A list of minima and maxima timings
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Abstract
The list contains minima of eclipsing and maxima of pulsating stars, it continues the list published in OEJV 0048.

Instruments used
The following telescopes and observatories have been used:

Asas      All Sky Automated Survey
Tarot     automated telescope, description in OEJV 0070
50 cm + ST-7 (50 cm mirror, primary focus) observatory Hakos IAS, Namibia
C11 + ST-8 Celestron 11, observatory Hakos Farm-2, Namibia
C11 + ST-7 Celestron 11, observatory Hakos IAS, Namibia
Takahashi 160 mm with StarLight Xpress, observatory Hakos IAS, Namibia
Cryocam 80A 280 mm Newton, observatory in Eggerberg, Switzerland
Hakos Farm 120 mm refractor with Starlight Xpress, observatory Hakos Farm
OEJV 0048 Corrected maximum times already published.

Coordinates
The coordinates of well identified stars are given in the GCVS and NSV and will not be repeated here. Coordinates are all J2000. The following stars identified by Guide Star Catalog have been observed:

GSC 03627-01580 And 23:10:12.46 +47:34:14.9
GSC 04833-01925 CMi 07:57:17.00 -00:05:00.0
GSC 06686-00470 Hya 12:26:18.00 -25:46:18.0
GSC 05591-01066 Lib 15:00:00.00 -14:17:00.0
GSC 02850-01075 Vir 02:53:07.52 +40:58:54.6

SvkV is a list of variable stars detected in Slovakia.
SvkV001 Peg 21:39:43.38 +26:34:46.5
SvkV002 Peg 21:38:22.26 +26:37:39.0

The detection of the SvkV stars has been announced in IBVS 5700. The following synonyms are given:
SvkV001 = GSC2.2 N033031026576 = APM E00286-0080691 = USNO-B1.0 1165-0560940
= USNO-A2.0 1125-18642461
SvkV002 = GSC2.2 N033031028158 = APM E00286-0076868 = USNO-B1.0 1166-0562907
= USNO-A2.0 1125-18616895

We (Radek Dreveny, Anton Paschke Friedhelm Hund) maintain our own list of newly detected variable stars. Observations of the following stars are reported here.

RafV001 Aps 15:31:55.9 -78:23:05
RafV002 Aps 16:10:19.3 -76:52:04
RafV009 Aps 14:37:59.1 -72:52:45
RafV061 Aps 15:49:40.0 -76:25:18
RafV120 Aps 15:15:29.0 -77:46:40
RafV121 Aps 15:19:44.0 -77:38:40
Coordinates of most RafV stars are determined by visual comparison of ccd image and ESO Digital Sky Survey

### Elements

Only elements found or changed by the observations reported here are listed. The columns are: starname, constellation, kind, epoch, period.

**Kind:**  
- **p** stands for minimum (eclipsing stars),  
- **R** stands for maximum (RR Lyrae and HADS stars)

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Minima and Maxima timings
The table contains the following columns:
1) Star Name. As taken from GCVS, NSV, GSC or the list mentioned above.
2) Constellation
3) Kind of extremum. p = primary, s = secondary, R = maximum (RR Lyrae star)
4) Julian heliocentric time observed
5) Error estimated
6) Number of measurements (ccd images) used
7) Color. ccd = unfiltered ccd, V = Johnson, I = Cousin, -Ir = infrared block
8) Observer
9) Instrument, see list above

Y Oct R 28378.650 0.646556
RY Oct R 27987.453 0.563459
RafV128 Oph p 54278.377 0.336
NSV 07748 Oph p 54268.320 0.4712
V 440 Sgr R 41509.450 0.477481
V 675 Sgr R 28387.244 0.642291
RafV129 Sco p 54276.275 0.3905
RafV130 Sco p 54276.379 0.4508
RafV064 Ser p 54271.210 0.884
RafV115 Tuc p 54275.632 0.3372
G2850.1075 Vir p 54259.608 0.354316

Minima and Maxima timings
The table contains the following columns:
1) Star Name. As taken from GCVS, NSV, GSC or the list mentioned above.
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4) Julian heliocentric time observed
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6) Number of measurements (ccd images) used
7) Color. ccd = unfiltered ccd, V = Johnson, I = Cousin, -Ir = infrared block
8) Observer
9) Instrument, see list above

CZ And p 2453931.501 +0.010 98 V Klotz Alain Tarot
CZ And p 2453931.503 +0.010 97 I Klotz Alain Tarot
V 404 And p 2454000.436 +0.007 150 ccd Paschke Anton Cryocam 80A
GSC 03627-01580 And p 2454090.332 +0.010 364 ccd Paschke Anton Cryocam 80A
RS Aps R 2454276.325 +0.005 667 ccd Paschke Anton 50 cm + ST-7
SY Aps p 2454289.287 +0.003 288 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454259.359 +0.003 157 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454259.511 +0.002 168 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454259.659 +0.002 116 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454263.538 +0.003 223 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454263.695 +0.003 106 ccd Paschke Anton 50 cm + ST-7
TW Aps R 2454280.423 +0.003 205 ccd Paschke Anton 50 cm + ST-7
UU Aps p 2454287.414 +0.002 340 ccd Paschke Anton 50 cm + ST-7
UU Aps R 2453918.506 +0.005 427 ccd Paschke Anton OEJV 0048
UU Aps R 2454279.503 +0.005 427 ccd Paschke Anton 50 cm + ST-7
ZZ Aps R 2454283.295 +0.005 701 ccd Paschke Anton Takahashi
AA Aps R 2454277.579 +0.004 600 ccd Paschke Anton 50 cm + ST-7
AD Aps R 2454257.514 +0.003 591 ccd Paschke Anton 50 cm + ST-7
AE Aps R 2454286.603 +0.007 771 ccd Paschke Anton 50 cm + ST-7
AF Aps R 2454280.575 +0.002 232 ccd Paschke Anton 50 cm + ST-7
AL Aps p 2454266.589 +0.005 590 ccd Paschke Anton Takahashi
AN Aps p 2454262.524 +0.007 478 ccd Paschke Anton 50 cm + ST-7
AU Aps R 2454287.612 +0.008 328 ccd Paschke Anton 50 cm + ST-7
EV Aps R 2454280.620 +0.010 230 ccd Paschke Anton Takahashi
OT Aps p 2454286.561 +0.010 710 ccd Paschke Anton Takahashi
PS Aps p 2454286.319 +0.020 460 ccd Paschke Anton Takahashi
NSV 06592 Aps p 2454279.313 +0.004 427 ccd Paschke Anton 50 cm + ST-7
RafV001 Aps p 2454280.632 +0.008 234 ccd Paschke Anton 50 cm + ST-7
RafV002 Aps s 2453200.308 +0.003 0 ccd Hund Friedhelm Hakos Farm
RafV002 Aps s 2453964.384 +0.002 0 -Ir Hund Friedhelm Hakos Farm
RafV002 Aps s 2453967.340 +0.002 0 -Ir Hund Friedhelm Hakos Farm
RafV002 Aps p 2453967.484 +0.003 0 -Ir Hund Friedhelm Hakos Farm
RafV009 Aps R 2454289.256 +0.004 0 ccd Paschke Anton 50 cm + ST-7
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RW              Com s 2454260.421 +-0.002 114 ccd Paschke Anton Takahashi
WSV 05740       Com p 2454261.385 +-0.004 270 ccd Paschke Anton Takahashi
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EX              Del s 2454295.506 +-0.005 92 ccd Paschke Anton Cryocam 80A
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NSV 00001           Tuc p 2454275.607 +-0.001  165 ccd Paschke Anton  Takahashi
RafV115             Tuc p 2454275.632 +-0.002  600 ccd Paschke Anton  Takahashi
GSC 02850-01075 Vir s 2453898.381 +-0.003  33 ccd Paschke Anton  Cryocam 80A
GSC 02850-01075 Vir s 2454257.298 +-0.003  274 ccd Paschke Anton  50 cm + ST-7
V0014               SMC p 2454282.581 +-0.000  130 ccd Paschke Anton  Takahashi

There is no column with O-C values. They depend on the elements. For several stars no period is known yet, or it will become better known soon. Such information will be better maintained in the referred databases.

Remarks
- **CZ And** was omitted in OEJV 0070 for technical reasons.
- **UW Aps** one maximum in OEJV 0048 was wrong due to the summer time tickmark in the (Greenwich time zone) country settings of the MS-Windows operating system.
- **HH Aqr** two maxima in OEJV 0048 have been wrong due to typing mistake.
- **RZ Crv** The star is catalogued as EW, his period is 0.663756 (GCVS). It was observed in two nights. As comparison was used the star at coordinates 12:50:29 -18:24:48. The data from 2007/06/11 show an slightly asymmetric lightcurve. RZ Crv should probably be reclassified to RRc and his period shoud be halved. The data (differential magnitudes in unfiltered ccd) are attached. Due to the period a longer timespan of observation is needed to obtain a complete lightcurve.
- **V0014 SMC** is a EW star in the foreground of the Small Magellan Cloud.

References