

BBSAG Bulletin 13

1974 February 6

46th List of Minima of Eclipsing Binaries

The following table lists all the 163 minima obtained visually during 1973 December and 1974 January by the observers

RD Roger Diethelm, Winterthur
 RG Robert Germann, Wald
 KL Kurt Locher, Grüt
 HP Hermann Peter, Otelfingen
 HW Heinz Wittwer, Hinwil

The O-C values 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 RD, RG, KL, and HP.

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
5764	RT And	I	2036.246	+0.009	10	RG	5788	AG Cmi	I	2022.700	-0.099	5	KL
5765	AB And	II	2036.339	+0.013	8	RG	5789		I	2039.330	-0.106	6	KL
5766		II	2038.327	+0.010	7	RG	5790	RZ Cas	I	2045.696	-0.001	11	KL
5767		II	2047.291	+0.012	6	RG	5791		I	2074.389	+0.005	12	KL
5768		II	2050.279	+0.013	9	KL	5792		I	2074.390	+0.007	10	HW
5769		II	2050.290	+0.027	7	RG	5793		I	2074.390	+0.007	13	HP
5770	ADS 1693	II	2071.393	*	9	KL	5794	TV Cas	I	2050.307	-0.023	9	RG
5771	A And	I	2074.295	*	6	KL	5795	AB Cas	I	2036.493	+0.005	6	KL
5772		II	2074.449	*	6	KL	5796	U Cep	I	2043.556	+0.027	15	KL
5773		II	2076.285	*	10	KL	5797	VW Cep	II	2043.466	-0.087	12	KL
5774	S Ant	I	2052.592	+0.005	4	KL	5798		I	2043.612	-0.080	11	KL
5775	CX Aqr	I	2027.313	+0.005	6	KL	5799		II	2044.312	-0.076	10	KL
5776	WW Aur	I	2045.702	-0.007	11	KL	5800		I	2044.727	-0.078	7	KL
5777		I	2058.315	-0.018	8	KL	5801		I	2045.559	-0.081	6	KL
5778		II	2059.595	-0.001	6	KL	5802		II	2045.698	-0.080	12	KL
5779	AR Aur	I	2036.573	+0.030	7	KL	5803		II	2046.266	-0.069	7	KL
5780	IY Aur	I	2035.331	+0.001	6	RD	5804		I	2046.678	-0.075	12	KL
5781	ZZ Boo	II	2022.691	-0.022	8	KL	5805		I	2047.267	-0.043	7	KL
5782	SV Cam	I	2035.350	-0.006	8	RD	5806	TW Cet	II	2026.429	-0.013	10	KL
5783		I	2061.446	-0.006	5	KL	5807		II	2027.380	-0.013	5	KL
5784	RY Cnc	I	2035.582	-0.035	6	KL	5808		I	2038.298	-0.026	7	KL
5785	R CMa	I	2059.510	+0.007	12	KL	5809		I	2058.261	-0.025	6	KL
5786	RX CMa	I	2036.480	-0.025	11	KL	5810		I	2071.260	-0.016	12	KL
5787	UU CMa	I	2059.509	-0.064	10	KL	5811		II	2074.270	-0.017	9	KL
							5812	VY Cet	II	2018.398	**	6	KL
							5813		I	2026.414	**	10	KL
							5814		II	2027.266	**	10	KL

* not contained in the GCVS, O-C according to Walker's 'I' (in bracket) and 'II' (following the bracket) elements IBVS 855: (+0.078)-0.007 (+0.076)
 -0.002 (+0.077)-0.001 (+0.078)+0.004

** GCVS period erroneous, O-C according to the elements of BBSAG Bulletin 6 (in bracket) and BBSAG Bulletin 11 (following the bracket): (-0.063)-0.014
 (-0.057)-0.007 (-0.058)-0.008 (-0.051)+0.001 (-0.054)-0.002 (-0.053) 0.000
 (-0.052)+0.003 (-0.055)+0.002 (-0.056)+0.001

cur- rent no.	star	minimum or- JD hel der 244...	0 - C	n ser- ver	ob- server	cur- rent no.	star	minimum or- JD hel der 244...	0 - C	n ser- ver	ob- server
5815		I 2035.283	**	7	KL	5861	RX Hya	I 2076.432 +0.009	10	KL	
5816		II 2035.450	**	7	KL	5862	VW Hya	I 2071.471 -0.125	12	KL	
5817		I 2039.372	**	7	KL	5863	VY Hya	I 2044.667 +0.012	12	KL	
5818		II 2058.290	**	9	KL	5864		I 2046.669 +0.013	12	KL	
5819		II 2071.240	**	12	KL	5865		I 2054.659 -0.002	11	KL	
5820		II 2074.306	**	12	KL	5866	WY Hya	I 2059.546 0.000	11	KL	
5821	XY Cet	I 2071.284 -0.018		7	RD	5867	DE Hya	I 2035.454 +0.032	7	KL	
5822	AA Cet	I 2026.297	*	15	KL	5868	SW Lac	II 2036.253 -0.053	8	RG	
5823		I 2027.369	*	6	KL	5869		I 2038.339 -0.051	6	RG	
5824		I 2035.407	*	8	KL	5870		II 2044.272 -0.052	11	KL	
5825		I 2074.281	*	8	KL	5871		I 2046.354 -0.055	7	KL	
5826	RW Com	II 2026.679 -0.042		6	KL	5872		I 2047.315 -0.055	9	RG	
5827		II 2054.696 -0.032		11	KL	5873	VX Lac	I 2026.396 -0.043	10	KL	
5828	CC Com	I 2026.680 +0.076:		6	KL	5874	CM Lac	I 2046.229 0.000	6	KL	
5829		II 2054.600 +0.079		11	KL	5875	Y Leo	I 2035.592 +0.085	6	KL	
5830	U CrB	I 2045.693 -0.023		12	KL	5876		I 2074.376 +0.090	6	KL	
5831	W Crv	I 2019.704 -0.016		10	KL	5877		I 2079.428 +0.084	5	KL	
5832		I 2026.698 -0.007		12	KL	5878	UU Leo	I 2061.501 -0.008	7	KL	
5833		I 2054.657 +0.010		10	KL	5879	UV Leo	I 2046.641 -0.001	10	KL	
5834		I 2059.687 -0.005		6	KL	5880	h Lib	I 2043.702 -0.010	12	KL	
5835		II 2071.524 -0.004		7	KL	5881	EW Lyr	I 2027.256 +0.040	6	KL	
5836		I 2075.615 +0.012		7	KL	5882	RU Mon	II 2071.369 +0.066 §	7	RD	
5837	V 477 Cyg	I 2018.303 -0.008		6	KL	5883	RW Mon	I 2019.608 -0.005	12	KL	
5838	V 548 Cyg	I 2039.274 -0.061:		6	RG	5884	V 508 Oph	I 2078.706 -0.001:	6	RG	
5839	W Del	I 1997.280 +0.149		7	KL	5885	ER Ori	I 2035.415 -0.022	11	KL	
5840	YY Del	I 2025.258 +0.024		7	KL	5886		I 2047.277 -0.016	8	RG	
5841	Z Dra	I 2074.422 +0.001		19	HP	5887		I 2074.375 -0.015	9	RG	
5842	AI Dra	I 2036.471 +0.007		6	KL	5888	BN Peg	I 2027.249 -0.299	8	RD	
5843		I 2043.661 +0.004		11	KL	5889	RT Per	I 2071.370 -0.052	17	HP	
5844		I 2047.260 +0.007		7	KL	5890	ST Per	I 2076.409 +0.003	6	KL	
5845	YY Eri	II 2026.410 -0.004		7	KL	5891	WY Per	I 2076.312 -0.060	6	KL	
5846		II 2035.413 -0.003		7	KL	5892	XZ Per	I 2071.393 +0.009	15	HP	
5847		II 2043.456 +0.003		10	KL	5893	IQ Per	I 2074.275 ***	9	KL	
5848		II 2046.338 -0.009		7	KL	5894	UV Psc	I 2020.223 +0.003:	5	KL	
5849		II 2047.300 -0.011		7	RG	5895		I 2026.268 +0.021	6	KL	
5850		I 2050.365 -0.001		8	KL	5896		I 2044.339 +0.010	7	KL	
5851		II 2074.303 -0.014		9	RG	5897	UZ Pup	II 2035.594 -0.035	4	KL	
5852	U Gem	I 2071.402 +0.021		8	KL	5898		II 2043.542 -0.035	5	KL	
5853	SX Gem	I 2071.336 -0.012		6	RD	5899		I 2061.423 -0.039	5	KL	
5854	YY Gem	I 2035.326 +0.020:		5	RD	5900	XZ Pup	I 2061.410 -0.013	6	KL	
5855	AF Gem	I 2019.680 +0.003:		5	KL	5901		I 2074.571 -0.006	8	KL	
5856		I 2059.454 -0.015		7	RD	5902	AY Pup	II 2035.435 +0.066	6	KL	
5857		I 2074.388 -0.001		15	HP	5903		I 2061.458 +0.061	8	KL	
5858	BO Gem	I 2076.406 +0.004		10	KL						
5859	GW Gem	I 2078.261 -0.028		5	RD						
5860	TU Her	I 2075.622 -0.057		5	KL						

* not contained in the GCVS, 0-C according to Bloomer's (new) elements IBVS 745: -0.003 -0.003 -0.008 -0.007

** see footnote on page 1

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

current no.	star	minimum order	JD hel 244...	O-C	n	observer	current no.	star	minimum order	JD hel 244...	O-C	n	observer
5904	RW Tau	I	2018.281	-0.068	7	KL	5917	W Uma	I	2035.337	-0.087	7	RD
5905		I	2076.424	-0.070	7	KL	5918		I	2071.367	-0.091	7	RD
5906	RZ Tau	I	2035.342	+0.018	8	RD	5919	UX Uma	I	2071.511	+0.002	6	KL
5907		I	2059.438	+0.005	8	RD	5920		I	2074.462	+0.003	8	KL
5908		II	2071.303	+0.023	9	RD	5921		I	2075.640	0.000	10	KL
5909	X Tri	I	2038.332	-0.029	11	RG	5922	XY Uma	I	2059.418	-0.013	6	RD
5910		I	2071.363	-0.030	14	HP	5923	AH Vir	I	2045.597	+0.033	14	KL
5911		I	2071.363	-0.030	10	KL	5924		II	2071.469	+0.028	12	KL
5912		I	2074.276	-0.032	12	RG	5925		I	2074.523	+0.025	12	KL
5913		I	2074.276	-0.031	12	HP	5926	DM Vir	I	2075.661	+0.027	6	KL
5914	RW Tri	I	2036.496	+0.002	5	KL							
5915		I	2037.417	-0.005	7	KL							
5916		I	2058.290	-0.001	5	KL							

Visual Lightcurve of V 839 Ophiuchi

During seven nights in the summer and fall of 1973 the EW type binary V839 Oph was observed regardless of the phase. The 57 visual observations were corrected for lighttime and afterwards reduced according to the GCVS 1969 elements.

Figure 16 shows the resulting visual lightcurve, from which I deduced the following normal O-C values:

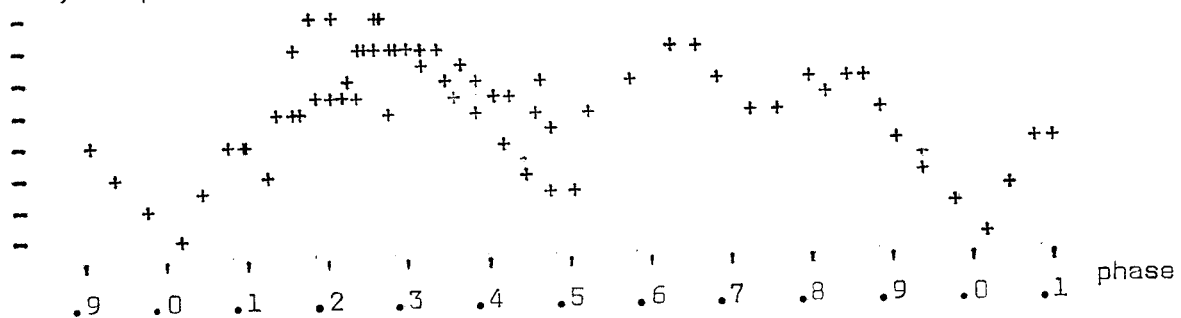
primary minimum : $+0.006^d$ (interval of observation: JD 2441850..24441930)
 secondary minimum : -0.016

This lightcurve also indicates a substantial difference in amplitude between primary and secondary minimum (0.011) while the GCVS states only 0.002 for this difference. The star is quite suitable for visual observation. Its favorable location and readily available comparison stars along with its brightness make it a relatively easy object.

R. Diethelm

figure 16

arbitrary steps



Duration and Magnitude of the Minimum of V W Hydrae

According to the 1969 and 1971 issues of the GCVS, the photometric parameters d and m_{min} of this EA type binary are still unknown. My observation of the minimum of JD 2442071 has yielded that d is probably zero and certainly less than 20 minutes, say

$$d = (5 \pm 5) \text{ minutes}$$

and, comparing to the nearby AAVSO sequences of T Hya and U Pup,

$$m_{v \text{ min}} = 14.1 \pm 0.3$$

K. Locher

The Period of Z Vulpeculae

From 40 visually observed minima of the bright eclipsing binary Z Vul in the period 1964-1973 by BBSAG members the following elements were derived:

$$JD_{\min \text{ hel}} = 2438624.349 + 2.454927 E$$

$$\pm .012 \quad \pm .000002$$

The computations were based on the common method of least square deviations, as each minimum was weighted according to the number of single observations. Table 12 shows the $O-C_{\text{new}}$ values for all BBSAG observations, which have been published previously. Computations of $O-C$ values for other visual observations since 1920 show that this star has not shown a substantial variability of the period during the last 50 years, although a sinusoidal wave of small amplitude (0.005) and long period (30^a) is possible.

R. Diethelm

Table 12

O	E	$O-C_{\text{new}}$	n	obs.	O	E	$O-C_{\text{new}}$	n	obs.
38624.357	0	+0.008	12	HP	40853.423	908	0.000	12	RD
39024.510	163	+0.008	7	KL	858.325	910	-0.008	9	KL
061.321	178	-0.005	21	HP	41172.567	1038	+0.004	12	KL
348.535	295	-0.017	7	KL	177.467	1040	-0.006	13	HP
380.452	308	-0.015	12	HP	182.377	1042	-0.006	8	KL
412.378	321	-0.003	10	HP	182.381	1042	-0.002	11	HP
417.317	323	+0.027	15	HP	204.477	1051	0.000	13	HP
439.373	332	-0.012	7	KL	506.441	1174	+0.008	12	HP
704.528	440	+0.011	6	KL	528.553	1183	+0.025	10	KL
40038.391	576	+0.004	14	HP	560.435	1196	-0.007	10	KL
060.500	585	+0.019	14	HP	560.444	1196	+0.002	10	HP
092.412	598	+0.017	19	HP	565.361	1198	+0.009	13	HP
119.401	609	+0.001	17	HP	587.440	1207	-0.006	8	KL
146.395	620	-0.009	20	HP	592.357	1209	+0.001	12	HP
151.306	622	-0.008	20	HP	592.358	1209	+0.002	12	KL
507.281	767	+0.003	16	HP	830.487	1306	+0.003	11	HP
561.282	789	-0.004	10	HP	884.498	1328	+0.006	6	KL
735.589	860	+0.003	8	RD	916.409	1341	+0.003	6	KL
853.408	908	-0.015	8	KL	943.414	1352	+0.004	14	HP
853.418	908	-0.005	21	HP	42007.242	1378	+0.003	11	HP

Figure 15

