BBSAG Bulletin 20

1975 February 6

53rd List of Minima of Eclipsing Binaries

The following table lists 280 minima obtained visually mainly during 1975 January by the observers

PC	Paolo Carnevali, Roma, Italy
RD	Roger Diethelm, Wetzikon, Switzerland
CD	Claude Domec, Toulouse, France
AF	Alain Figer, Paris, France
RG	Robert Germann, Wald, Switzerland
ZH	Zoltàn Hevesi, Kaposvàr, Hungary
KL	Kurt Locher, Grüt, Switzerland
NM	Nicolas Mauron, St.Rémy, France
HP	Hermann Peter, Otelfingen, Switzerland
PR	Philippe Ralincourt, Nantes, France
JR	Joseph Remis, St.Avold, France
RR	Raymond Rolland, Rennes, France
TR	Thierry Roudier, Toulouse, France

The O-C values refer to the linear elements of the GCVS 1969, disregarding improved elements in the 1971 and 1974 supplements to the GCVS. Reductions were made using the tracing paper method.

current no.	star	minimum order	JD hel 244...	O-C	n	observer
7269	RT And	I	2424.281	-0.007	11	HP
7270		I	2424.294	+0.007	8	RG
7271		I	2439.371	-0.011	7	RD
7272		I	2439.378	-0.004	6	KL
7273	UU And	I	2414.278	+0.095	10	HP
7274		I	2414.281	+0.098	5	KL
7275		I	2414.285	+0.102	6	RD
7276		I	2417.246	+0.090	6	RD
7277		I	2417.259	+0.104	5	KL
7278	XZ And	I	2425.314	-0.016	7	KL
7279		I	2433.459	-0.015	7	KL
7280	AB And	II	2422.333	+0.018	8	RG
7281		II	2426.325	+0.027	7	RG
7282		II	2427.315	+0.021	5	RG
7283		II	2428.301	+0.012	9	RD
7284		II	2428.305	+0.015	5	KL
7285		II	2433.286	+0.018	11	HP
7286		II	2439.253	+0.011	9	RG
7287		II	2439.265	+0.023	7	KL
7288	AD And	I	2439.324:	-0.020:	5	RD
7289	BL And	I	2428.295	-0.026	7	RD
7290	BX And	II	2428.289	+0.001	7	RD
7291	CN And	I	2427.267	-0.044	7	RD
7292	ADS 1693	II	2417.493	*	5	KL
7293	(A And	I	2428.360	*	10	KL
7294	S Ant	II	2433.486	0.000	8	KL
7295	CX Aqr	I	2414.280	+0.006	8	KL
7296		I	2414.282	+0.008	6	RD
7297	CZ Aqr	I	2417.258	+0.009	5	RD
7298		I	2417.259	+0.009	7	KL
7299	TT Aur	I	2439.359	-0.019	7	RD
7300		I	2439.388	+0.009	6	KL
7301		I	2429.401	+0.022	14	HP
7302	WW Aur	I	2414.347	-0.014	11	HP
7303		I	2414.351	-0.011	9	RD
7304		I	2414.352	-0.009	15	NM
7305		I	2424.454	-0.007	12	TR
7306		I	2424.456	-0.006	11	PR
7307		II	2428.260	+0.011	11	JR
7308		II	2433.299	0.000	10	KL
7309		II	2433.303	+0.004	12	HP
7310	AP Aur	I	2443.609	+0.176	8	RD
7311	AR Aur	II	2427.279:	+0.010:	8	KL
7312		I	2429.345	+0.008	8	ZH
7313		II	2431.450	+0.046	10	ZH
7314	CL Aur	I	2439.415	+0.051	9	KL
7315		I	2439.416	+0.052	8	RD
7316	Y Cam	I	2426.412	+0.074	10	KL
7317	SV Cam	I	2414.324	-0.005	9	RD
7318		I	2417.290	-0.004	7	RD

* not contained in the GCVS, O-C according to Walker's 'II' elements IBVS 855: +0.004 +0.018

current no.	star	minimum order	JD hel 244...	O - C	n	observer
7319		I	2423.233	+0.008	6	KL
7320		I	2433.299	-0.008	10	KL
7321	WY Cnc	I	2416.477	-0.004	6	RD
7322		I	2416.477	-0.004	6	KL
7323		I	2426.435	+0.002	11	HP
7324	R CMa	I	2426.419	+0.009	11	KL
7325		I	2426.422	+0.011	12	HP
7326	AK CMi	I	2443.529	+0.010	7	RD
7327	RZ Cas	I	2398.293	-0.003	6	ZH
7328		I	2410.256	+0.008	14	NM
7329		I	2411.442	-0.001	28	NM
7330		I	2416.233	+0.009	3	PC
7331		I	2417.424	+0.004	20	NM
7332		I	2423.395	0.000	10	RG
7333		I	2423.398	+0.002	8	ZH
7334		I	2423.401	+0.005	11	JR
7335		I	2423.401	+0.005	17	TR
7336		I	2423.402	+0.006	16	PR
7337		I	2423.403	+0.008	18	CD
7338		I	2429.360	-0.011	8	ZH
7339	TV Cas	I	2396.518	-0.021	16	PC
7340		I	2407.407	-0.007	16	PC
7341		I	2416.451	-0.026	12	NM
7342		I	2416.455	-0.022	6	RD
7343		I	2416.467	-0.010	6	KL
7344		I	2418.268	-0.022	16	PC
7345		I	2423.725:	-0.003:	5	KL
7346	IV Cas	I	2414.282	+0.060	6	KL
7347		I	2414.298	+0.077	8	RD
7348		I	2414.301	+0.080	9	HP
7349		I	2417.288	+0.071	7	KL
7350		I	2424.279	+0.073	11	HP
7351		I	2428.267	+0.066	6	KL
7352		I	2428.267	+0.068	8	RD
7353		I	2433.264	+0.073	10	HP
7354	K3II 5867	I	2417.496	*	10	KL
7355	(Cas	II	2418.759:	*	4	KL
7356		I	2424.512	*	5	KL
7357		I	2425.212	*	6	KL
7358	U Cep	I	2417.512	+0.027	5	KL
7359	VW Cep	II	2415.295	-0.090	10	KL
7360		II	2416.407	-0.092	7	KL
7361		II	2422.253	-0.090	16	KL
7362	XX Cep	I	2439.340	-0.035	6	KL
7363		I	2439.370	-0.004	6	RD
7364	EG Cep	I	2428.267	+0.007	6	RD
7365	GK Cep	I	2439.341	-0.050	7	RD
7366	RW Cet	I	2428.326	-0.031	5	KL
7367	TW Cet	II	2414.245	-0.025	9	KL
7368		I	2417.238	-0.042	7	KL
7369		I	2423.282	-0.018	7	KL
7370		I	2424.226	-0.024	10	KL
7371	VY Cet	I	2414.255	**	9	KL
7372		I	2417.314	**	9	KL
7373		II	2423.289	**	8	KL
7374		II	2424.314	**	12	KL
7375		II	2435.218	**	7	KL
7376	AA Cet	II	2414.203	***	10	KL
7377	RS Col	I	2439.432	****	6	KL
7378	RW Com	II	2427.556	-0.045	10	KL
7379		I	2439.544	-0.042	7	KL
7380	W Crv	I	2421.755	-0.018	4	KL
7381		II	2424.674	-0.008	10	KL
7382	ZZ Cyg	I	2419.253	-0.035	10	HP
7383		I	2419.259	-0.029	5	KL
7384	KR Cyg	I	2419.241	-0.012	8	HP
7385	V456 Cyg	II	2426.260	+0.013	6	KL
7386	V836 Cyg	I	2414.290	-0.009	8	RD
7387	FZ Del	I	2423.234	-0.001	6	KL
7388	Z Dra	I	2423.287	+0.003	6	KL
7389		I	2443.645	0.000	5	KL
7390	AI Dra	I	2415.283	-0.006	9	KL

* not contained in the GCVS, O - C according to Häussler's elements IBVS 887: +0.010 -0.012: +0.015 +0.015

** For continuity we do not change the reduction base before the end of the current apparition: O - C according to the elements of BBSAG Bull 11, page 5: -0.013 -0.021 -0.006 -0.008 -0.010. The history is as follows:

GCVS 1969 ... + .3150 E
BBSAG Bull 6, p.6 41645.390 + .34086 E This period then turned out to be somewhat too long, so that:
BBSAG Bull 11, p.5 41645.391 + .340814 E This period is still somewhat too long as judged by recent BBSAG results.
GCVS 1974 41645.390 + .3408658 E Although this period is longer than both above too long ones, we shall, as a principle of maximum attachment to the GCVS, reduce this way from the 1975-1976 apparition, beginning July.

*** not contained in the GCVS 1969, O - C according to the elements of the GCVS 1974 (hitherto referred to as Bloomer's, IBVS 745): -0.019

**** not contained in the GCVS 1969, O - C according to the elements of the GCVS

current no.	star	minimum order	JD hel 244...	O-C	n	observer
7391	BS Dra	*I	2435.312	+0.063	7	KL
7392	RU Eri	I	2414.330	+0.003	8	KL
7393		I	2414.333	+0.006	8	RD
7394		I	2433.339	+0.046	8	KL
7395	TZ Eri	I	2414.260	-0.045	13	RG
7396		I	2414.263	-0.042	9	KL
7397		I	2414.271	-0.034	10	HP
7398		I	2427.297	-0.039	9	RG
7399		I	2427.297	-0.039	8	KL
7400	WX Eri	I	2416.404	-0.004	5	KL
7401		I	2416.407	-0.001	6	RD
7402		I	2417.239	+0.008	6	RD
7403		I	2417.252	+0.020	5	KL
7404		I	2426.292	+0.005	12	HP
7405	YY Eri	I	2414.288	-0.011	7	RG
7406		I	2415.254	-0.010	13	KL
7407		II	2416.393	+0.004	7	KL
7408		I	2422.333	-0.004	6	RG
7409		I	2423.291	-0.010	7	RG
7410		I	2424.247	-0.019	10	RG
7411		I	2424.263	-0.003	14	HP
7412		II	2426.333	-0.022	7	RG
7413		II	2427.305	-0.015	6	RG
7414		I	2433.265	-0.003	10	HP
7415		II	2435.342	-0.015	7	RG
7416		I	2439.364	-0.012	13	HP
7417	AS Eri	I	2426.284	-0.006	7	RG
7418	RW Gem	I	2424.421	+0.013	10	KL
7419		I	2427.279	+0.005	10	KL
7420	TX Gem	I	2433.316	-0.009	13	HP
7421		I	2433.325	0.000	7	KL
7422	YY Gem	I	2416.399:	+0.009:	4	RD
7423	AF Gem	I	2426.287	-0.015	7	RG
7424		I	2426.289	-0.013	6	KL
7425	AY Gem	I	2439.360	-0.008	5	RD
7426		I	2439.364	-0.004	6	KL
7427	BO Gem	I	2426.303	+0.002	11	KL
7428	GW Gem	I	2443.592	-0.030	9	RD
7429	DE Hya	I	2424.360	-0.009	6	KL
7430	SW Lac	II	2417.274	-0.057	7	RD
7431		I	2422.234	-0.069	15	KL
7432		II	2426.240	-0.071	7	RG
7433		I	2439.225	-0.075	10	KL
7434	VX Lac	I	2414.274	-0.060	6	KL
7435		I	2414.278	-0.057	7	RD
7436		I	2416.422	-0.062	6	RD
7437		I	2416.423	-0.060	5	KL
7438		I	2428.250	-0.053	6	RD
7439		I	2428.258	-0.045	8	KL
7440	AU Lac	I	2416.410	-0.055	6	RD
7441		I	2416.412	-0.054	6	KL
7442	CM Lac	I	2415.300	-0.008	10	KL
7443		I	2423.323	-0.009	9	RG
7444	Y Leo	I	2428.445	+0.084	12	HP
7445		I	2433.505	+0.086	10	KL
7446	RW Leo	I	2424.571	+0.034	10	KL
7447	UV Leo	I	2417.490	-0.004	11	KL
7448		II	2443.592	-0.006	10	RD
7449	AM Leo	II	2423.738	+0.003	6	KL
7450	RS Lep	I	2426.409	-0.011	10	KL
7451		I	2439.290	-0.016	8	KL
7452	TZ Lyr	I	2424.255	+0.022	8	KL
7453	TU Mon	I	2439.405	-0.012	7	KL
7454	AO Mon	I	2433.370	-0.110	6	KL
7455	BO Mon	I	2439.497	+0.130	11	KL
7456	EQ Ori	I	2428.420	-0.065	15	HP
7457	ER Ori	I	2416.460	-0.038	6	RD
7458		I	2416.477:	-0.021:	6	KL
7459		I	2417.317	-0.028	6	RD
7460		I	2423.252	-0.021	4	KL
7461		I	2423.260	-0.012	9	RG
7462		II	2424.298	-0.033	8	RG
7463		II	2424.307	-0.024	12	HP
7464		II	2426.423	-0.025	9	HP
7465		II	2433.415	-0.018	10	HP
7466		II	2435.324	-0.015	6	RG
7467		I	2439.341	-0.021	7	KL
7468		I	2439.342	-0.020	9	RG
7469		I	2439.343	-0.019	7	RD
7470	V 392 Ori	I	2417.279	+0.024	7	RD
7471	U Peg	II	2417.274	-0.021	7	RD
7472	BY Peg	I	2402.268	+0.070	6	KL
7473		I	2403.304	+0.081	5	KL
7474		I	2414.235:	+0.070:	5	KL
7475		I	2417.312	+0.069	5	KL
7476		II	2424.306	+0.054	9	KL
7477		II	2435.272	+0.077	5	KL
7478	RT Per	I	2426.418	-0.056	10	HP
7479	XZ Per	I	2428.392	+0.003	8	HP
7480		I	2435.302	+0.003	6	KL
7481		I	2435.308	+0.009	10	HP
7482	IU Per	I	2416.420	+0.029	7	KL
7483		I	2416.427	+0.036	7	RD
7484		I	2417.274:	+0.026:	6	KL
7485		I	2417.280	+0.032	7	RD
7486	β Per	I	2424.379	-0.077	14	PR
7487		I	2424.386	-0.071	10	HP
7488		I	2424.392	-0.064	12	TR
7489		I	2427.264	-0.060	12	RG

* GCVS 1974 & 1969 elements identical except for doubling of period: minimum

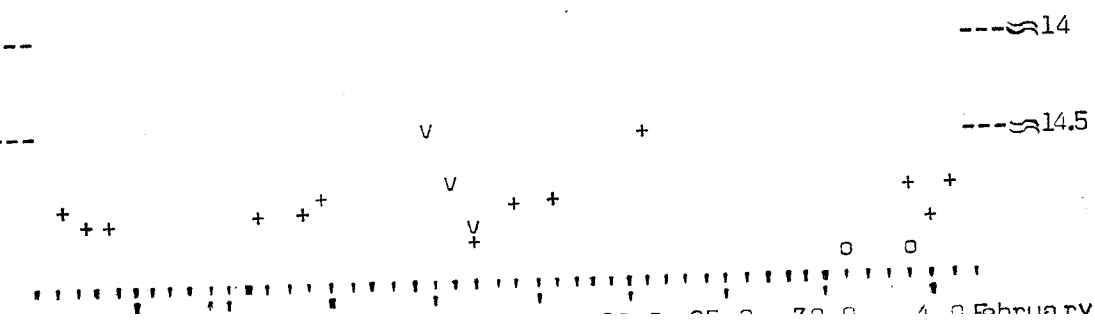
current no.	star	minimum order	JD hel 244...	O-C	n	observer
7490	Y Psc	I	2419.248	+0.134	10	HP
7491		I	2419.251	+0.137	6	KL
7492	SU Psc	I	2417.271	+0.022	9	RD
7493	UV Psc	I	2423.214	+0.025	6	KL
7494		I	2429.231	+0.014	4	KL
7495		I	2435.265	+0.021	7	KL
7496	UZ Pup	I	2417.523	-0.032	8	KL
7497		I	2433.424	-0.029	6	KL
7498		II	2439.367	-0.048	6	RD
7499		II	2439.376	-0.038	7	KL
7500	XZ Pup	I	2427.545	-0.006	11	KL
7501	AY Pup	I	2416.453	+0.053	5	RD
7502		I	2416.457	+0.058	6	KL
7503	RZ Pyx	II	2424.549	+0.171	8	KL
7504		II	2426.534	+0.187	6	KL
7505		I	2427.524	+0.194	6	KL
7506	RT Scl	I	2415.247	-0.111	12	KL
7507		I	2417.302	-0.105	5	KL
7508	RW Tau	I	2425.297	-0.072	10	KL
7509	RZ Tau	I	2439.362	+0.004	7	RD
7510	WY Tau	I	2414.351:	-0.014:	6	RD
7511	AC Tau	I	2426.474	+0.049	15	KL
7512	AH Tau	I	2433.349	-0.017	6	KL
7513		I	2439.338	-0.016	5	RD
7514	AM Tau	I	2416.436	-0.127	7	RD
7515		I	2416.438	-0.125	7	KL
7516		I	2424.620	-0.119	4	KL
7517	CD Tau	II	2428.346	-0.094	10	HP
7518	CT Tau	I	2414.295	+0.024	8	RD
7519		II	2417.296	+0.024	5	KL
7520		II	2417.297	+0.025	7	RD
7521		II	2425.296	+0.023	10	KL
7522		I	2428.287	+0.013	7	RD
7523		II	2429.306	+0.032	5	KL
7524	HU Tau	I	2375.454	+0.024		RR
7525		I	2404.244	+0.026	11	AF
7526		I	2408.343	+0.012	20	NM
7527		I	2410.391	+0.004	13	NM
7528		I	2412.452	+0.009	11	NM
7529		I	2412.459	+0.015	13	PR
7530		I	2412.462	+0.018		RR
7531		I	2414.514	+0.014	9	NM
7532	V Tri	I	2414.367:	+0.011:	6	RD
7533		I	2414.376	+0.020	7	KL
7534	X Tri	I	2413.342	-0.032	16	NM
7535		I	2414.307	-0.038	9	KL
7536		I	2414.309	-0.036	10	RD
7537		I	2414.310	-0.036	15	NM
7538		I	2414.314	-0.032	10	HP
7539		I	2415.282	-0.035	11	KL
7540		I	2417.226	-0.035	6	RD
7541	RW Tri	I	2426.292	+0.002	6	KL
7542	UX UMa	I	2424.536	+0.001	6	KL
7543		I	2426.500:	-0.001:	4	KL
7544	RU UMi	I	2417.321	-0.010	6	RD
7545		I	2439.359	-0.018	9	RD
7546		I	2443.560	-0.017	9	RD
7547	AH Vir	I	2424.584	+0.025	8	KL
7548		I	2434.756:	+0.009:	6	KL

B V 1616 Lep : Minimum lasts at least 44 days

A preliminary announcement of this extraordinary phenomenon was given in BBSAG Bull 19, page 4. Before we present a paper conclusive to some extent at the end of the current apparition in BBSAG Bull 21, the results meanwhile obtained are now given in figure 20.

J.Lienhard and K.Locher

fig. 20 night means: o Lienhard, positive photographic observations
v photographic limits of negative observations
+ Locher, visual observations



A C Tauri : Duration and Magnitude at Totality

According to the GCVS, including its 1974 extension, the photometric parameters d and m_{min} are unknown and $12^{m}.^{p}93$, respectively. Observing the minimum of JD 2442426, I obtained

d = (75 ± 10) minutes or (.025 ± .003) period

and found this to be another case (cf. BBSAG Bull 18, p.3) of overestimated photographic minimum brightness of a large amplitude EA binary. Similar arguments as mentioned there led to

$m_{v\,min}$ = 13.2 ± .2 $m_{pg\,min} \approx 14$

K. Locher

D E Hydrae : Duration and Magnitude at Totality

The photometric parameters d and m_{min} are still uncertain and unknown , respectively, acording to the GCVS, including its 1974 extension. Yet blinding by the 12^{m} star 1' apart and the lack of 14^{m} stars in the nearer surroundings render their visual (as well as photographic) determination difficult. I can only state

d < 2 hours & $m_{v\,min}$ = 14.0 ± .4

from the surveys of the minima of JD 2442035, 2442090, and 2442424, and comparison to several surrounding AAVSO sequences.

K.Locher

E Q Tauri : Translation of the previous Results to the wholly unrelated New Elements of the GCVS 1974

Only 4 minima, all by the undersigned, have hitherto been observed and published by BBSAG. As a whole they tend slightly to support the new elements, as may be seen from table 14:

table 14

BBSAG minimum no.	O	$O-C_{GCVS\ 69}$	$O-C_{GCVS\ 74}$
5503	41932.525	+0.038	-0.021
5741	41972.509	+0.043	+0.025
5742	41972.629	+0.060	-0.026
5743	41974.672	+0.047	-0.041

K.Locher

E r r a t a

VY Cet : BBSAG Bull 19, p.2: The footnote ** should read 'GCVS period erroneous' instead of 'not contained in the GCVS'.

BY Peg : BBSAG Bulletin 12, p. 3: The O-C values of the minima no.s 5712 & 5713 are miscalculated and should read 'II +0.055' and 'II +0.046' respectively.