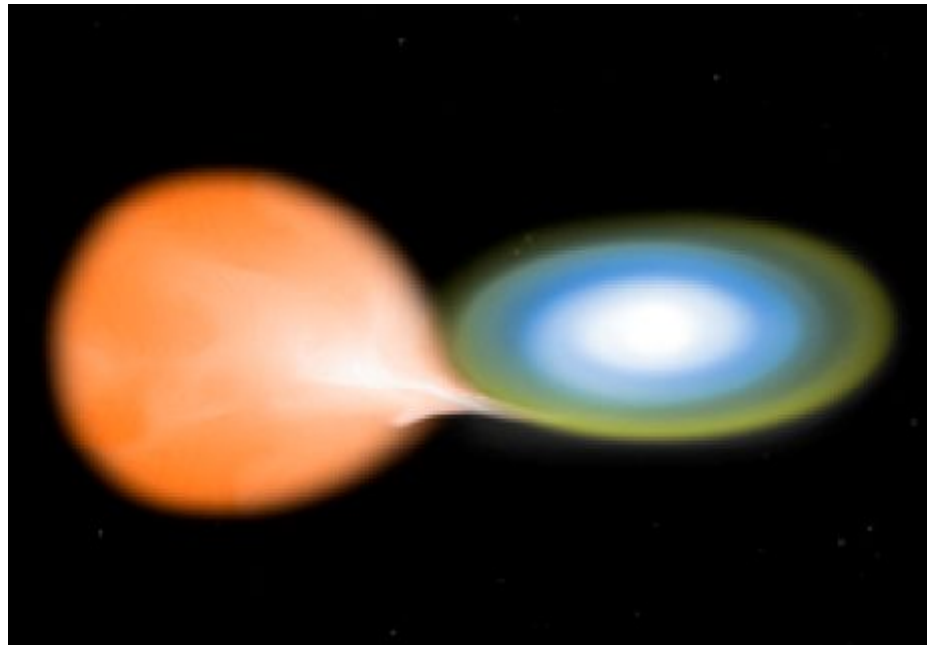


SUPERHUMPS in KOLONICA

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CRAO 2008

Introduction

Our systematic observations of cataclysmic variables at Kolonica Observatory began in 2006 and still continue. Up to now, we have observed 16 dwarf novae of SU UMa type in superoutbursts, where superhumps were detected. The part of our measurements were already analyzed and results were published. For example, period analysis of the superhumps in CI UMa found superhumps period 1.494 hours (Parimucha & Dubovský, 2006, OEJV 50). The analysis of the superhumps in RXSJ053234 revealed their periodicity 1.369 hours (Parimucha & Dubovský, 2006, OEJV 52). We now work on the series of papers concerning a more detailed analysis of all observed object.

All our observations are performed by two low-costs systems consist of Newton type telescopes on semi-automatic equatorial mounts, called **HUGO** (265/1360mm) and **PÚPAVA** (280/1500mm), the both equipped by **Meade DSI Pro** CCD camera. To maximize a light income, we use no filters. The basic reduction of the data was done with the program package **C-Munipack** (Motl, 2006). The final determination of magnitudes was done using the multiple comparison star method (Kim et al. 2004) as implemented in computer program **MCV** (Andronov & Baklanov 2004). The period for each of the stars was found with the period analysis software **Peranso 2.2** (Vanmunster, 2006). The method used employs periodic orthogonal polynomials to fit observations, and the analysis of variance (**ANOVA**) statistic to evaluate the quality of the fit. This method was proposed by (Schwarzenberg-Czerny, 1996).

Our observations could be found at the web pages:

<http://var.kozmos.sk/>

and

<http://www.astrokolonica.sk/>

V844 Her

4 nights in april 2006

Lichtencknecker 150/2250 mm

Meade DSI Pro

Filter: Clear

Exposure 30 sec

Superoutburst visually detected by Dubovsky

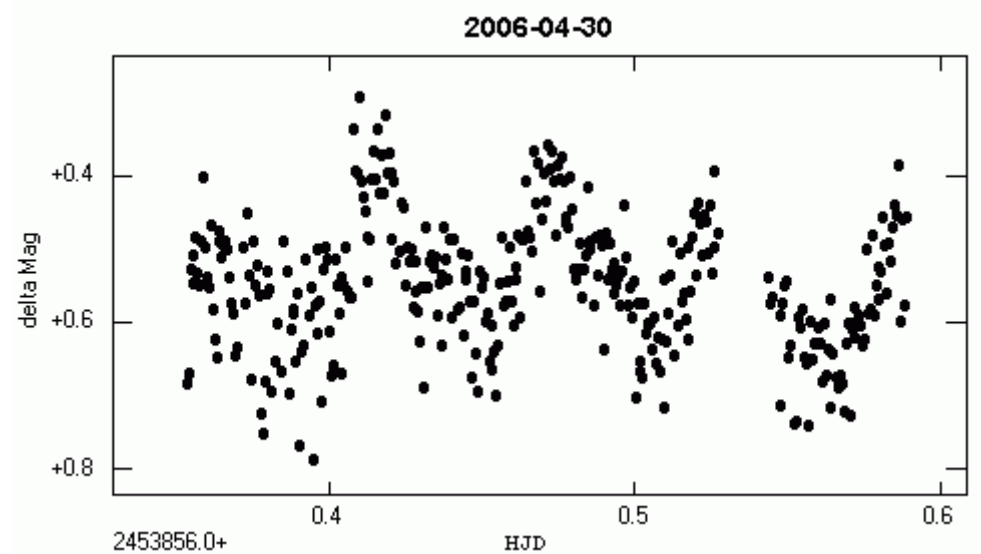
Published in 2007 PASJ, 59, 643

Porb = 0.054643d

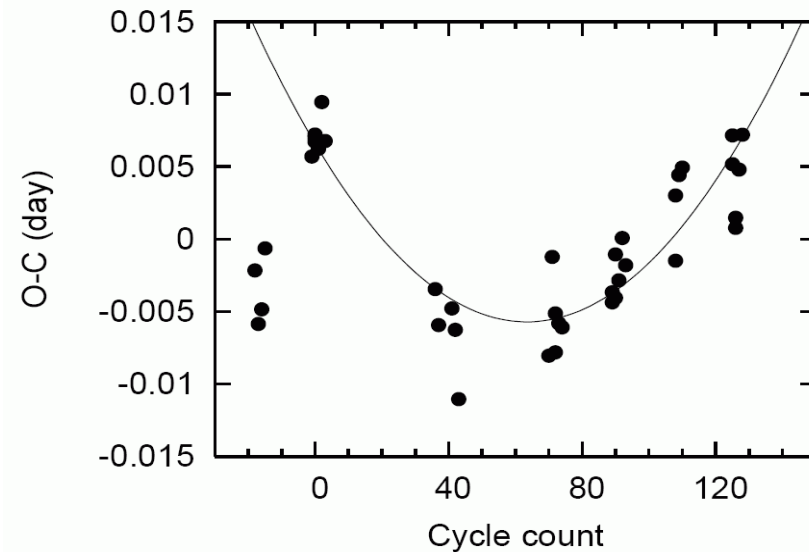
Observed superhumps period **Psh=0.055883d**



Lichtencknecker telescope formerly in the old pavilion of AO Kolonica Saddle



Light curve 30-04-2006



O-C diagram of the superhump maxima during 2006 superoutburst

V844 Her

5 nights in April 2008

Pupava 280/1500 mm

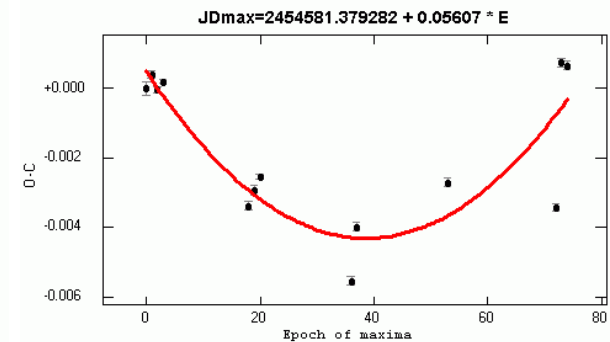
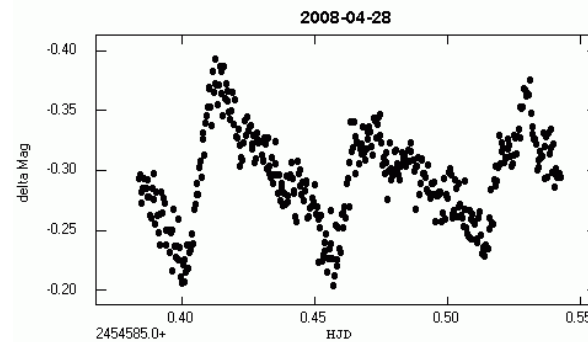
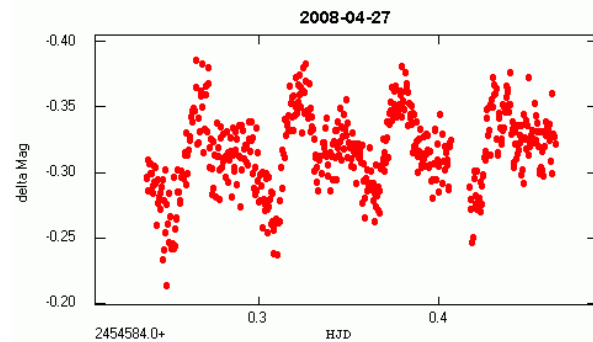
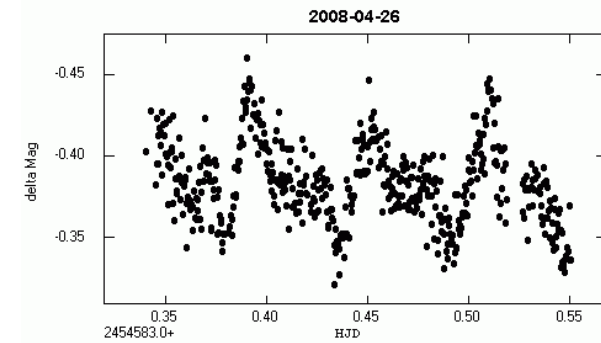
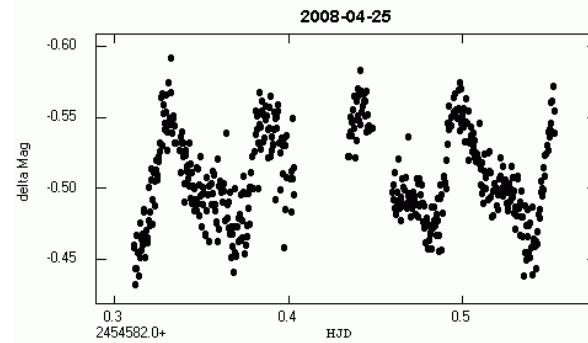
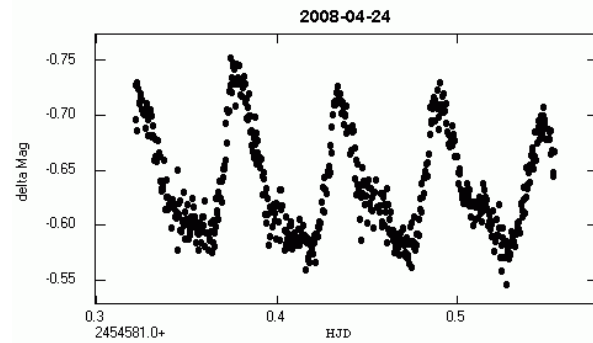
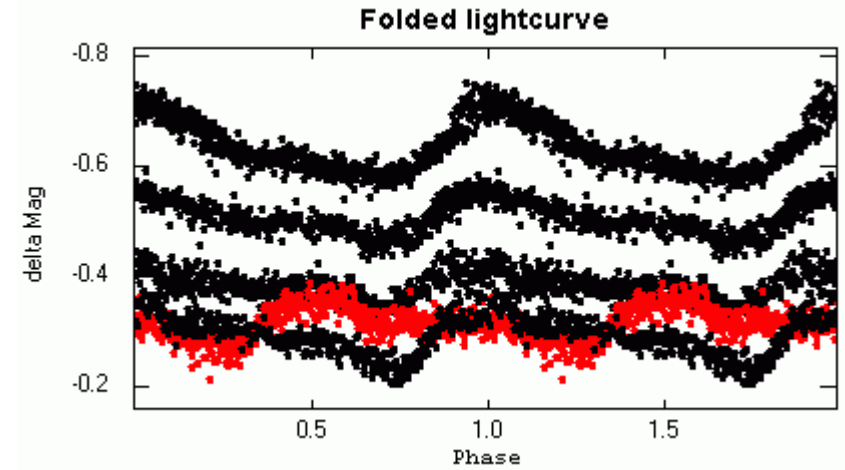
Meade DSI Pro, Filter: V, Exposure 30 sec

Mean comparison:

GSC 3062-0050 V=14.09, B-V=0.64 (Henden, Honeycutt 1997)

Observed:

Psh = 0.056074 +/- 0.000062 d [Porb = 0.054643d]



MR UMa

2 nights in April 2007

Hugo 265/1360 mm

Meade DSI Pro

Filter: V

Exposure 30 sec

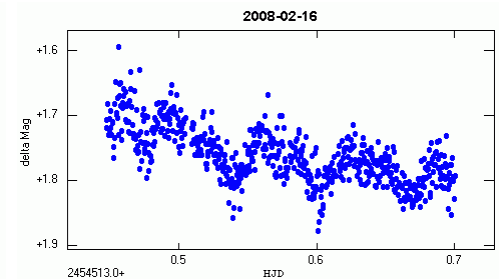
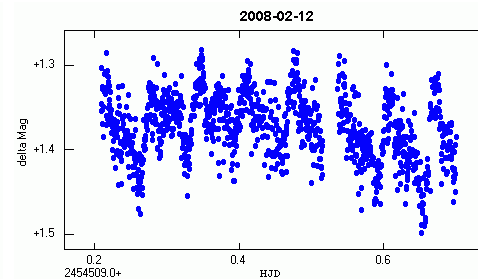
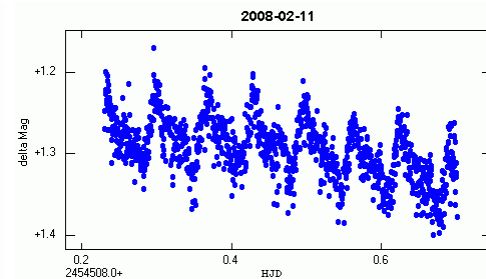
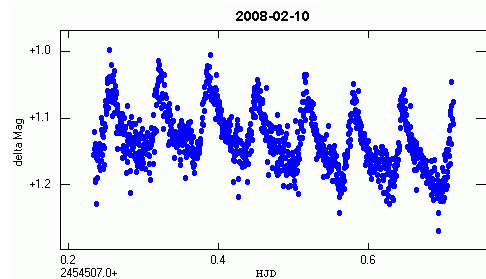
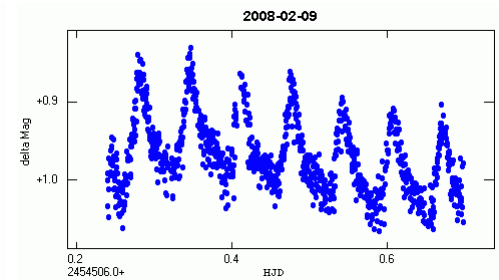
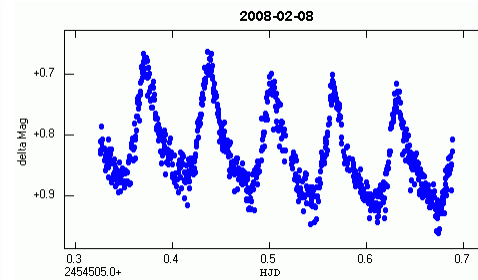
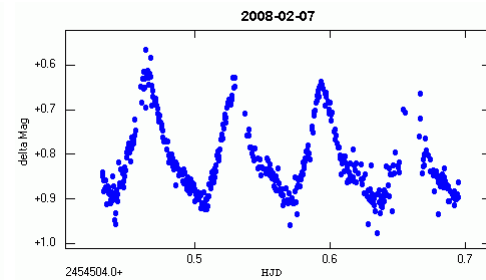
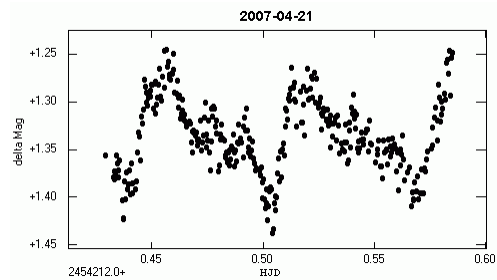
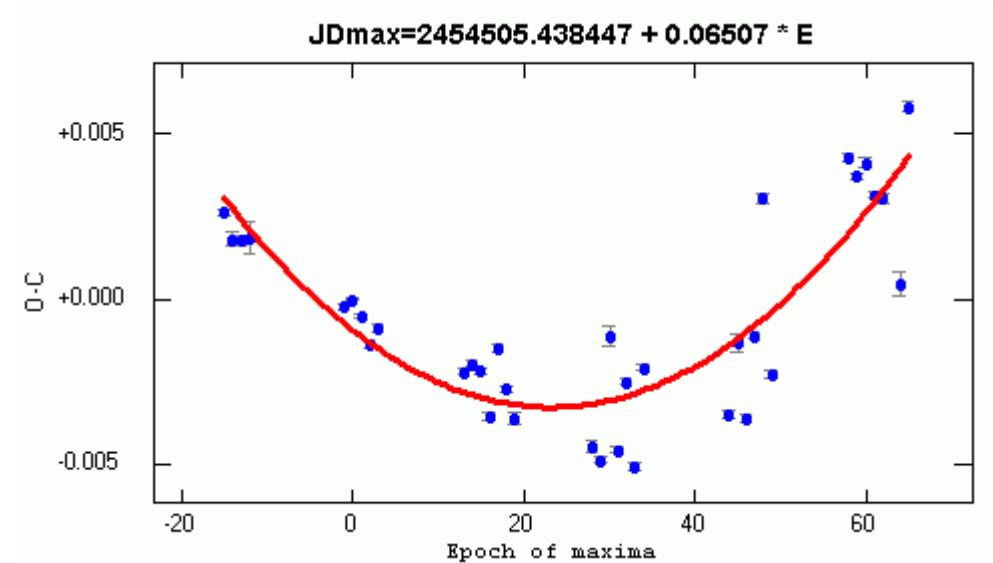
Mean comparison:

TYC3015-01662-1, V=12.20, B-V=0.47 (Henden, Honeycutt 1997)

Observed: **Psh = 0.0648d** [Porb = 0.06375d]

7 nights in February 2008

Observed: **Psh = 0.065070 +/- 0.000051d**



1RXS J053234.9+624755

6 nights in July 2006

Hugo 265/1360 mm & Pointer 300/2400 mm

Meade DSI Pro, Filter: V & Clear, Exposure 30 sec

Mean comparison: TYC4085-02448-1 V=11.20

(Henden, Honeycutt 1997)

Observed: **Psh = 0.057d** [Porb = 0.0562d]

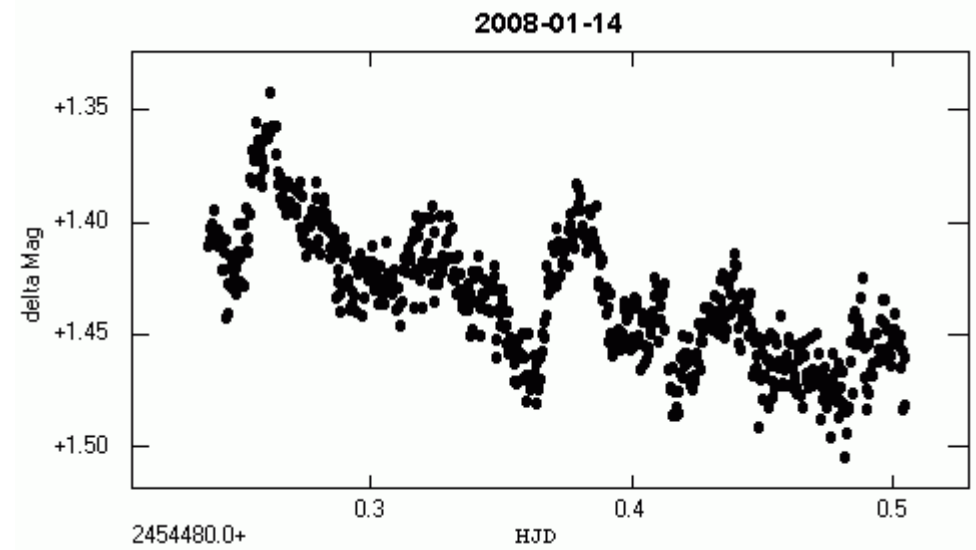
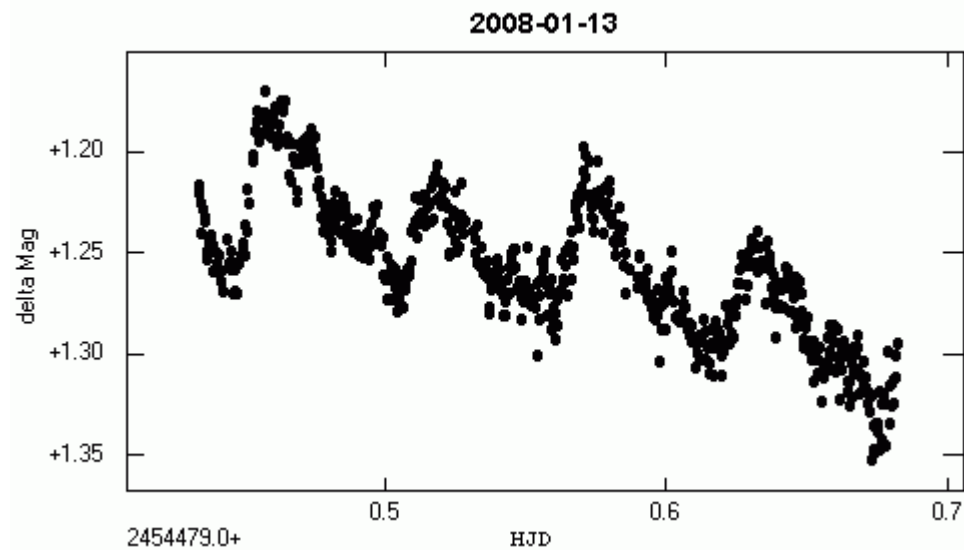
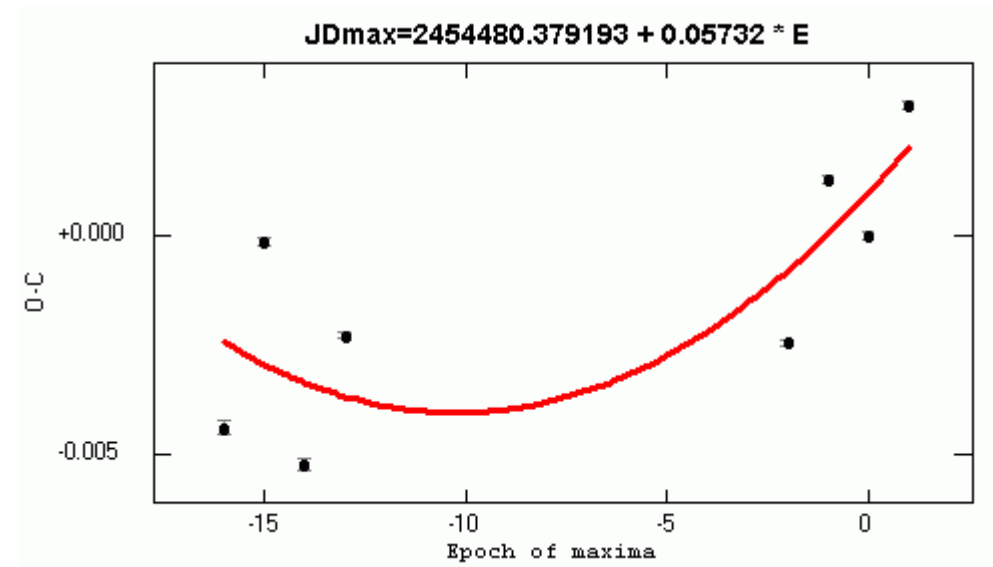
Published 2006 OEJV, 52

2 nights in January 2008

Pupava 280/1500 mm

Meade DSI Pro, Filter: V & Clear, Exposure 30 sec

Observed: **Psh = 0.05732 +/- 0.00023d**



CSS080505 = OT_J163120.9+103134

5 nights in May 2008

Pupava 280/1500 mm

Meade DSI Pro, Filter: V, Exposure 30 sec

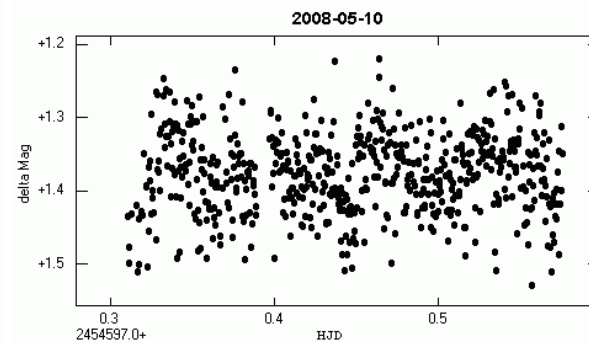
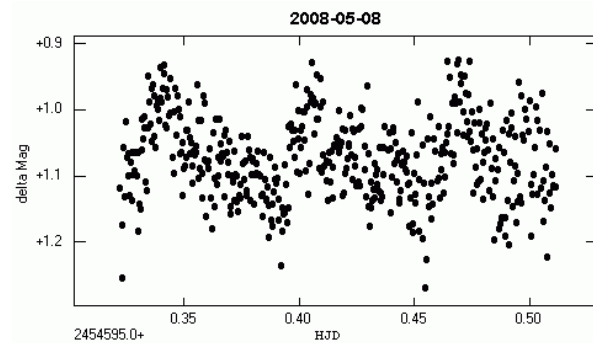
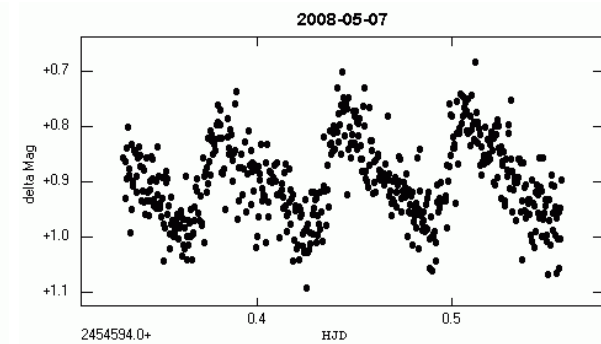
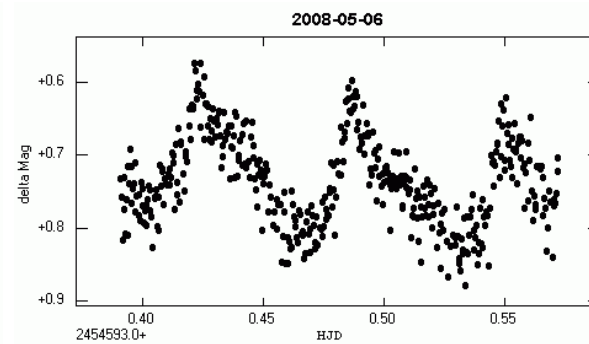
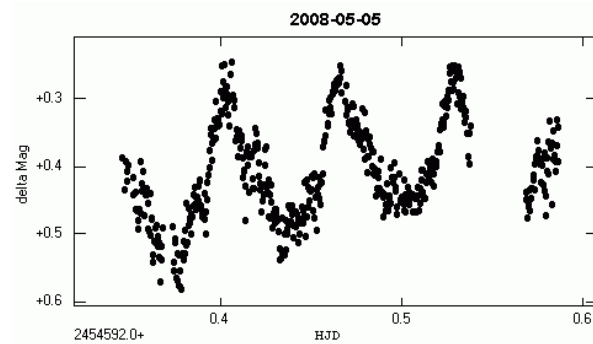
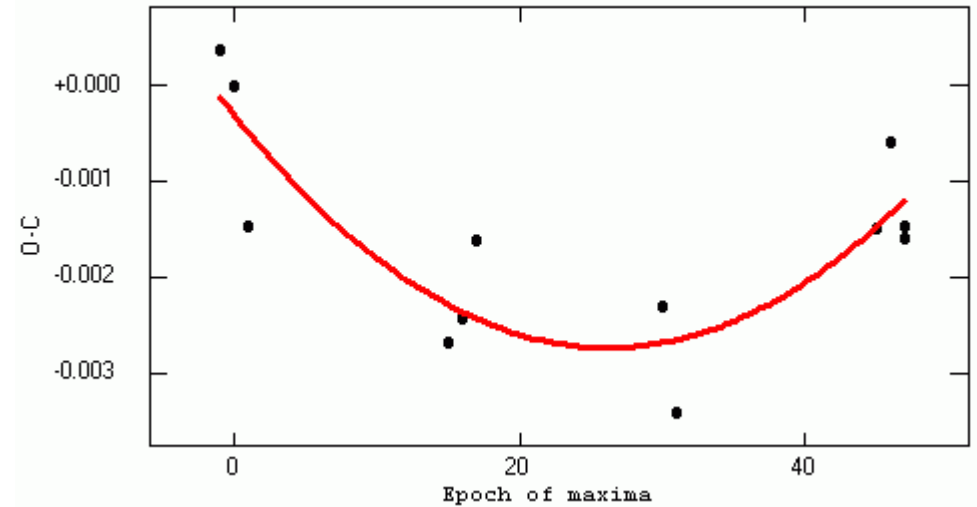
Mean comparison:

GSC 0964-0002, V=14.19 B-V=0.95 (from SDSS photometry)

Observed:

Psh = 0.06392 +/- 0.00013 d [Porb = ?]

$$JD_{max} = 2454592.466497 + 0.06392 * E$$



NSV 1485

5 nights in September 2007

Pupava 280/1500 mm

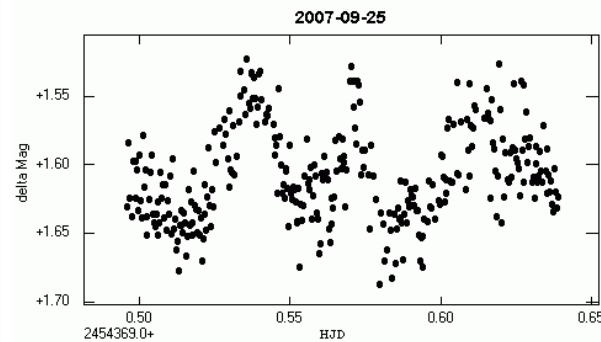
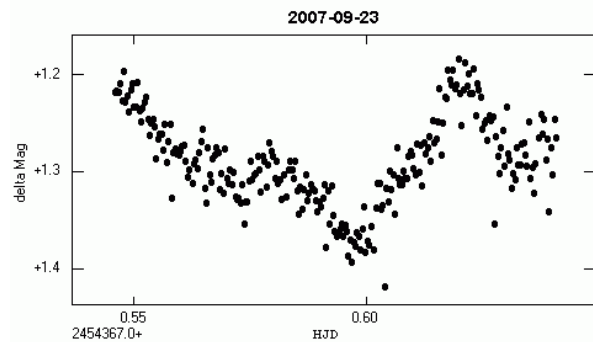
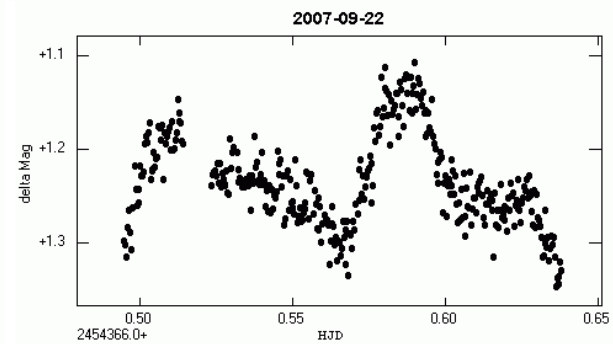
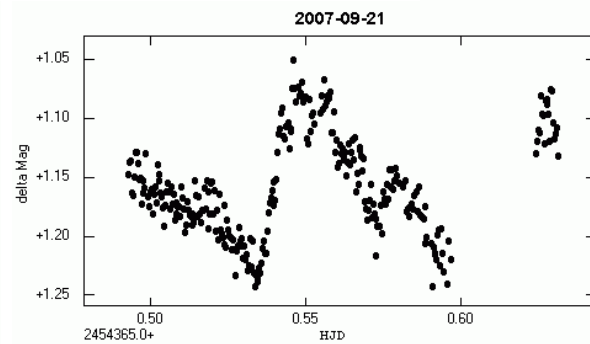
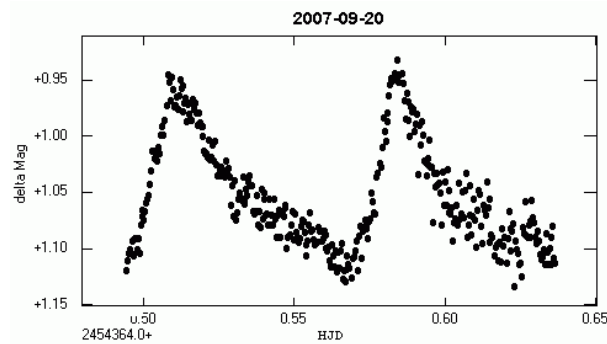
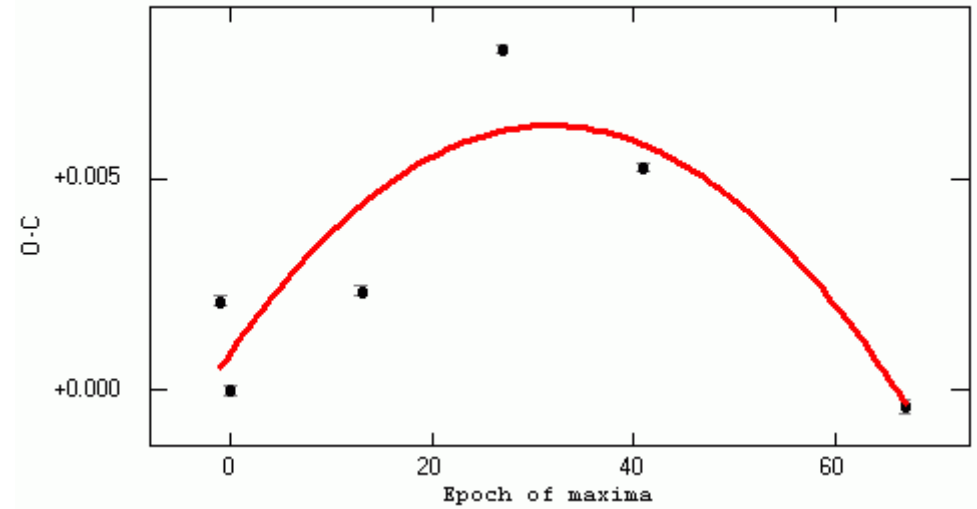
Meade DSI Pro, Filter: V, Exposure 30 sec

Mean comparison: V=12.60 B-V=0.66 (Henden, Honeycutt 1997)

Observed:

Psh = 0.073903 +/- 0.000069 d [Porb = ?]

$$JD_{max} = 2454364.584477 + 0.073903 * E$$



UV Per

5 nights in October 2007

Pupava 280/1500 mm

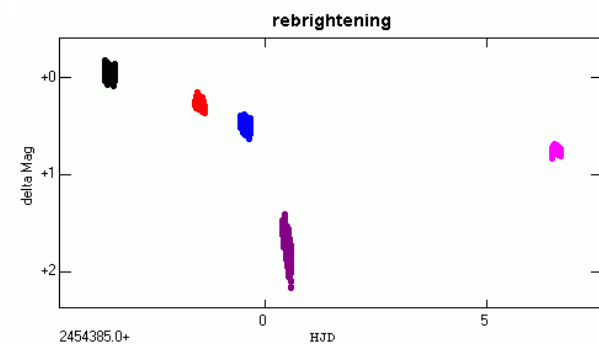
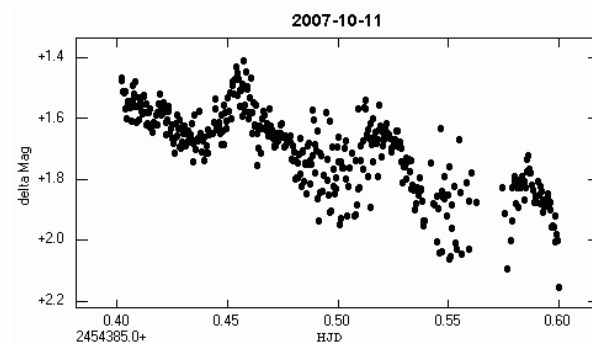
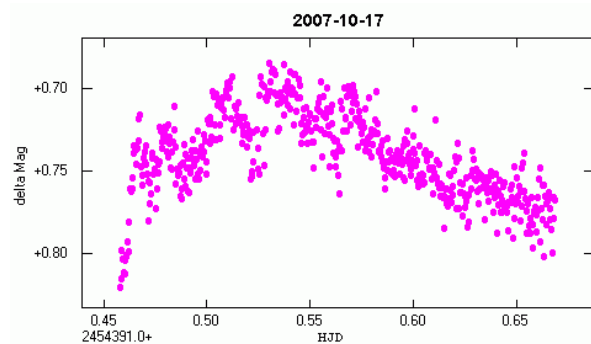
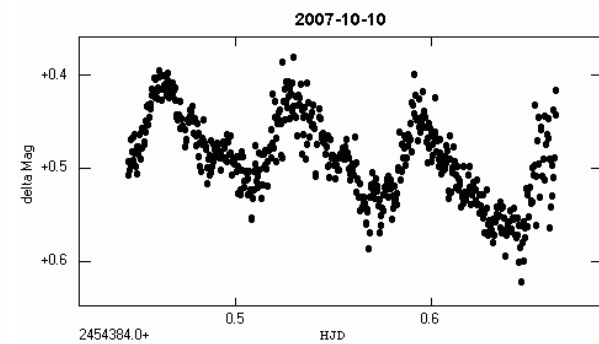
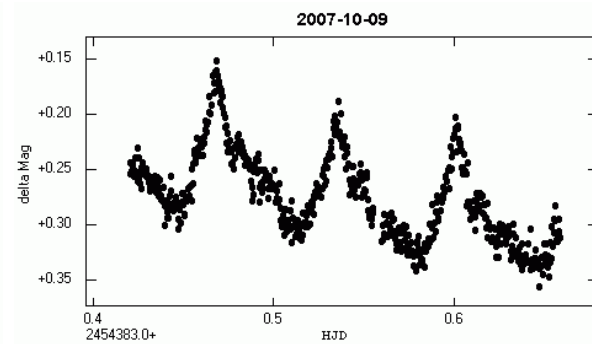
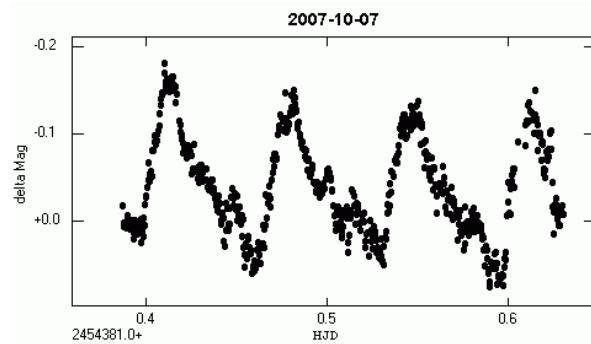
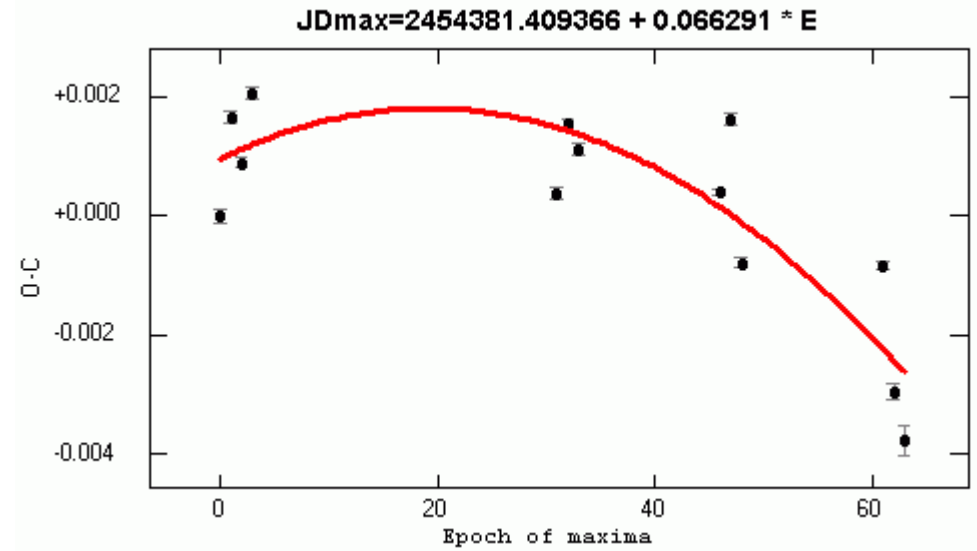
Meade DSI Pro, Filter: V, Exposure 30 sec

Mean comparison:

GSC 03693-01862 V=12.72 B-V=0.26 (Henden, Honeycutt 1997)

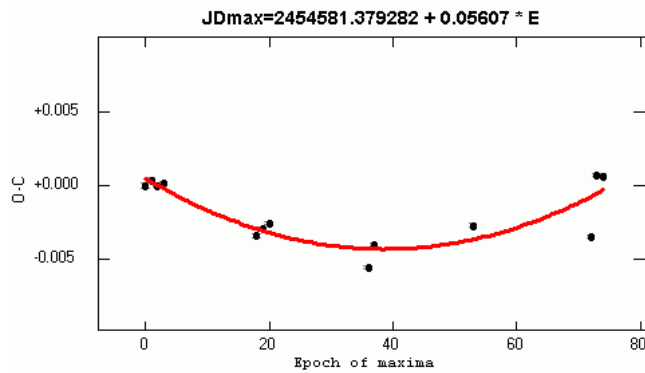
Observed:

Psh = 0.066291 +/- 0.000059 d [Porb = 0.0649d]

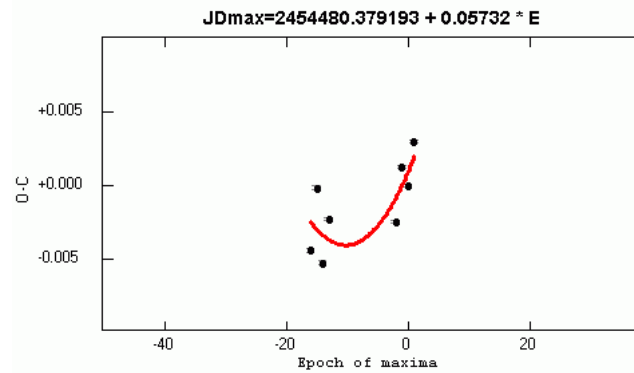


O-C diagrams in the same scale

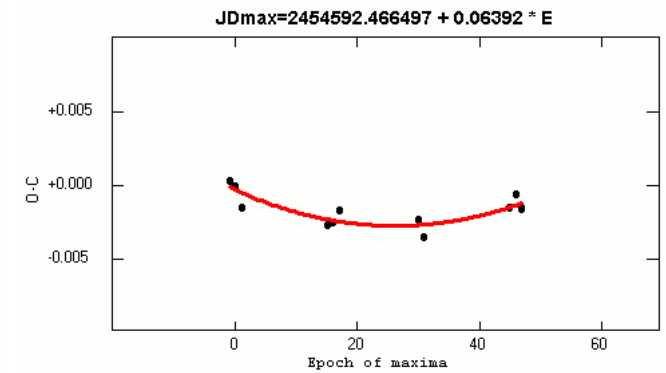
V844 Her
Psh=0.05607d



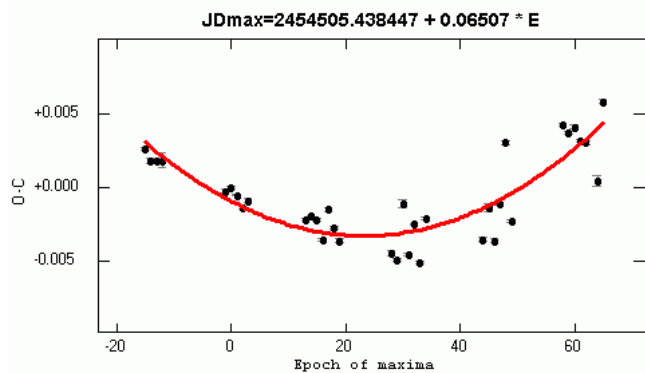
RXJ053234
Psh=0.0573d



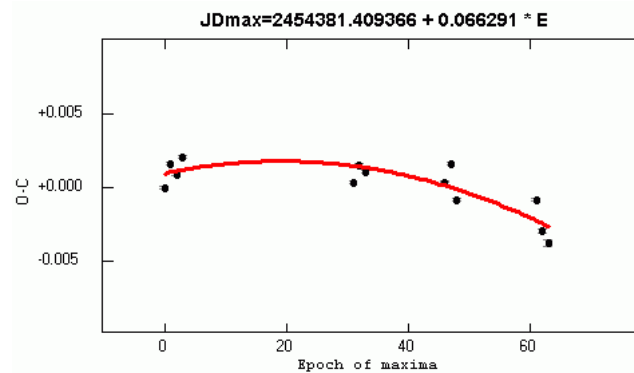
CSS080505
Psh=0.0639d



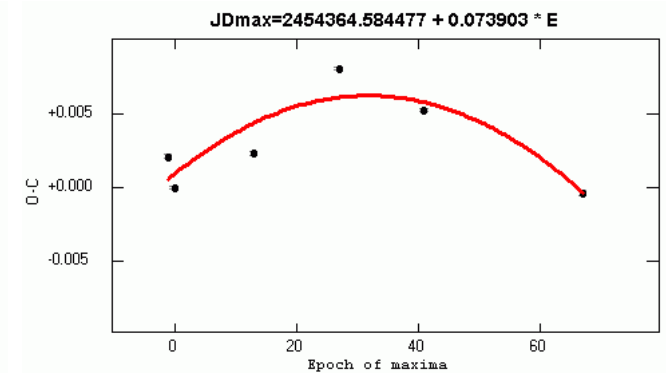
MR UMa
Psh=0.06507d



UV Per
Psh=0.06629d



NSV1485
Psh=0.07390d



Conclusion: In this small sample the best covered MR Uma is not in agreement with empirical law, which states that there is a borderline around Psh=0.063 days below which the superhump period tends to increase (Imada et al. 2005).

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Grant of the Slovak Research and Development Agency LPP-0049-06.

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