Extrema timinigs of some short-period variable stars (Anton Paschke, 2006/08/15)
==========

Anton@Paschke.com

This list contains minima of eclipsing and maxima of pulsating stars.
The observers used the following equipment:

Friedhelm Hund
R12 = 12 cm refractor & Starlight Xpress, Hakos Farm.

Anton Paschke

T10 = 10 cm tele-objective	Cryocam 80A.	Private observatory, Eggerberg VS
N28 = 28 cm Newton	Cryocam 80A.	Private observatory, Eggerberg VS
C11 = Celestron 11	ST-8	Hakos IAS
C14 = Celestron 14	ST-7	Hakos IAS

Radek Dreveny processed some observations of Friedhelm Hund.

Forecast had been calculated using information from ASAS (Pojmansky, 2005) & GEOS database, and the list of RR Lyrae stars maintained by Gisela Maintz (Maintz, 2005). The later two are also understood as a target for the information communicated here. Minima of eclipsing stars will indeed be inserted into the O-C GATEWAY (Paschke & Brat, 2006). We maintain a list of newly detected variable stars RafV (Dreveny, Paschke & Hund, 2006).

CCD images, except from Cryocam, were processed by C-Munipack, written by David Motl (Motl 2005). All times are heliocentric Julian date based on UTC. O-C column is O-C value based on elements given in this paper.

Star identifications (only non-GCVS stars)

GSC 2850.1075	Vir 02:53:07.52 +40:58:54.6		found by Asas
GSC 6686.0470	Hya 12:26:17.87 -25:46:20.0		found by Asas
RafV053	Ara 17:50:31.68 -49:31:53.6	USNO-A2.0 0375-33480052	field of V 339 Ara
RafV054	Aps 15:11:31.85 -78:24:03.5	USNO-A2.0 0075-04703728	field of YZ Aps
RafV056	Ara 17:13:17.73 -61:10:35.3	USNO-A2.0 0225-27163949	field of CV Ara
RafV057	Ara 17:13:01.30 -61:09:49.7	USNO-A2.0 0225-27154447	field of CV Ara
RafV061	Aps 15:49:39.29 -76:25:18.8	USNO-A2.0 0075-05033342	field of AU Aps
RafV062	Sgr 18:50:02.11 -34:45:59.1	USNO-A2.0 0525-38559788	field of ZZ Sgr

Elements

TW	And	min	39020.4104	+ 4.122766	O-C GATE
RS	Aps	max	25327.48	+ 0.565219	this paper
SS	Aps	min	51927.764	+ 0.582672	this paper
SY	Aps	min	51904.065	+ 0.278908	this paper
SZ	Aps	min	25330.55	+ 3.52080	this paper
TV	Aps	min	51903.939	+ 0.647493	this paper
UW	Aps	max	52397.456	+ 0.503312	this paper
YY	Aps	min	51965.399	+ 0.855552	this paper
AB	Aps	max	36728.38	+ 0.481861	Maintz
AT	Aps	max	36720.370	+ 0.493799	this paper
AU	Aps	max	36694.433	+ 0.56710	this paper
BV	Aps	min	36809.413	+ 1.646861	this paper
GK	Aps	max	52406.462	+ 0.298406	GEOS database
RafV054	Aps	min	53093.405	+ 0.27	RafV homepage
RafV061	Aps	max	51914.855	+ 0.0638629	this paper
HH	Aqr	max	51429.445	+ 0.574436	Maintz
V 348	Aql	min	25447.45	+ 0.997763	O-C GATE
CV	Ara	max	27277.25	+ 0.55658	GCVS
HS	Ara	min	27627.20	+ 2.645573	this paper
IT	Ara	min	26091.276	+ 0.5283806	this paper
IW	Ara	min	26154.46	+ 0.5368513	this paper
OW	Ara	min	51940.377	+ 2.729985	this paper

RafV053	Ara	max	53206.291	+ 0.072761	RafV homepage
RafV056	Ara	min	53926.381	+ 1.019/n	this paper
RafV057	Ara	min	53152.391	+ 0.2458	this paper
TU	Cha	min	36728.253	+ 0.557048	O-C GATE
TX	Cha	min	36808.25	+ 0.901644	this paper
Y	Cir	min	25327.50	+ 3.169972	this paper
RR	Cir	min	51913.965	+ 1.09173	BAV Rundbrief 2005/3
RZ	Cir	min	25384.34	+ 3.693237	this paper
VY	Cir	min	51927.597	+ 2.34350	BAV Rundbrief 2005/3
AQ	Cir	min	28656.350	+ 1.145705	O-C GATE
CL	Cir	min	48501.780	+ 5.25376	O-C GATE
Y	Crv	max	51280.760	+ 0.329035	this paper
V 454	CrA	min	31264.46	+ 2.396842	this paper
SX	Del	max	51416.545	+ 0.613345	this paper
RT	Equ	max	50007.431	+ 0.44481	BAV Rundbrief 2006/3
GSC 6686.0470	Hya	min	52386.640	+ 0.371497	IBVS 5599
V 441	Oph	min	35663.821	+ 3.058525	this paper
V 448	Oph	min	26867.378	+ 1.819698	this paper
V 528	Oph	min	28401.291	+ 5.41098	this paper
V 709	Oph	min	48092.40	+ 3.045175	this paper
V2298	Oph	max	42857.25	+ 0.31717	BAV Rundbrief 2006/3
ZZ	Sgr	min	43344.9859	+ 3.08339	this paper
GSC 2850.1075	Vir	min	51259.608	+ 0.35449	(in doubts)

Minima of eclipsing stars

			HJD	err	O-C	N		
TW	And	p	53693.355	+-0.010	+0.020	199	ccd T10	
SS	Aps	p	53920.504	+-0.005	+0.002	443	ccd C14	
SY	Aps	p	53920.291	+-0.001	0.000	304	ccd C14	
SY	Aps	s	53920.432	+-0.002	0.002	121	ccd C14	
SZ	Aps	p	53919.446	+-0.007	0.000	354	ccd C14	
TV	Aps	p	53925.412	+-0.005	0.000	611	ccd C14	
YY	Aps	p	53926.324	+-0.003	0.000	400	ccd C11	
BV	Aps	p	53933.470	+-0.002	-0.018	599	-Ir R12	Friedhelm
BV	Aps	p	53938.412	+-0.002	-0.016	575	-Ir R12	Friedhelm
RafV054	Aps	s	53923.520	+-0.004	0.000	480	ccd C14	
V 348	Aql	p	53923.595	+-0.003	-0.011	116	ccd C11	
HS	Ara	p	53921.551	+-0.002	+0.001	348	ccd C14	d=0.05 days
IT	Ara	p	53928.481	+-0.005	+0.002	165	ccd C14	
IW	Ara	p	53922.556	+-0.006	-0.001	324	ccd C14	
OW	Ara	p	53930.536	+-0.004	0.000	293	ccd C14	d=0.05 days
RafV056	Ara	p	53153.30	+-0.040	+0.359		ccd R12	Radek
RafV056	Ara	p	53926.381	+-0.012	0.000	228	ccd C14	
RafV056	Ara	p	53927.400	+-0.015	0.000	350	ccd C14	
RafV057	Ara	p	53152.391	+-0.010	0.000		ccd R12	Radek
RafV057	Ara	p	53927.175	+-0.005	+0.022	571	ccd C14	normal
TU	Cha	p	53919.307	+-0.005	-0.004	143	ccd C11	
TX	Cha	p	53923.258	+-0.007	+0.002	193	ccd C11	
Y	Cir	p	53933.333	+-0.003	+0.006	397	ccd C14	
RR	Cir	p	53917.291	+-0.003	+0.002	175	ccd C11	d=0.022 days
RZ	Cir	p	53929.369	+-0.006	0.000	385	ccd C14	
VY	Cir	p	53931.317	+-0.006	+0.028	481	ccd C14	
AQ	Cir	p	53920.289	+-0.007	-0.002	339	ccd C11	
CL	Cir	p	53918.438	+-0.002	+0.031	400	-Ir R12	Friedhelm
CL	Cir	s	53921.411	+-0.002	+0.377	400	-Ir R12	Friedhelm
V 454	CrA	s	53920.578	+-0.005	-0.031	298	ccd C11	d=0.05 days
V 454	CrA	s	53932.560	+-0.004	-0.033	915	ccd C11	d=0.05 days
GSC 6686.0470	Hya	s	53929.283	+-0.002	+0.002	242	ccd C11	
V 441	Oph	p	53932.399	+-0.002	+0.008	386	ccd C11	d=0.04 days
V 448	Oph	p	53915.380	+-0.002	+0.011	234	ccd C11	
V 528	Oph	p	53919.495	+-0.005	+0.022	207	ccd C11	
V 709	Oph	p	53893.457	+-0.008	-0.001	65	ccd N28	
ZZ	Sgr	p	53933.349	+-0.001	+0.002	380	ccd C11	d=0.02 days
GSC 2850.1075	Vir	p	53922.294	+-0.003		247	ccd C11	

Maxima of pulsating stars

			HJD	err	O-C	N		
RS	Aps	R	53917.385	+-0.003	-0.003	134	ccd C14	
UW	Aps	R	53918.464	+-0.005	-0.001	294	ccd C14	
AB	Aps	R	53930.343	+-0.003	+0.007	159	ccd C14	
AT	Aps	R	53924.333	+-0.003	+0.006	304	ccd C14	
AU	Aps	R	53926.917	+-0.005	+0.016	775	ccd C11	normal
GK	Aps	R	53928.284	+-0.020	-0.049	230	ccd C14	
RafV061	Aps	R	51914.855	+-0.005	0.000	127	V	Asas
RafV061	Aps	R	53927.3028	+-0.0002	+0.0001		ccd C11	
RafV061	Aps	R	53927.3665	+-0.0002	-0.0001		ccd C11	
RafV061	Aps	R	53927.4943	+-0.0002	0.0000		ccd C11	
RafV061	Aps	R	53927.5581	+-0.0002	-0.0001		ccd C11	
RafV061	Aps	R	53927.6220	+-0.0005	0.0000		ccd C11	
RafV061	Aps	R	53930.2404	+-0.0002	0.0000		ccd C11	
RafV061	Aps	R	53930.3044	+-0.0002	+0.0001		ccd C11	
RafV061	Aps	R	53932.2840	+-0.0005	0.0000		ccd C14	
RafV061	Aps	R	53932.3479	+-0.0002	0.0000		ccd C14	
HH	Aqr	R	53918.460	+-0.005	-0.016	206	ccd C11	
HH	Aqr	R	53912.475	+-0.008	-0.022	541	ccd C11	
HH	Aqr	R	53916.503	+-0.007	-0.015	331	ccd C11	
CV	Ara	R	53927.380	+-0.005	-0.034	412	ccd C14	
RafV053	Ara	R	53931.527	+-0.001	0.027	222	ccd C14	
Y	Crv	R	53916.333	+-0.010	+0.003	263	ccd C11	
SX	Del	R	53916.544	+-0.007	+0.005	207	ccd C11	
RT	Equ	R	53917.533	+-0.003	+0.222	372	ccd C11	
V2298	Oph	R	53917.287	+-0.010	+0.002	750	ccd C11	
RafV062	Sgr	R	53933.309	+-0.015	0.000	80	ccd C11	

Remarks on some stars

AU Aps The star was observed on the 10-th, 13-th and 15-th July.

RafV057 Ara The star was observed on the 9-th and 10-th July.
The lightcurve is completely covered.

CL Cir The secondary minimum is displaced

RT Equ The maximum times cannot be described with linear elements.
See also BAV Rundbrief 2002/3, O-C diagram in BAV Rundbrief 2006/3

V2298 Oph The light curves for the 3 nights overlap, aliases may be
excluded. 3 cycles/day may be considered as the definitve
solution. Details in BAV Rundbrief 2006/3

RafV062 Sgr New. No period known

GSC 2850.1075 Vir Aliasing by the year is possible

References / Internet links

- Kholopov P.N., Samus N.N., Frolov M.S., Goranskij V.P., Gorynya, N.A., Karitskaya E.A., Kazarovets E.V., Kireeva N.N., Kukarkina N.P., Kurochkin N.E., Medvedeva G.I., Pastukhova E.N., Perova N.B., Rastorguev A.S., and Shugarov S.Yu., Durlevich O.V., 2006, General Catalogue of Variable Stars + Namelists 67 – 78, http://www.sai.msu.su/groups/cluster/gcvs/gcvs/
- This research has made use of the SIMBAD database, operated at CDS, Strasbourg, France, http://cdsweb.u-strasbg.fr/Simbad.html
- Pojmanski G., 2005, ASAS-3, http://www.astrouw.edu.pl/~gp/asas/asas.html
- GEOS RR Lyr Database, http://dbrr.ast.obs-mip.fr/
- IBVS, Information Bulletin on Variable Stars, http://www.konkoly.hu/IBVS/
- BAV Rundbrief, http://bav-astro.de/rb/index.shtml
- Maintz G., 2005, RR Lyrae Stars brighter than 12.5 mag, (2005A&A...442..381M), http://www.astro.uni-bonn.de/~gmaintz/
- Paschke A., Brat L., 2006, O-C gateway (2006OEJV...23...13P), http://var.astro.cz/ocgate/
- Dreveny R., Paschke A., Hund F., 2006, RafV Catalog of newly detected variable stars, http://var.astro.cz/newrafv.php?lang=en
- Hakos IAS observatory, http://www.ias-observatory.org/
- Hakos Farm observatory, http://www.natron.net/tour/hakos/start.html
- Motl D., 2005, C-Munipack, http://integral.sci.muni.cz/cmunipack/
- SBIG, http://www.company7.com/sbig/index.html
- Cryocam, http://cryocam.com/