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CCD PHOTOMETRY OF 10 MIRA STARS

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Observed star(s):

Star name	GCVS type	Coordinates (J2000) RA	Dec	Comp. star	Ephemeris E 2400000+	P [day]	Source
SZ Aur	M	05 41 56.6	38 55 56	GSC 2911 23		454.04	GCVS
VX Aur	M	07 28 30.5	40 58 13	GSC 2961 205		322.25	GCVS
RY Cep	M	23 21 14.7	78 57 33	GSC 4609 535		149.06	GCVS
W Dra	M	18 05 35.0	65 57 17	GSC 4213 1511		278.6	GCVS
ST Gem	M	23 21 14.7	78 57 33	GSC 2461 1414		246.23	GCVS
S Lac	M	22 29 00.7	40 18 58	GSC 3204 946		241.5	GCVS
RU Lyr	M	19 12 20.9	41 18 13	GSC 3125 334		371.84	GCVS
RW Lyr	M	18 45 10.3	43 38 07	GSC 3130 1591		503.75	GCVS
SX Peg	M	22 50 25.2	17 53 36	GSC 1702 1270		303.6	GCVS
RV Peg	M	22 25 37.9	30 28 22	GSC 2734 1070		396.8	GCVS

Observatory and telescope:

Valašské Meziříčí Observatory, Astrocamera ZEISS 120/540 mm, Schmidt-Cassegrain 280/1764 mm telescope

Detector:	SBIG ST-7 camera

Filter(s):	*V*

Transformed to a standard system:	No

Date(s) of the observation(s):

SZ Aur 1998.10.23 – 2003.05.06 VX Aur 1998.10.23 – 2003.05.06 RY Cep 2001.12.09 – 2002.04.07 W Dra 1998.10.26 – 2003.05.06 ST Gem 1999.01.17 – 2003.04.20 S Lac 1999.07.19 – 2003.03.10 RU Lyr 1999.05.09 – 2002.11.12 RW Lyr 2002.06.26 – 2002.11.12 SX Peg 1998.10.23 – 2003.01.19 RV Peg 1999.08.04 – 2003.02.02

Comparison stars:		
Variable	Comparison or check star	Photometry [magnitudes]
SZ Aur	GSC 2911 23	$V = 10.62$, $B - V = 0.235$
VX Aur	GSC 2961 205 = SAO 41791	$V = 9.23$, $B - V = 1.372$
RY Cep	GSC 4609 535 = HD 220140	$V = 7.52$, $B - V = 0.897$
W Dra	GSC 4213 1511 = BD +65 1242	$V = 9.38$, $B - V = 0.415$
ST Gem	GSC 2461 1414	$V = 10.63$, $B - V = 0.673$
S Lac	GSC 3204 946	$V = 10.24$, $B - V = 0.298$
RU Lyr	GSC 3125 334 = BD +40 3624	$V = 7.13$, $B - V = 1.543$
RW Lyr	GSC 3130 1591 = BD +43 3060	$V = 8.73$, $B - V = 1.428$
SX Peg	GSC 1702 1270 = BD +17 4818	$V = 7.44$, $B - V = 0.653$
RV Peg	GSC 2734 1070 = BD +29 4659	$V = 10.62$, $B - V = 0.990$

Remarks:

Maxima timings are determined using the Kwee and von Woerden (1956) method implemented in AVE (Barbera, 2000) and their values are given in Table 1.

Table 1: Maxima timings

Star name	Geo. JD	Error
SZ Aur	2451818.3	0.3
	2452282.9	0.2
	2452735.6	0.05
VX Aur	2451542.1	0.4
	2451866.7	1.1
RY Cep	2452321.3	0.1
W Dra	2451421.5	0.5
	2451671.7	0.5
	2451983.8	0.6
	2452246.4	0.2
	2452545.9	0.3
ST Gem	2451672.8	0.3
	2451936.2	0.3
	2452674.8	0.1
S Lac	2451484.8	0.2
	2451724.5	0.3
	2452696.8	0.1
RU Lyr	2451406.5	0.5
	2451774.3	0.5
	2452520.8	0.1
RW Lyr	2452511.3	0.9
SX Peg	2452594.3	0.2
RV Peg	2451766.1	0.3
	2451793.1	0.4 (double maximum)
	2452567.9	0.3

Availability of the data:
Through the IBVS-website as: 5436-t1.txt, 5436-t2.txt, 5436-t3.txt, 5436-t4.txt, 5436-t5.txt, 5436-t6.txt, 5436-t7.txt, 5436-t8.txt, 5436-t9.txt, 5436-t10.txt.

Acknowledgements:
This work has made use of the SIMBAD database, operated at CDS, Strasbourg, France. The NASA ADS Abstract Service was used to access data and references.

References:

Barbera, R., 2000, `http://www.astrogea.org/soft/ave/aveint.htm`

Kholopov, P. N. et al., 1985, *General Catalogue of Variable Stars (GCVS)*, 4th edition, Moscow

Kwee, K. K. and Van Woerden, H., 1956, *BAN*, **12**, No. 464, 327

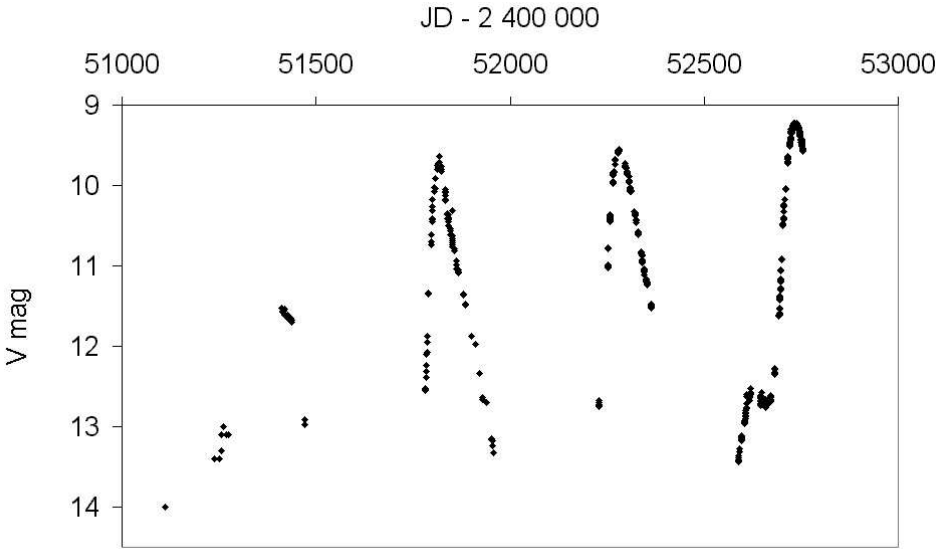

Figure 1. Light curve SZ Aur (filter V).

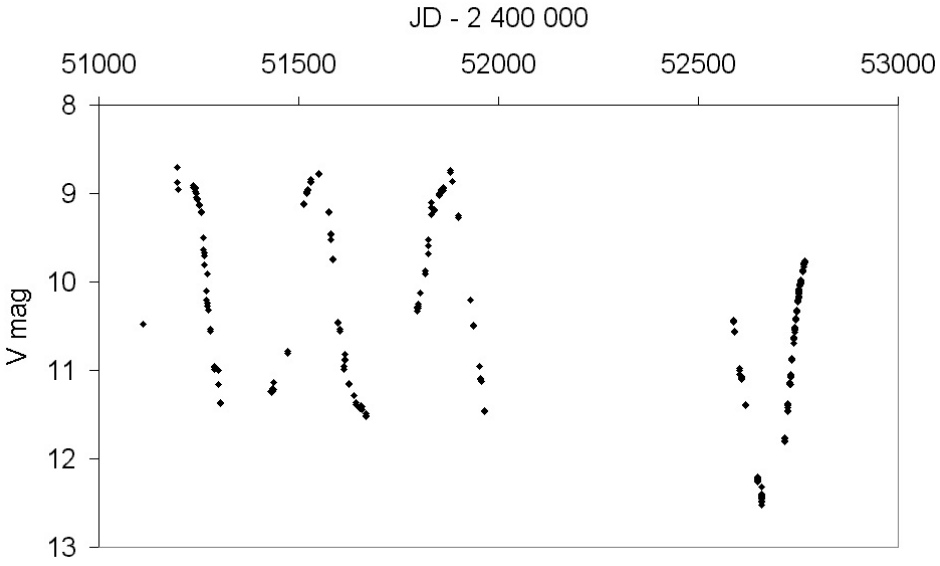

Figure 2. Light curve VX Aur (filter V).

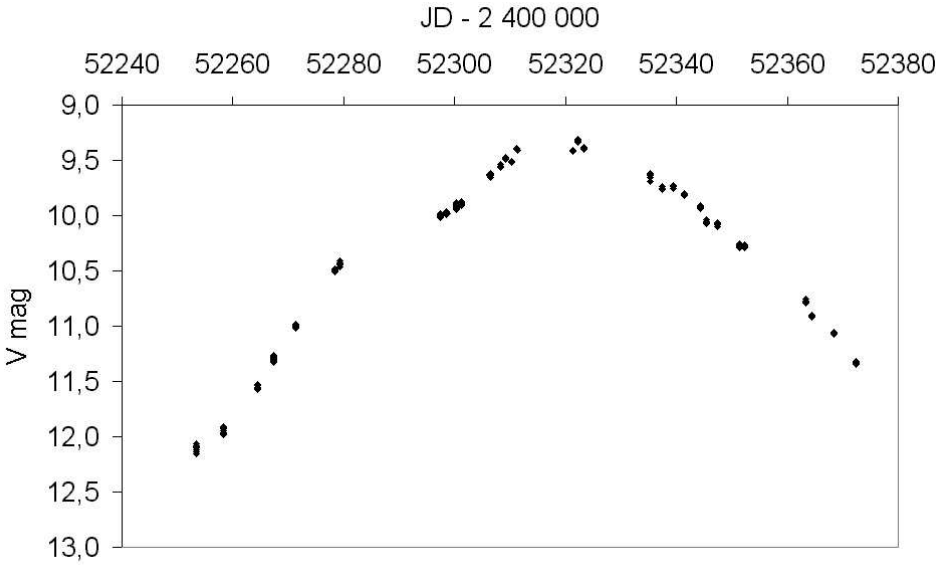

Figure 3. Light curve RY Cep (filter V).

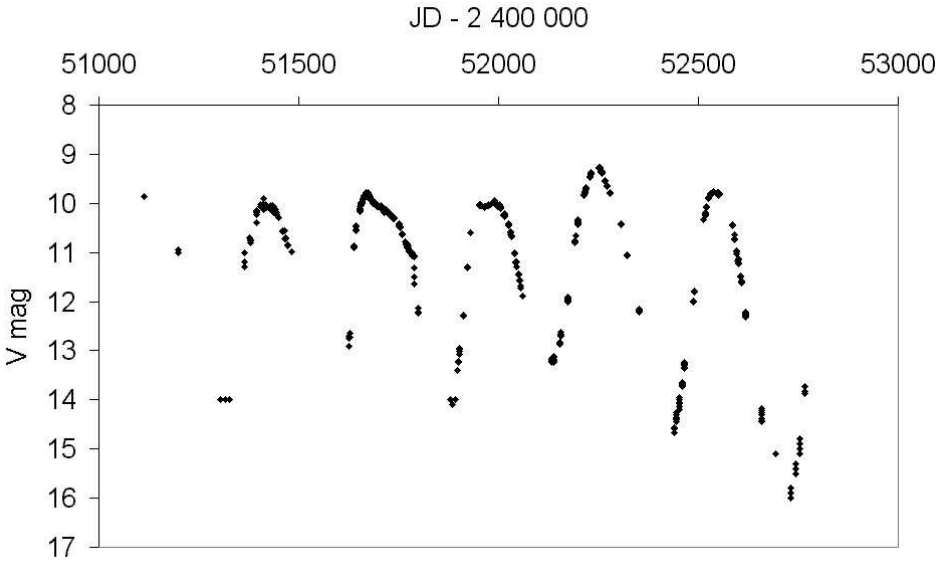

Figure 4. Light curve W Dra (filter V).

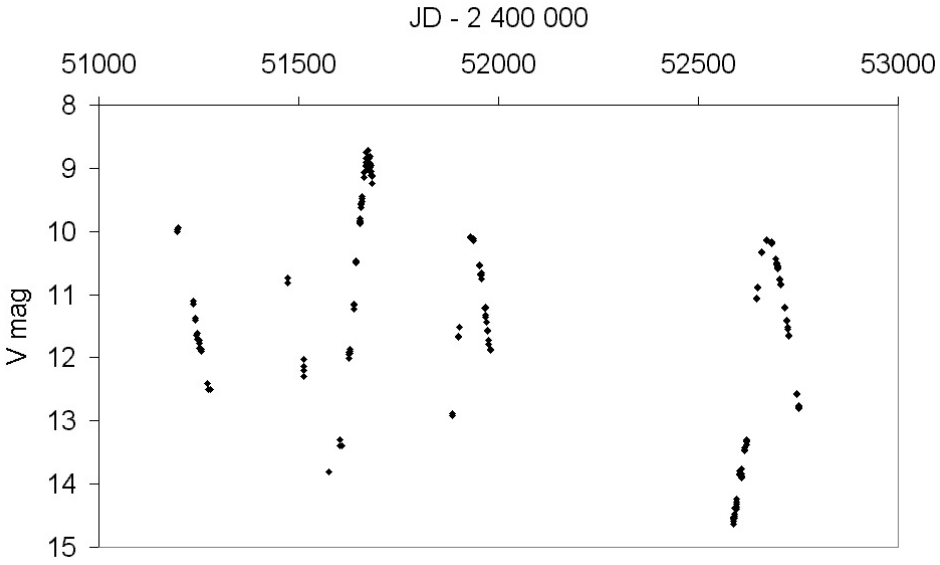

Figure 5. Light curve ST Gem (filter V).

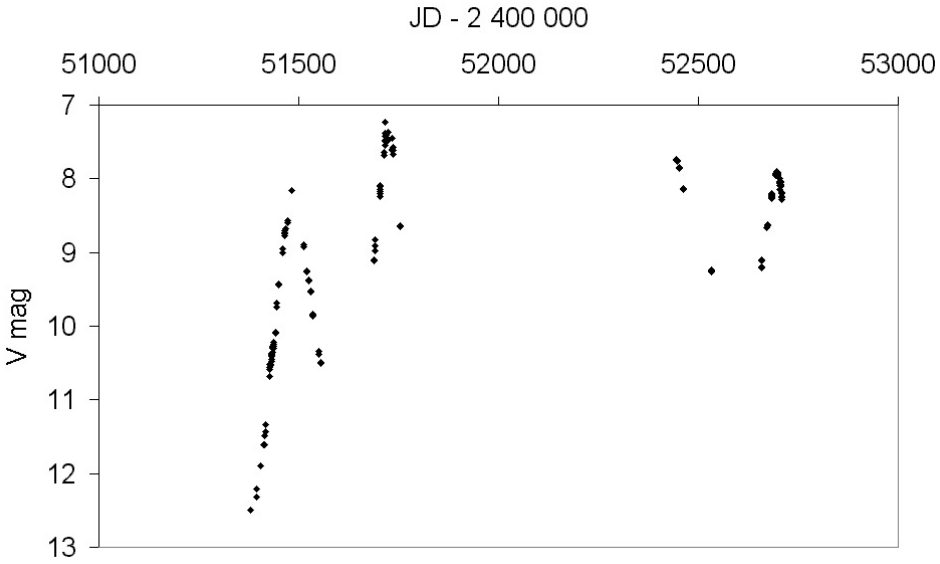

Figure 6. Light curve S Lac (filter V).

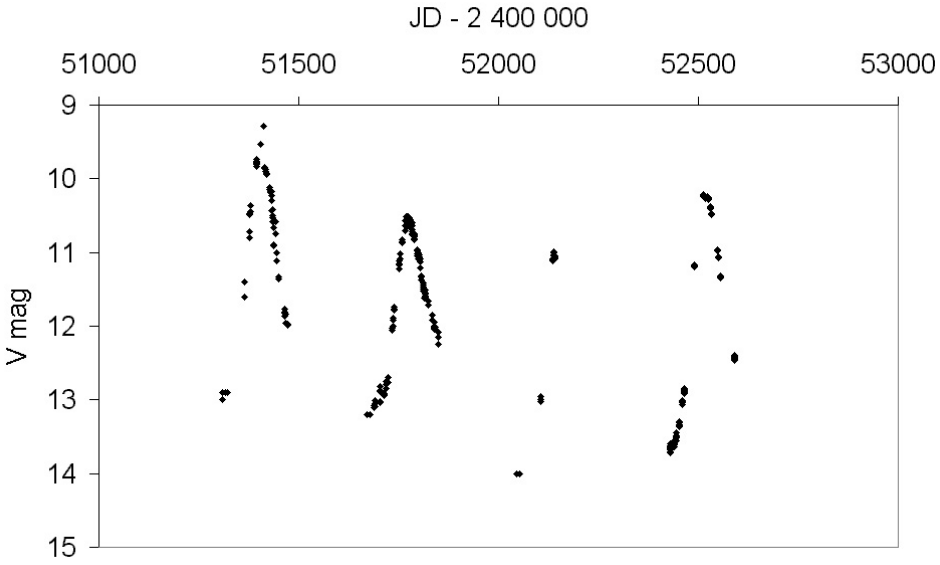

Figure 7. Light curve RU Lyr (filter V).

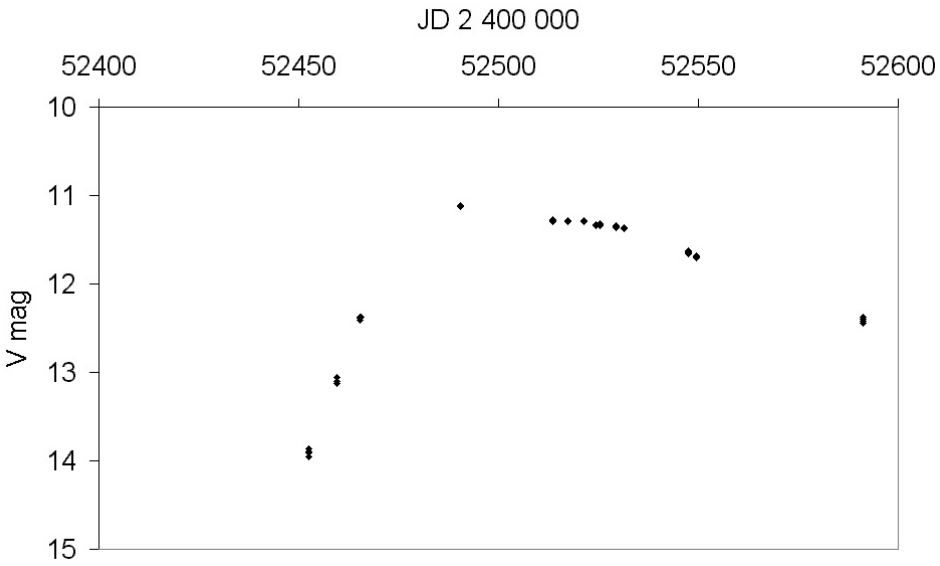

Figure 8. Light curve RW Lyr (filter V).

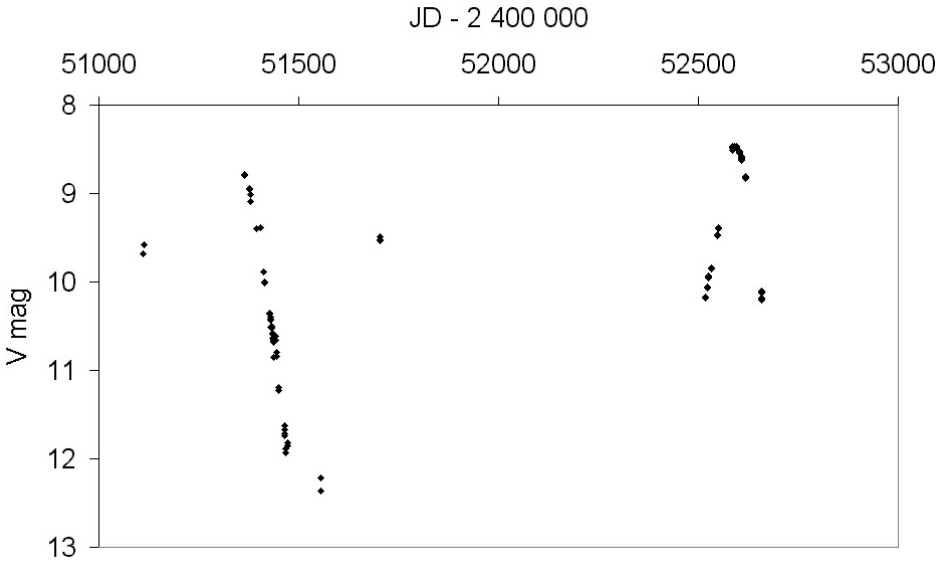

Figure 9. Light curve SX Peg (filter V).

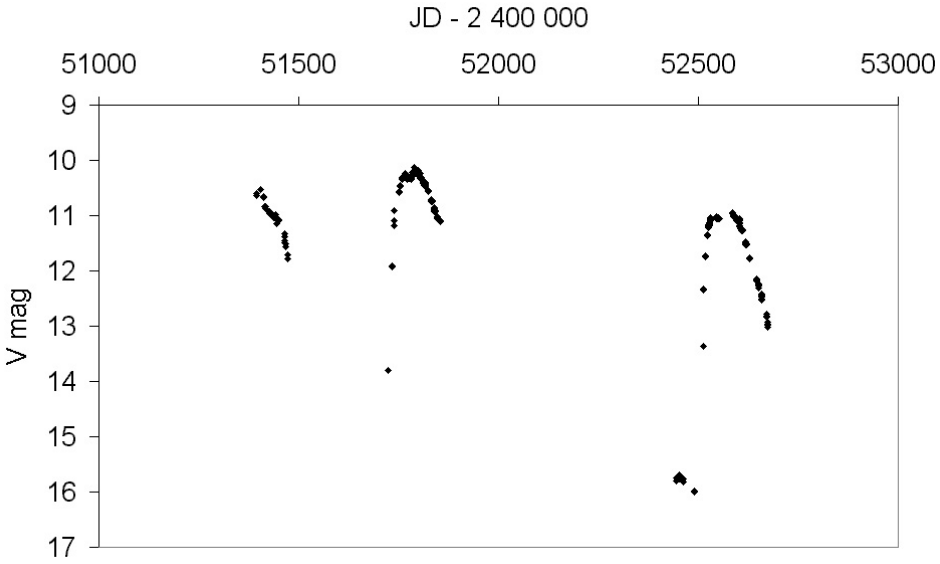

Figure 10. Light curve RV Peg (filter V).