KL	4764		I	1766.313	-0.070	10	KL
4725	V 1010 Oph	I	1727.670	-0.045	13	KL	4765		I	1766.314	-0.069	13	HP
4726	Z Ori	I	1721.400	-0.093	8	KL	4766	RZ Tau	I	1764.316	+0.011	8	RD
4727	ER Ori	I	1682.746	+0.002	12	TM	4767	AH Tau	II	1719.324	+0.047	8	RD
4728		II	1690.568	-0.009	9	DB	4768	CD Tau	I	1753.360	-0.072	12	HP
4729		II	1695.647	-0.011	17	TM	4769	CT Tau	II	1722.463	+0.025	8	RD
4730		I	1707.716	-0.008	16	TM	4770	X Tri	I	1725.498	-0.027	8	TM
4731		II	1719.337	-0.031	7	RD	4771	TX Uma	I	1763.359	-0.011	14	RG
4732		II	1727.405	-0.008	11	KL	4772		I	1763.371	0.000	15	HP
4733		I	1729.304	-0.014	9	RG	4773		I	1766.427	-0.007	11	HP
4734		I	1743.280	-0.011	7	RG	4774	UX Uma	I	1722.612	-0.002	14	KL
4735		II	1747.299	-0.014	11	RG	4775		I	1741.496	+0.001	8	KL
4736		I	1762.322	-0.022	6	RD	4776		I	1742.675	0.000	7	KL
4737		I	1765.290	-0.017	9	RG	4777		I	1751.527	+0.002	6	KL
4738	ET Ori	I	1762.320	+0.002	7	RD	4778		I	1752.509	0.000	7	KL
4739	RT Per	I	1703.580	-0.048	12	TM	4779		I	1753.493	+0.001	10	KL
4740		I	1708.672	-0.053	14	TM	4780		I	1763.328	+0.003	8	KL
4741		I	1725.664	-0.049	8	TM	*4781		I	1766.473	0.000	5	KL
4742		I	1742.646	-0.055	10	TM	4782	VV Uma	I	1766.683	+0.060	6	TM
4743	RV Per	I	1719.323	+0.014	10	RD	4783		I	1768.745	+0.059	15	TM
4744	ST Per	I	1753.314	+0.007	13	HP	4784	XZ Uma	I	1753.438	-0.060	15	HP
4745		I	1753.319	+0.012	6	KL	4785		I	1764.431	-0.067	13	HP
4746	XZ Per	I	1759.298	+0.008	8	KL	4786	ZZ Uma	I	1743.316	-0.004	7	RD
4747	IQ Per	I	1753.455	*	11	KL	4787		I	1766.318	+0.006	12	HP
4748	β Per	I	1753.436	-0.051	16	HP	4788	RU UMi	I	1743.318	-0.007	7	RD
4749	UZ Pup	I	1728.390	-0.028	8	KL	4789	AH Vir	I	1722.408	+0.009	11	KL
4750		I	1751.438	-0.031	8	KL	4790		I	1753.393	+0.022	12	KL
4751		I	1759.385	-0.033	6	KL	4791		I	1762.333	-0.003	6	RD
4752		I	1763.350	-0.042	8	KL	4792		I	1766.417	+0.005	11	KL
4753	XZ Pup	I	1752.296	-0.001	11	KL	4793	AZ Vir	II	1764.385	+0.043	8	RG
4754	AN Pup	I	1729.369	-0.051	12	KL	4794	BH Vir	I	1712.854	-0.005	16	TM
4755		I	1753.366	-0.069	11	KL	4795		I	1748.806	+0.004	12	TM
							4796		I	1763.509	+0.004	10	KL
							4797		I	1766.770	-0.003	8	TM

* no period given in the GCVS, 0 - C according to Bischof's elements IBVS 673: -0.003:

On the 0 - C of V W Hydrae

During the twilight of JD 2441753 (1973 March 11) I was able to watch the ascending branch of an eclipse of this poorly observed binary. It results there-by that the 0 - C referred to the GCVS 1969 is negative by about 3 hours.

K. Locher

New Elements for RU Eridani

From 30 timings of minima of RU Eri since 1968 by K.Locher, the new light elements

$$\text{Min } JD_{hel} = 2434393.062 + 0.6321936 E$$

$$\pm .019 \quad \pm .0000018$$

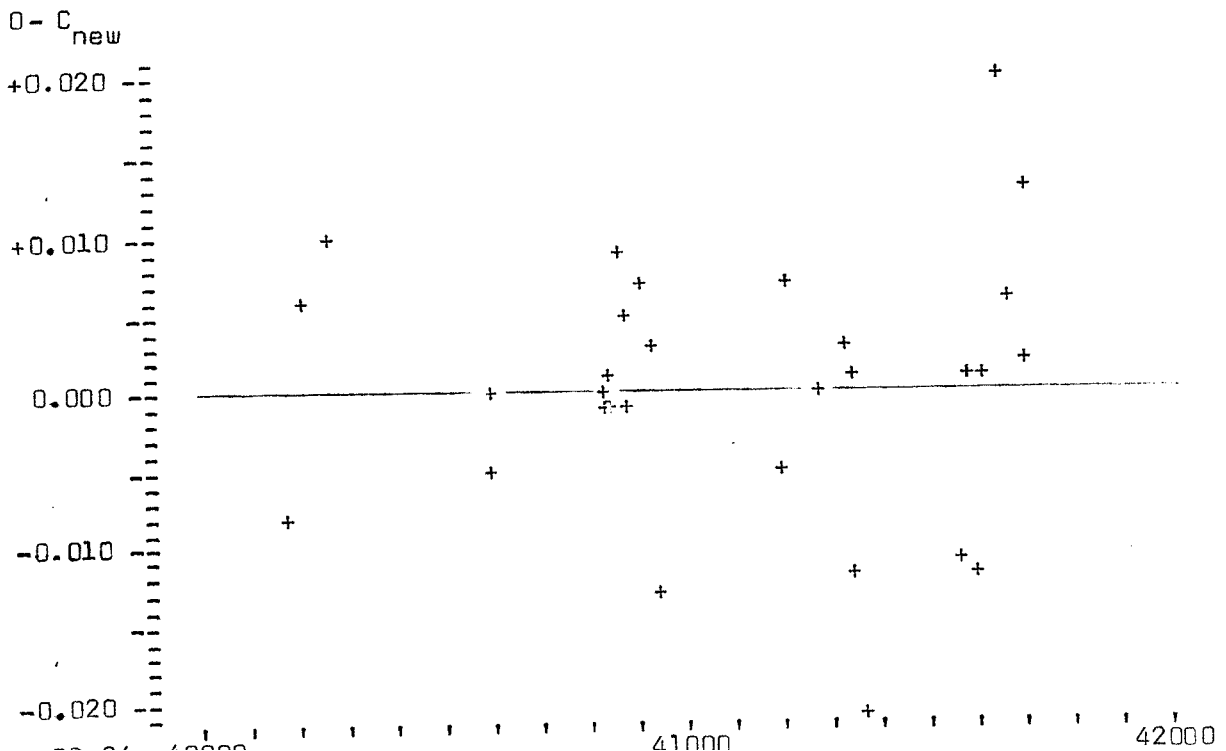
have been computed employing the common method of least square deviations. Each minimum was weighted according to the number of single observations. Table 10 contains all minima, which have been published earlier, along with the $O - C_{new}$ values. These are plotted against time in figure 11.

R. Diethelm

table 10

O	$O - C_{new}$	n	O	$O - C_{new}$	n
2440188.373	-0.008	5	2441198.621	-0.005	9
221.261	+0.006	7	212.541	+0.007	11
264.254	+0.010	6	279.547	0.000	10
594.249	0.000	6	328.229	+0.003	6
604.359	-0.005	7	350.341	-0.012	7
832.586	0.000	8	352.250	+0.001	11
837.643	-0.001	6	369.297	-0.021	4
839.539	-0.001	11	571.609	-0.011	11
856.610	+0.001	17	585.530	+0.001	8
865.469	+0.009	8	595.632	-0.012	6
887.586	-0.001	10	623.461	+0.001	10
889.488	+0.005	11	649.400	+0.020	7
913.514	+0.007	10	673.409	+0.006	11
939.430	+0.003	17	694.279	+0.013	8
953.322	-0.013	11	699.325	+0.002	6

figure 11



Duration & Magnitude at Totality of SY Hya

According to the 1969 and 1971 issues of the GCVS these two photometric parameters are still unknown. At the eclipse of JD 2441751 I obtained

$$d = (10 \pm 10) \text{ minutes} \quad m_v \text{ min} = 14.0 \pm .2$$

$$\text{or } (0.002 \pm 0.002) \text{ period}$$

the latter by comparison to the nearby AAVSO sequence for U Puppis.

K. Locher

Discordances about AG Canis Minoris

Having become aware of a large discrepancy between the only BBSAG result previously published (minimum no. 4170 of Bulletin 6, 1972) and the extensive work by W. Zschokke (MVS Sonneberg 6, page 58, 1972), I surveyed the questionable phase domain on JD 2441751 & ..66 and obtained the 2 O-C published on page 1 (minima no. 4616 & 4617) of this issue, which are clearly in favour of the Sonneberg alternative. Accordingly my earlier BBSAG result must be considered as erroneous, although there is no a priori reason to do so, judging by the observations involved.

K. Locher

Evidence for a Variable Period of VY Hya

After the 1968 BBSAG observations (cp. Bulletin 6, page 4, 1972) have yielded the normal point

$$\text{JD } 2439951 \quad O-C_{\text{GCVS } 1969} = +.014 \pm .001$$

it is astonishing enough to find the O-C close to zero during the present 1973 apparition, the observations of which (no. 4685 to 4690 of page 2 of this issue) resulting in the normal point

$$\text{JD } 2441749 \quad O-C_{\text{GCVS } 1969} = .000 \pm .001$$

Along with the GCVS 1969 initial epoch of

$$\text{JD } 2423535$$

this is a significant indication of non-linearity.

K. Locher

A recent Normal Point for UX UMa

From the 8 minima no. 4774 to 4781 published on page 3 of this issue a normal point can be derived:

$$\text{JD } 2441749 \quad O-C_{\text{GCVS } 1969} = +.001 \pm .001$$

which is in good agreement to Kukarkin's et al. secular oscillation term (II.3.16, page 602, fig.1, 1969), lying on the central part of the new (3rd) quasi-sinusoidal upwave (after reduction to the older elements used there). K. Locher

Errata

ORION 124, page 91: TX UMa: The observed date of the first listed minimum should be decreased by 0.010

