BBSAG Bulletin 36

1978 March 6

69th List of Minima of Eclipsing Binaries

The following table lists 347 minima obtained visually mainly during December to February 1977/1978 by the observers

CA	Claudio Agnesoni, Siena, Italy
PAL	Patrice Albert, Angers, France
MBe	Mino Benucci, Firenze, Italy
RB	Roland Boninsegna, Marcinelle, Belgium
JB	Jean Bourgeois, Montignies-le-Tilleul, Belgium
ABu	Alberto Buzzoni, Ferrara, Italy
TC	Tiberio Carradori, Campli, Italy
JC	Jean-Pierre Clovin, Marcinelle, Belgium
PDa	Philippe Danthine, Montignies-sur-Sambre, Belgium
RD	Roger Diethelm, Reinach, Switzerland
JD	Jean-Luc Duquesne, Romonville, France
FF	Francesco Ferraro, Matera, Italy
MFi	Maurizio Franchini, Cerro Maggiore, Italy
MF	Michel Frangeul, Angers, France
AFr	Albert Frère, Montignies-sur-Sambre, Belgium
RG	Robert Germann, Wald, Switzerland
ZH	Zoltàn Hevesi, Kaposvàr, Hungary
RLe	Robert Leyman, Leval-Trahegnies, Belgium
KL	Kurt Locher, Grüt, Switzerland
EL	Eolo Lucentini, Caldarola, Italy
EN	Edmond Nezry, Toulouse, France
CPa	Carlo Pampaloni, Firenze, Italy
AP	Angelo del Parigi, Matera, Italy
HP	Hermann Peter, Otelfingen, Switzerland
RP	Rolf Piazza, Wernetshausen, Switzerland
CP	Cosimo Plasmati, Matera, Italy
EP	Ennio Poretti, Arconate, Italy
PR	Philippe Rolincourt, Nantes, France
JR	Joseph Remis, Aix-en-Provence, France
AR	Alain Royer, Epinac, France
GT	Gilles Troispoux, Fleury-les-Aubrais, France
FV	Francesco Vespe, Matera, Italy
NZ	Nicola Zaccaria, Pisa, Italy

The O-C values refer to the linear elements of the GCVS 1969, disregarding improved elements in the 1971, 1974, and 1976 supplements to the GCVS. Reductions were made mainly using the tracing paper method.

(footnotes to page 2 :)

* GCVS 1969 period erroneous, O-C according to the GCVS 1976: -0.002 -0.004 +0.009

** not contained in the GCVS 1969, O-C according to the GCVS 1974: +0.001: -0.006 -0.005 +0.001: +0.002 -0.002 -0.001 -0.002

*** no period given by the GCVS, O-C according to the elements of BBSAG Bulletin 27, page 7: +0.024 +0.031 +0.031

current no.	star	minimum order	JD hel 244...	O-C	n	observer
12216	RT And	I	3480.257	-0.006	8	HP
12217		I	3488.480	-0.009	8	HP
12218		I	3495.337	-0.020	9	RG
12219		I	3524.270	-0.017	10	RG
12220	UU And	I	3481.460	+0.121	8	KL
12221	XZ And	I	3447.349	-0.025	11	AR
12222		I	3481.276	-0.030	10	JB
12223		I	3481.282	-0.025	8	RG
12224		I	3485.345	-0.033	10	KL
12225		I	3485.347	-0.031	7	HP
12226		I	3500.270	-0.030	10	KL
12227		I	3530.282	-0.031	7	KL
12228	AB And	I	3481.246	+0.032	7	RG
12229		I	3483.231	+0.025	7	RG
12230		II	3495.341	+0.021	9	RG
12231		II	3500.310	+0.020	8	RG
12232		II	3517.250	+0.025	7	RG
12233		I	3544.289	+0.016	7	RG
12234		I	3552.263	+0.024	7	RG
12235	BL And	I	3508.255	-0.002	8	HP
12236	BX And	I	3446.286	+0.020	11	AR
12237		II	3456.338	+0.006	7	AR
12238		I	3457.261	+0.013	9	AR
12239		I	3488.361	-0.002	7	HP
12240		I	3510.339	+0.011	8	HP
12241	EP And	II	3514.415	*	11	KL
12242		I	3515.424	*	7	KL
12243		II	3544.330	*	11	KL
12244	CX Aqr	I	3447.309	+0.015	12	AR
12245		I	3457.319	+0.017	12	AR
12246	OO Aql	II	3410.330	-0.051	10	EN
12247		II	3447.233	-0.036	6	AR
12248		II	3450.273	-0.036	13	EN
12249		II	3453.304	-0.045	13	EN
12250		II	3456.349	-0.042	9	AR
12251		II	3487.260	-0.045	15	EN
12252	V 346 Aql	I	3446.251:	-0.031:	9	AR
12253		I	3457.310	-0.036	8	AR
12254		I	3498.268	-0.014	11	RG
12255	RY Aur	I	3492.339	-0.002	7	KL
12256		I	3492.343	+0.002	5	HP
12257		I	3552.291	-0.009	7	KL
12258	TT Aur	I	3504.246	+0.014	11	EP
12259		I	3512.241	+0.012	11	EP
12260		I	3516.237	+0.010	10	EP
12261	WW Aur	II	3458.450	-0.007	42	TC
12262		I	3482.451	+0.005	11	MBe
12263		I	3482.457	+0.012	15	EP
12264		II	3506.439	+0.007	18	PR
12265		I	3510.227	+0.008	14	EP
12266		I	3515.275	+0.005	13	EP
12267		I	3515.284	+0.014	9	NZ
12268		I	3515.285	+0.015	7	CPa
12269		II	3544.313	+0.006	22	EP
12270	AR Aur	I	3471.293:	+0.022:	15	NZ
12271		I	3479.564	+0.024	31	RLe
12272		I	3504.350	+0.002	18	CA
12273		I	3504.352	+0.004	12	CPa
12274		I	3504.353	+0.005	19	EP
12275		I	3504.357	+0.008	26	MBe
12276		I	3504.366	+0.018	10	HP
12277		II	3506.433	+0.018	19	PR
12278		I	3508.409	+0.007	18	EP
12279		II	3531.240	+0.016	8	RG
12280	CL Aur	I	3488.402	+0.038	8	HP
12281		I	3544.396	+0.036	9	HP
12282		I	3544.407	+0.046	7	KL
12283	HL Aur	I	3496.677	+0.003	8	RD
12284		I	3510.370	+0.001	7	HP
12285	LY Aur	I	3504.235:	**	11	EP
12286		II	3510.231	**	13	EP
12287		I	3512.234	**	12	EP
12288		II	3514.241:	**	8	EP
12289		I	3516.243	**	9	EP
12290		II	3534.250	**	11	EP
12291		I	3536.252	**	14	EP
12292		I	3544.257	**	11	EP
12293	TU Boo	I	3560.438	+0.006	7	KL
12294	Y Cam	I	3517.281	+0.120	12	RG
12295	SV Cam	I	3488.365	-0.017	6	RG
12296		I	3500.231	-0.013	10	RG
12297		I	3504.388	-0.007	8	HP
12298		I	3507.359	-0.001	8	HP
12299		I	3510.318	-0.008	7	HP
12300		I	3540.279	-0.003	8	HP
12301	TU Cnc	I	3552.336	-0.005	6	KL
12302	WY Cnc	I	3544.431	+0.006	6	HP
12303	YZ CVn	I	3495.626	***	14	KL
12304		I	3542.653	***	11	KL
12305		I	3560.514	***	10	KL
12306	R CMa	I	3512.379:	+0.012:	8	EP
12307		I	3513.513	+0.009	11	CPa
12308	TU CMa	I	3514.437	+0.001	9	HP
12309	AK CMi	I	3481.389	+0.018	10	KL
12310		I	3496.658	+0.008	8	RD
12311		I	3515.345	+0.020	6	KL
12312	RZ Cas	I	3396.335	+0.009	14	MFi
12313		I	3402.309:	+0.006	8	MFi
12314		I	3427.402	-0.001	19	PR
12315		I	3445.325	-0.007	8	AR
12316		I	3445.334	+0.002	28	PR
12317		I	3451.316	+0.008	24	FF
12318		I	3451.318	+0.010	26	AP
12319		I	3451.321	+0.013	21	EL
12320		I	3451.325	+0.017	39	FV
12321		I	3457.283	-0.001	12	AR
12322		I	3457.291	+0.007	16	CP
12323		I	3457.293	+0.009	26	FF

* ** *** see preceeding page

current no.	star	minimum order	JD hel 244...	O-C	n	observer
12324		I	3457.295	+0.011	28	AP
12325		I	3458.483:	+0.004:	40	TC
12326		I	3458.488	+0.008	13	GT
12327		I	3463.261	+0.001	15	PDa
12328		I	3463.265	+0.005	16	JC
12329		I	3463.271	+0.010	7	AFr
12330		I	3464.462	+0.006	29	MB
12331		I	3482.385	+0.001	15	RB
12332		I	3482.387	+0.002	10	JC
12333		I	3482.388	+0.003	14	PDa
12334		I	3482.389	+0.004	17	EP
12335		I	3482.389	+0.004	23	MBe
12336		I	3482.389	+0.005	12	RLe
12337		I	3482.390	+0.006	18	CPa
12338		I	3488.358	-0.003	9	HP
12339		I	3488.359	-0.002	7	RG
12340		I	3488.370	+0.009	15	EN
12341		I	3494.336	-0.001	27	TC
12342		I	3494.340	+0.003	17	CPa
12343		I	3494.340	+0.003	14	EP
12344		I	3494.342	+0.005	21	MBe
12345		I	3494.343	+0.006	15	EN
12346		I	3494.344	+0.007	10	MF
12347		I	3494.347	+0.010	16	MFi
12348		I	3495.533	+0.001	36	JD
12349		I	3495.533	+0.001	15	EN
12350		I	3495.542	+0.010	11	MFi
12351		I	3500.310	-0.003	10	RG
12352		I	3506.288	-0.002	11	KL
12353		I	3512.269	+0.004	12	EP
12354		I	3513.465	+0.004	13	EP
12355		I	3531.393	+0.003	23	JD
12356		I	3537.364	-0.001	9	JR
12357		I	3555.294	-0.001	7	RG
12358		I	3555.302:	+0.007:	6	EP
12359	TV Cas	I	3453.289	-0.006	6	CPa
12360		I	3462.349	-0.005	12	CPa
12361		I	3462.353	0.000	8	AB
12362		I	3471.413	-0.003	12	CPa
12363		I	3480.456	-0.024	9	HP
12364		I	3482.284	-0.008	12	RB
12365		I	3482.290	-0.002	22	CPa
12366		I	3531.224	-0.009	8	RG
12367		I	3540.323	+0.027	15	CPa
12368	AB Cas	I	3492.214	+0.003	10	KL
12369		I	3552.355	+0.001	10	KL
12370	OR Cas	I	3510.298	+0.029	8	HP
12371	V523 Cas	I	3506.267	*	7	KL
12372		II	3532.305	*	6	KL
12373		II	3544.242	*	6	KL
12374	U Cep	I	3509.482	+0.045	10	HP
12375		I	3514.461	+0.038	6	KL
12376		I	3544.371	+0.032	8	HP
12377		I	3544.382	+0.043	10	KL
12378		I	3549.366	+0.041	7	KL
12379	WW Cep	I	3509.335	-0.040	7	HP
12380	EG Cep	I	3508.264	+0.022	9	HP
12381		I	3510.428	+0.008	9	HP
12382	GI Cep	I	3509.290	+0.001	9	HP
12383	GK Cep	II	3488.314	-0.057	15	NZ
12384		II	3517.327	-0.065	28	CPa
12385	SS Cet	I	3480.329	-0.049	8	HP
12386		I	3480.331	-0.047	8	KL
12387		I	3483.298	-0.054	15	RG
12388	TW Cet	II	3483.307	-0.024	10	RG
12389		I	3488.226	-0.016	7	RG
12390		II	3515.305	-0.028	6	KL
12391	VY Cet	II	3488.311	**	10	KL
12392		II	3515.229	**	11	KL
12393		II	3517.272	**	4	KL
12394	AA Cet	I	3500.226	***	11	KL
12395		I	3515.238	***	10	KL
12396	RW Com	I	3560.368	-0.041	9	RG
12397	W Crv	I	3514.600	-0.007	10	KL
12398	V Crt	I	3481.676	+0.033	5	KL
12399	Y Cyg	II	3486.428	+0.061	18	PR
12400		II	3427.391	+0.050	25	PR
12401		II	3445.363	+0.044	17	PR
12402	ZZ Cyg	I	3488.359	-0.035	6	KL
12403		I	3504.253	-0.029	9	HP
12404	DO Cyg	I	3485.313	-0.024	6	HP
12405	Z Dra	I	3488.732	+0.003	11	KL
12406	RZ Dra	I	3481.247	-0.021	7	RG
12407	AI Dra	I	3416.322:	+0.024:	14	PR
12408		I	3446.274	+0.006	9	AR
12409		I	3458.266	+0.009	6	AR
12410		I	3482.240	+0.007	16	JB
12411		I	3482.250	+0.016	7	RB
12412		I	3500.224	+0.009	7	KL
12413	S Equ	I	3483.253	+0.013	13	RG
12414	RU Eri	I	3507.428	+0.031	9	HP
12415		I	3514.392	+0.041	10	HP

* not contained in the GCVS 1969, O-C according to the GCVS 1976: +0.003 -0.016 +0.003

** GCVS 1969 period erroneous, O-C according to the GCVS 1976: -0.012 -0.018 -0.020

*** not contained in the GCVS 1969, O-C according to the GCVS 1974: -0.015 -0.016

current no.	star	minimum order	JD hel 244...	O-C	n	observer
12416	YY Eri	I	3492.262	-0.014	7	RG
12417		II	3495.312	-0.018	7	RG
12418		II	3504.329	-0.003	7	HP
12419		II	3510.429	-0.011	8	HP
12420		I	3536.303	-0.018	7	RG
12421		I	3555.270	-0.020	6	RG
12422		II	3568.287	-0.023	6	RG
12423	BL Eri		3515.315:	*	6	KL
12424			3544.297	*	11	KL
12425	RW Gem	I	3510.430	-0.002	11	KL
12426		I	3510.435	+0.003	11	HP
12427	YY Gem	II	3510.363:	-0.017:	7	RD
12428	AF Gem	I	3514.354	-0.014	9	HP
12429		I	3514.356	-0.012	8	KL
12430	GW Gem	I	3496.716:	-0.039:	9	RD
12440	SZ Her	I	3447.324	+0.030	10	AR
12441		I	3456.324	+0.031	11	AR
12442	TX Her	I	3417.350	-0.004	22	EL
12443	RX Hya	I	3495.611	+0.035	13	KL
12444	VW Hya	I	3401.702	-0.136	8	KL
12445	VY Hya	I	3513.510	-0.014	7	KL
12446	WY Hya	I	3542.410	+0.015	5	KL
12447	CU Hya	I	3568.354	+0.096	7	KL
12448	SW Lac	I	3401.246	-0.100	7	RG
12449		II	3403.320	-0.103	7	RG
12450		I	3495.350	-0.109	7	RG
12451		I	3498.243	-0.102	7	RG
12452		II	3500.332	-0.107	8	RG
12453		I	3504.326	-0.113	7	HP
12454		I	3531.360	-0.120	9	RG
12455		II	3536.235	-0.116	5	RP
12456		II	3536.247	-0.104	6	RG
12457		II	3552.271	-0.117	7	RG
12458	VX Lac	I	3510.262	-0.067	9	HP
12459	CM Lac	I	3495.258	-0.088	10	RG
12460	UV Leo	II	3513.543	-0.007	7	KL
12461	BL Leo	I	3568.412	+0.010	7	KL
12462	RY Lyn	I	3401.521	**	6	KL
12463		I	3510.234	**	7	KL
12464		I	3553.285	**	7	KL
12465	SX Lyn	I	3534.240	-0.323	6	KL
12466		I	3536.275	-0.310	10	RG
12467		I	3544.359	-0.317	8	RG
12468		I	3544.365	-0.311	6	KL
12469		I	3544.367	-0.309	9	HP
12470	UU Lyn	I	3510.412	-0.010	9	HP
12471	β Lyr	I	3453.81	***	10	RG
12472	RW Mon	I	3506.366	-0.001	6	KL
12473		I	3544.486	-0.003	5	KL
12474		I	3544.488	-0.001	10	HP
12475	TV Mon	I	3401.481	-0.015	10	KL
12476	BO Mon	I	3498.697	+0.146	10	KL
12477	V 453 Mon	II	3496.658	-0.027	6	RD
12478	V 508 Oph	I	3542.707	+0.014	7	KL
12479	EQ Ori	I	3514.465	-0.075	8	HP
12480		I	3514.465	-0.074	6	KL
12481		I	3549.383	-0.073	5	KL
12482	ER Ori	I	3495.312	-0.012	7	RG
12483		II	3504.409	-0.010	7	HP
12484		I	3513.512	-0.010	10	KL
12485		II	3515.411	-0.024	8	HP
12486		II	3524.308	-0.018	11	RG
12487		II	3568.322	-0.033	7	RG
12488	OS Ori	I	3510.521	-0.024	8	KL
12489		I	3515.284	-0.027	7	KL
12490	V 343 Ori	I	3510.365	****	9	RD
12491	V 640 Ori	I	3519.400	-0.015	11	KL
12492	TY Peg	I	3488.342	-0.035	10	HP
12493	BN Peg	I	3500.210	-0.285	6	KL
12494	BY Peg	II	3510.307	+0.072	6	KL
12495	DI Peg	I	3495.244	-0.019	9	RG
12496		I	3517.318	-0.023	10	~~KL~~ RG
12497	Z Per	I	3492.318	+0.019	8	KL
12498		I	3492.322	+0.024	8	HP
12499	RT Per	I	3504.313	-0.059	9	HP
12500		I	3509.406	-0.062	7	HP
12501		I	3515.340	-0.066	6	HP
12502		I	3549.331	-0.059	10	KL
12503		I	3555.287	-0.049	7	KL
12504	ST Per	I	3485.314	-0.015	8	HP
12505	WY Per	I	3480.379	-0.040	6	KL
12506		I	3510.346	-0.017	8	RD
12507	XZ Per	I	3506.328	+0.011	8	KL
12508		I	3514.391	+0.012	9	HP
12509		I	3544.328	+0.006	7	HP
12510		I	3544.331	+0.010	6	KL
12511	DM Per	I	3505.229	+0.006	6	ZH
12512	KW Per	I	3514.392	+0.037	10	KL
12513		I	3514.405	+0.050	7	HP
12514		I	3515.350	+0.064	9	HP

* see page 6 of this issue

** no period given by the GCVS, O-C according to the elements of Samolyk and Wedemayer, JAAVSO preprint 1977: -0.003 +0.010 +0.011

*** Because the O-C according to the linear elements exceeds one whole period, the quadratic term is exceptionally included to get -0.02

**** GCVS 1969 period erroneous, O-C according to the GCVS 1976: +0.039

current no.	star	minimum order	JD hel 244...	O - C	n	observer
*12431	β Per	I	3479.575	-0.001	32	RLe
*12432		I	3402.439	-0.004	11	EP
*12433		I	3405.291	-0.100	12	RG
*12434		I	3405.306	-0.004	11	HP
*12435	RV Psc	I	3405.314	**	6	HP
*12436	SX Psc	I	3492.356	-0.022	9	HP
*12437	UZ Pup	I	3513.605	-0.054	10	KL
*12438		I	3549.370	-0.056	6	KL
*12439	XZ Pup	I	3510.574	-0.014	7	KL
12515	AY Pup	I	3495.532	+0.056	12	KL
12516		I	3510.540	+0.065	6	KL
12517		II	3513.591	+0.060	11	KL
12518	RZ Pyx	II	3495.594	+0.104	11	KL
12519		II	3560.452	+0.196	8	KL
12520	AC Tau	I	3507.430	+0.073	12	HP
12521		I	3509.473	+0.073	10	HP
12522	AP Tau	I	3510.332	***	11	KL
12523	BN Tau	I	3492.326	+0.010	12	KL
12524	ES Tau	I	3510.544	+0.026	7	KL
12525	IL Tau	I	3515.409	****	10	KL
12526	HU Tau	I	3467.326:	+0.002:	29	MBe
12527		I	3471.443	+0.007	31	MBe
12528		I	3471.444	+0.008		CPa
12529		I	3504.332:	-0.005:	19	EP
12530		I	3504.345	+0.008	11	CPa
12531		I	3504.356	+0.019	26	MBe
12532		I	3506.414:	+0.021:	19	PR
12533		I	3500.459	+0.010	22	EP
12534		I	3510.497	-0.009	14	CPa
12535		I	3510.506	0.000	19	EP
12536	V Tri	I	3405.302	+0.021	8	HP
12537		I	3492.325	+0.021	10	HP
12538		I	3510.454	+0.009	10	KL
12539	X Tri	I	3504.372	-0.039	8	HP
12540		I	3506.316	-0.039	10	KL
12541		I	3508.258	-0.040	6	HP
12542		I	3510.205	-0.036	5	KL
12543	RV Tri	I	3509.290	-0.016	7	HP
12544		I	3515.310	-0.016	8	HP
12545		I	3552.250	-0.015	10	KL
12546		I	3555.257	-0.022	11	KL
12547	RW Tri	I	3401.359	-0.001	6	KL
12548		I	3408.316	-0.001	5	KL
12549	K3II 5959 Tri	I	3510.350	*****	8	RD
12550	TX UMa	I	3466.534	0.000	10	MFi
12551		I	3509.412	-0.008	9	HP
12552		I	3512.477	-0.006	13	EP
12553		I	3552.295	-0.010	9	RG
12554		I	3555.362	-0.006	10	HP
12555	XZ UMa	I	3534.346	-0.064	5	KL
12556	RU UMi	I	3458.251	-0.009	6	AR
12557	UW Vir	I	3510.646	+0.287	11	KL
12558	BF Vir	I	3566.708	-0.010	7	KL
12559	BU Vul	I	3408.252	+0.008	7	HP
12560		I	3408.221	+0.012	7	KL
12561		I	3509.266	+0.004	7	HP
12562		I	3517.233	+0.005	11	KL

(* numbers inadvertently skipped over on page 4)

** GCVS 1969 period erroneous, O - C according to the GCVS 1976: -0.007

*** GCVS 1969 elements incomplete, O - C according to the GCVS 1976: -0.074

**** no period given by the GCVS 1969, O - C according to the GCVS 1974 : +0.011

***** period unknown

E r r a t a

star concerned	bulletin no.	minimum no.	misprinted entry	misprinted value	correct value
RZ Cas	32	11210	O	3200.304	3200.308
			O - C	-0.002	+0.002
	34	11654	O	3176.302	3182.301
			O - C	+0.020	+0.004
	35	11913	O - C	-0.007	-0.002
		11925	observer	CP	CPa
AI Dra	32	11237	O	3200.505	3200.508
			O - C	-0.007	-0.004

A Reinterpretation of BL Eridani

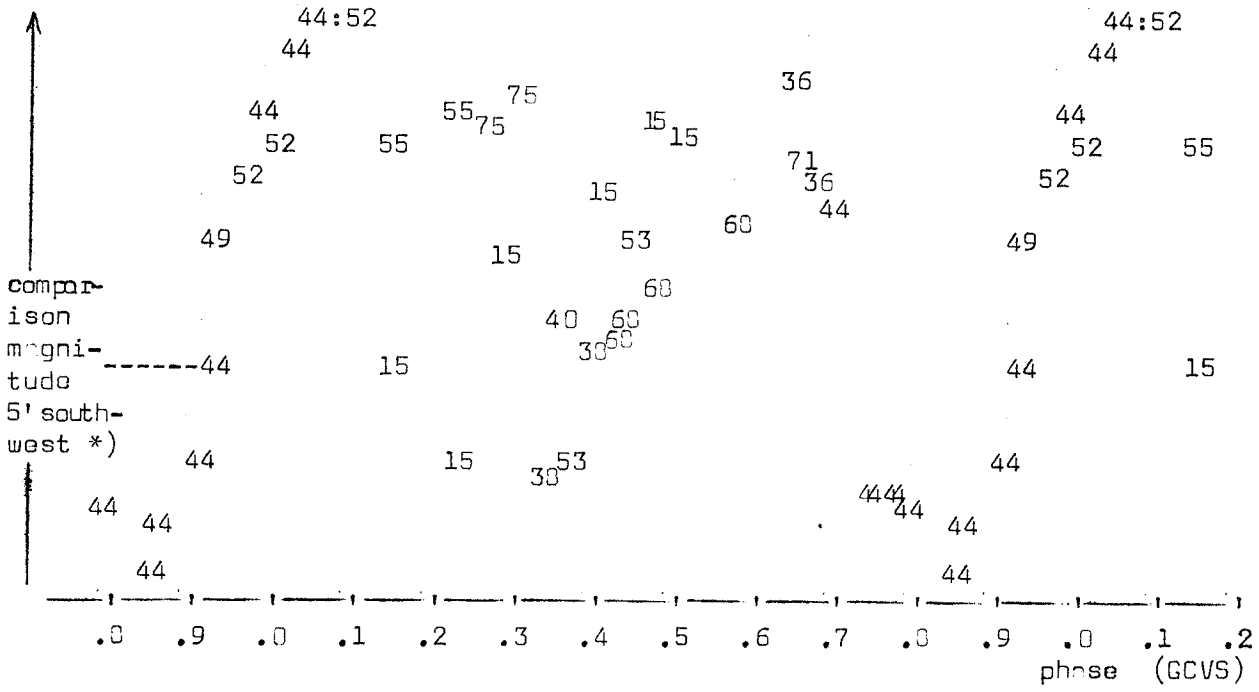
The GCVS gives the period of this EW binary to only 4 digits as $0^d.4162$. My attempt to improve it has yielded even this 3rd and 4th digit to be wrong. To show that

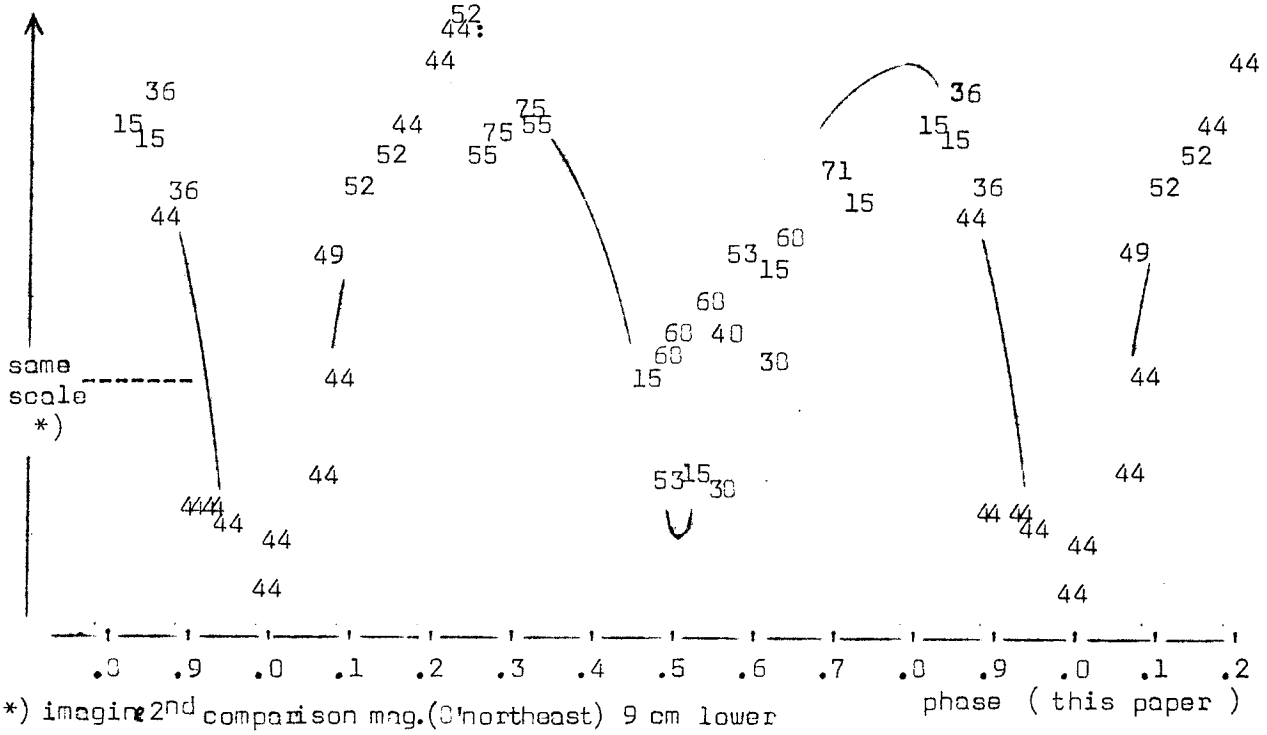
$$2443544.297 + .4171\ E$$

are distinctly better elements, I plot in figure 30 once versus the phase according to the GCVS and once versus the new phase. Plot symbols are given as 2-digit-numbers denoting the final digits of the integer Julian date of the observation night, which all lie in the interval 2443515...2443575.

K.Locher

Figure 30





*) image 2nd comparison mag.(3'northeast) 9 cm lower