

BAV-Results of Observations

JOACHIM HÜBSCHER^{1,5}, **HANS-MEREYNTJE STEINBACH**^{2,5}, **FRANK VOHLA**^{3,5},
FRANK WALTER^{4,5}

- 1) Berlin, Germany, joachim.huebscher@arcor.de
 2) Neu-Anspach, Germany
 3) Altenburg, Germany
 4) München, Germany
 5) Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV),
 Munsterdamm 90, 12169 Berlin, Germany, zentrale@bav-astro.de

BAV-Mitteilungen No. 204

Abstract: This 64th compilation contains the results of visual and photographic observations of BAV-members from the years 2008 and 2009. Here we publish altogether 193 minima and maxima of 130 eclipsing binaries and pulsating stars. The data were acquired by 13 observers.

We introduce 9 minima timings from 9 eclipsing binaries, 5 maxima from 3 RR-Lyrae-stars, 11 maxima from 11 cepheids, 90 maxima and minima from 73 mirastars, 70 maxima and minima from 34 semiregular, longperiod and RV-Tauri-stars. The results were acquired by 12 observers in Germany and one in Austria in the years 2008 and 2009.

This paper contains only unpublished observations. All the lightcurves with evaluations can be obtained from the office of the BAV for inspection.

Section 1 Eclipsing binaries, RR-Lyrae-stars and Cepheids**Explanation to the main tables 1 to 3**

columns 1 & 2 object designation from the GCVS,
 column 3 heliocentric julian date of observed minima or maxima (Jd_{hel} – 2400 000)
 column 4 mark (:) if uncertain
 column 5 identification of primary (I) or secondary (II) minimum for eclipsing binaries
 column 6 mark “vis” for visual observations, “F” for photographic observations
 column 7 observer
 column 8 (O-C)
 column 9 source of elements (elements see section 1, table 4)
 column 10 number of measurements
 column 11 remarks

Explanation to the main table 4

columns 1 & 2 object designation from the GCVS,
 column 3 epoch
 column 4 period
 column 5 BIB-code or link

Table 1 – Eclipsing Binaries

CQ	Aur	545671.515	I F	Frank, P.	-0.701	GCVS 1985	42
RZ	Cas	53093.418	I vis	Proksch, W.	0.052	GCVS 1985	31
TV	Cas	54506.451	I vis	Stein, P.	-0.025	GCVS 1985	21
BV	Dra	54390.317	I vis	Stein, P.	-0.010	GCVS 2007	10

Table 1 – Eclipsing Binaries (cont.)

U	Oph	54709.390	I vis	Stein, P.	-0.031	GCVS 1985	12
V505	Per	54652.489	I vis	Rätz, K.	0.000	IBVS 3479	23
beta	Per	54395.468	I vis	Schubert, M.	0.074	GCVS 1987	24
U	Sge	54709.385	I vis	Stein, P.	0.009	GCVS 1987	14
lambda	Tau	54387.453	I vis	Stein, P.	-0.017	GCVS 2007	8

Table 2 – RR-Lyrae-Stars

SW	And	54709.426	I vis	Zimmermann, T.	0.022	A&A 476.307	29
TW	Boo	54932.426	I vis	Zimmermann, T.	-0.005	A&A 476.307	31
RR	Lyr	54695.504	I vis	Stein, P.	0.015	AC 1205.4	180
		54920.544	I vis	Strüver, H.	0.022	AC 1205.4	8
		54933.577	I vis	Strüver, H.	0.018	AC 1205.4	9

Table 3 – Cepheids

RW	Cam	54379.60	I vis	Kriebel, W.	1.20	GCVS 1985	59) normal maxima
SW	Cas	54600.43	I vis	Kriebel, W.	-0.15	GCVS 1985	52)
CD	Cas	54599.94	I vis	Kriebel, W.	1.22	GCVS 2007	53)
CY	Cas	54655.62	I vis	Kriebel, W.	1.15	GCVS 1985	55)
RZ	Gem	54828.98	I vis	Kriebel, W.	-0.66	GCVS 1985	49)
AP	Her	54656.20	I vis	Kriebel, W.	-4.70	GCVS 1985	48)
SV	Mon	54854.71	I vis	Kriebel, W.	1.37	GCVS 1985	53)
CV	Mon	54816.02	I vis	Kriebel, W.	-0.47	GCVS 2007	35)
RS	Ori	54829.45	I vis	Kriebel, W.	0.02	GCVS 1985	38)
CS	Ori	54829.54	I vis	Kriebel, W.	-0.88	GCVS 1985	38)
BM	Per	54746.65	I vis	Kriebel, W.	4.12	GCVS 1987	68)

Table 4 – Elements

SW	And	54093.3336	0.44226187	2007A&A	476	307L
CQ	Aur	29558.728	10.621943	1998GCVS4	C	0K
TW	Boo	53918.457	0.53226977	2007A&A	476	307L
RW	Cam	37389.57	16.41437	1998GCVS4	C	0K
RZ	Cas	43200.3063	1.195247	1998GCVS4	C	0K
SW	Cas	42989.59	5.44095	1998GCVS4	C	0K
TV	Cas	44602.4534	1.8125956	1998GCVS4	C	0K
CD	Cas	37023.312	7.80089	www.sai.msu.ru/groups/cluster/gcvs/		
CY	Cas	40119.466	14.37686	1998GCVS4	C	0K
BV	Dra	44474.327	0.3500671	www.sai.msu.ru/groups/cluster/gcvs/		
RZ	Gem	42714.97	5.529286	1998GCVS4	C	0K
AP	Her	43745.347	10.4156	www.sai.msu.ru/groups/cluster/gcvs/		
RR	Lyr	38215.9492	0.56683313	1982ATsir1205		4R
SV	Mon	43794.338	15.23278	1998GCVS4	C	0K
CV	Mon	42773.136	5.378898	www.sai.msu.ru/groups/cluster/gcvs/		
U	Oph	44416.3864	1.67734617	1998GCVS4	C	0K
RS	Ori	42820.794	7.566881	1998GCVS4	C	0K
CS	Ori	37258.156	3.88939	1998GCVS4	C	0K
BM	Per	35784.26	22.9519	1998GCVS4	C	0K
V505	Per	47863.4858	4.222017	1990IBVS	3479	1W
beta	Per	45641.5135	2.8673043	1998GCVS4	C	0K
U	Sge	17130.4114	3.38061933	1998GCVS4	C	0K
lambda	Tau	21506.8506	3.9529478	www.sai.msu.ru/groups/cluster/gcvs/		

Section 2 Mirastars, Semiregular, Longperiod, RV-Tauri-Stars and Eruptive Variables**Explanation to the main tables 5 to 6**

column 1	object designation from the GCVS,
column 2	identification of minimum (Min) or Maximum (Max)
column 3	heliocentric julian date of observed minima or maxima (JDhel – 2400 000)
column 4	mark (:) if uncertain
column 5	mark “vis” for visual observations, “ccd” for CCD-observations
column 6	Magnitude, using the Harvard-System (AAVSO-charts)
column 7	observer
column 8	number of measurements
column 9	remarks

Table 5 – Mirastars

R	And	Max	54655	vis	7.25	Winkler, R.	25
		Max	54662	: vis	6.9	Neumann, J.	11
W	And	Min	54841	vis	13.6	Marx, H.	15
TU	And	Min	54806	vis	13.2	Marx, H.	12
YZ	And	Max	54711	vis	10.5	Marx, H.	9
T	Aqr	Max	54664	: vis	7.5	Neumann, J.	8
RT	Aql	Max	54755	vis	8.7	Marx, H.	10
RU	Aql	Min	54726	vis	14.5	Marx, H.	13
RV	Aql	Min	54760	vis	14.6	Marx, H.	10
SV	Aql	Max	54777	vis	11.5	Marx, H.	9
QZ	Aql	Max	54729	vis	11.2	Marx, H.	8
R	Aur	Max	54495	vis	7.2	Winkler, R.	19
		Max	54937	vis	6.8	Neumann, J.	12
RR	Aur	Max	54834	vis	9.2	Marx, H.	10
RU	Aur	Max	54793	vis	9.1	Marx, H.	11
R	Boo	Max	54593	vis	7.1	Neumann, J.	10
		Max	54600	vis	7.3	Schubert, M.	18
S	Boo	Min	54645	vis	13.5	Marx, H.	10
RR	Boo	Min	54636	vis	14.1	Marx, H.	10
RT	Boo	Min	54755	vis	13.6	Marx, H.	10
X	Cam	Min	54657	vis	13.0	Marx, H.	8
		Max	54732	vis	8.2	Marx, H.	10
		Min	54808	vis	13.9	Marx, H.	9
		Max	54870	vis	8.3	Marx, H.	12
R	CMi	Max	54830	vis	7.9	Neumann, J.	11
S	CMi	Max	54843	vis	7.5	Neumann, J.	12
R	Cas	Max	54831	vis	5.65	Winkler, R.	210
		Max	54833	: vis	5.8	Neumann, J.	13
T	Cas	Max	54642	vis	7.7	Winkler, R.	17
V	Cas	Max	54651	vis	7.8	Winkler, R.	17
		Max	54881	vis	7.0	Winkler, R.	14
WY	Cas	Max	54850	vis	8.5	Neumann, J.	10
S	Cep	Max	54908	vis	6.8	Neumann, J.	23
T	Cep	Min	54648	vis	10.4	Marx, H.	12
		Max	54846	vis	5.4	Neumann, J.	29
AB	Cep	Max	54780	vis	10.5	Marx, H.	11
X	Cet	Min	54830	vis	12.5	Marx, H.	11
S	CrB	Max	54728	: vis	6.3	Neumann, J.	7
		Max	54733	vis	7.0	Winkler, R.	21
X	CrB	Min	54688	vis	13.9	Marx, H.	11
R	Cyg	Max	54807	: vis	6.6	Neumann, J.	14
		Max	54817	vis	7.05	Winkler, R.	18

Table 5 – Mirastars (cont.)

Z	Cyg	Max	54616	vis	7.6	Neumann, J.	11
		Min	54801	vis	13.6	Marx, H.	17
RT	Cyg	Max	54647	vis	7.0	Winkler, R.	16
		Max	54657	vis	6.7	Rätz, K.	19
chi	Cyg	Max	54783	vis	4.0	Winkler, R.	20
RU	Del	Max	54784	vis	11.4	Marx, H.	12
SS	Del	Max	54803	vis	12.5	Marx, H.	7
R	Dra	Max	54625	vis	7.4	Winkler, R.	19
		Max	54630	vis	7.2	Schubert, M.	21
		Max	54867	: vis	7.9 :	Winkler, R.	13
W	Dra	Min	54735	vis	14.5	Marx, H.	13
		Max	54854	vis	9.1	Marx, H.	14
X	Dra	Max	54738	vis	11.2	Marx, H.	12
Y	Dra	Max	54587	vis	9.3	Marx, H.	9
RV	Dra	Max	54617	vis	10.1	Marx, H.	11
ZZ	Dra	Max	54632	vis	10.2	Marx, H.	11
T	Her	Max	54671	: vis	7.4	Rätz, K.	12
RV	Her	Max	54633	vis	9.9	Marx, H.	11
RY	Her	Max	54714	vis	9.2	Marx, H.	11
SY	Her	Min	54635	vis	12.6	Marx, H.	9
		Max	54690	: vis	8.6	Neumann, J.	10
WZ	Her	Max	54790	vis	12.0	Marx, H.	8
AS	Her	Max	54681	vis	8.6	Marx, H.	11
CF	Her	Max	54632	vis	10.0	Marx, H.	11
DS	Her	Max	54665	vis	10.5	Marx, H.	9
FU	Her	Max	54767	vis	11.8	Marx, H.	8
R	Leo	Max	54782	vis	5.7	Hoffmann, P.	12
		Max	54811	: vis	6.1 :	Neumann, J.	15
S	Lyr	Max	54717	vis	12.3	Marx, H.	13
W	Lyr	Max	54728	vis	8.1	Winkler, R.	17
RU	Lyr	Max	54707	vis	10.3	Marx, H.	9
VZ	Lyr	Max	54749	vis	10.6	Marx, H.	10
R	Oph	Max	54629	vis	7.0	Neumann, J.	11
SS	Oph	Min	54708	vis	14.4	Marx, H.	11
U	Ori	Max	54505	vis	6.7	Winkler, R.	19
		Max	54895	vis	7.1	Winkler, R.	22
RR	Ori	Max	54840	vis	9.6	Marx, H.	11
X	Peg	Max	54711	vis	9.9	Marx, H.	12
FF	Peg	Max	54780	vis	10.7	Marx, H.	11
RX	Per	Max	54802	vis	10.7	Marx, H.	11
RX	Psc	Max	54860	vis	10.5	Marx, H.	10
W	Sge	Max	54730	vis	10.4	Marx, H.	12
Z	Tau	Max	54837	vis	10.3	Marx, H.	9
R	Tri	Max	54809	vis	6.0	Winkler, R.	18
		Max	54811	: vis	5.9 :	Neumann, J.	12
R	UMa	Max	54620	: vis	7.6	Rätz, K.	14
		Max	54627	vis	7.5	Schubert, M.	20
		Max	54632	: vis	7.3 :	Neumann, J.	11
		Max	54927	vis	7.6	Neumann, J.	11
T	UMa	Max	54591	vis	7.1	Schubert, M.	20
		Max	54602	: vis	7.3	Neumann, J.	9
RS	UMa	Max	54605	: vis	8.6	Neumann, J.	11
T	UMi	Min	54607	vis	12.5	Marx, H.	9
R	Vir	Max	54609	vis	6.5	Schubert, M.	16
RS	Vir	Max	54580	vis	9.2	Marx, H.	12
SU	Vir	Max	54615	vis	9.6	Marx, H.	11

Table 6 – Semiregular, Longperiod and RV-Tauri-Stars

UV	Aur	Max	54839	vis	7.8	Neumann, J.	11
RX	Boo	Min	54582	vis	7.8	Neumann, J.	15
		Max	54692	vis	7.4	Neumann, J.	16
X	Cnc	Min	54906	: vis	6.5	Neumann, J.	21
WZ	Cas	Min	54634	vis	7.2	Neumann, J.	16
		Max	54729	vis	6.7	Neumann, J.	16
		Min	54839	vis	7.3	Neumann, J.	18
		Max	54928	vis	6.6	Neumann, J.	18
V465	Cas	Max	54702	: vis	6.1	Neumann, J.	16
		Max	54908	: vis	6.0	Neumann, J.	18
RW	Cep	Max	54610	: vis	6.0	Neumann, J.	27
		Min	54872	: vis	6.9	Neumann, J.	27
RR	CrB	Min	54634	vis	8.4	Neumann, J.	27
TT	Cyg	Max	54649	vis	7.1	Neumann, J.	20
		Min	54786	vis	7.6	Neumann, J.	15
AF	Cyg	Max	54762	vis	6.5	Strüver, H.	23
		Max	54943	vis	7.1	Strüver, H.	14
CH	Cyg	Max	54619	vis	8.4	Neumann, J.	24
U	Del	Max	54647	: vis	5.9	Neumann, J.	26
RY	Dra	Max	54533	vis	6.4	Neumann, J.	17
		Min	54613	: vis	7.3	: Neumann, J.	17
UX	Dra	Max	54594	vis	5.9	Neumann, J.	31
NZ	Gem	Min	54901	vis	6.0	Neumann, J.	10
		Max	54932	vis	5.0	Neumann, J.	10
PS	Gem	Max	54843	vis	7.0	Neumann, J.	10
		Min	54893	vis	7.8	Neumann, J.	10
eta	Gem	Min	54936	vis	3.8	Neumann, J.	24
AC	Her	Max	54597	vis	7.3	Neumann, J.	13
		Min	54704	vis	7.7	Neumann, J.	13
IN	Hya	Min	54904	: vis	6.9	: Neumann, J.	14
RX	Lep	Max	54862	: vis	5.2	: Neumann, J.	14
XY	Lyr	Max	54525	vis	5.4	Neumann, J.	7
		Max	54621	vis	5.7	Neumann, J.	7
		Min	54667	vis	6.3	Neumann, J.	7
		Max	54721	vis	5.8	Neumann, J.	7
		Min	54774	vis	6.3	Neumann, J.	7
		Max	54852	vis	5.7	Neumann, J.	7
		Min	54905	vis	6.3	Neumann, J.	7
		Max	54941	vis	5.4	Neumann, J.	7
		Min	54976	vis	6.3	Neumann, J.	7
U	Mon	Max	54929	vis	5.4	Neumann, J.	23
X	Mon	Max	54877	: vis	7.4	: Neumann, J.	13
AX	Mon	Max	54892	vis	6.5	Neumann, J.	21
rho	Per	Max	54794	vis	3.3	Neumann, J.	25
Z	Psc	Max	54664	vis	6.1	Neumann, J.	12
		Min	54744	vis	7.2	Neumann, J.	12
DL	Psc	Min	54707	vis	6.2	Neumann, J.	20
X	Sge	Max	54652	: vis	7.9	: Neumann, J.	22
R	Sct	Min	54605	vis	6.8	Neumann, J.	12
		Min	54606	vis	6.55	Sterzinger, P.	22
		Min	54606	vis	6.7	Winkler, R.	10
		Max	54642	: vis	4.8	: Winkler, R.	10
		Max	54686	: vis	5.0	: Winkler, R.	10
R	Sct	Max	54697	vis	5.1	Neumann, J.	12
		Min	54737	vis	6.2	Winkler, R.	10
		Min	54742	vis	6.35	Sterzinger, P.	22

Table 6 – Semiregular, Longperiod and RV-Tauri-Stars (cont.)

R	Sct	Max	54782	:	vis	5.2	:	Winkler, R.	10
Y	UMa	Max	54583		vis	8.1		Neumann, J.	26
RY	UMa	Max	54628		vis	6.9		Neumann, J.	28
		Min	54751		vis	7.9		Neumann, J.	35
ST	UMa	Min	54588		vis	7.1		Neumann, J.	17
		Max	54620		vis	5.8		Neumann, J.	17
VY	UMa	Max	54651		vis	6.0		Neumann, J.	33
		Max	54865		vis	5.9		Neumann, J.	33
SW	Vir	Min	54934		vis	7.7		Neumann, J.	8
		Min	54972		vis	7.8		Neumann, J.	8
FH	Vir	Min	54948		vis	7.8		Neumann, J.	9
		Max	54979	:	vis	7.0	:	Neumann, J.	9
FP	Vir	Min	54967		vis	7.9		Neumann, J.	9
		Max	54993	:	vis	7.6	:	Neumann, J.	8

