

# OBSERVATIONS OF CATAclySMIC VARIABLES AT KOLONICA OBSERVATORY

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**ABSTRACT.** We present a small sample of our observations of cataclysmic variable stars obtained at Kolonica Observatory. The presented data for CI UMa, MR UMa and SW UMa were obtained in 2006 and 2007. Our observations demonstrate that also the small telescopes with low cost CCD camera could be used for a serious and useful observations.

**Key words:** Stars: binary: cataclysmic; stars: individual: CI UMa, MR UMa, SW UMa.

## 1. Introduction

Observation of cataclysmic variable stars is a part of observing program of Kolonica Observatory, which is a part of the Vihorlat Observatory in Humenné. It is located on the east-north part of Slovakia near borders with Ukraine. The largest telescope at observatory is an 1m Vihorlat National Telescope equipped with 2 channel photoelectric photometer. Another smaller telescopes are used mainly for CCD photometric observations of cataclysmic variable stars and for minima times determinations of the selected eclipsing binaries. All our observations could be found at the web page of observatory: <http://www.astrokolonica.sk/> and data could be obtained from authors by request.

## 2. Used instruments

Our observations of cataclysmic binaries are obtained by two telescopes. The first one, called HUGO, is a Newton type telescope with 265mm diameter of the primary mirror and focus length 1360mm. The second one, called PÚPAVA is also a Newton type 280/1500mm telescope. The both instruments are placed on German equatorial mounts in the area of the Kolonica Observatory.

The observations were performed by MEADE DSI Pro CCD camera with Sony's ExView HAD Monochrome CCD Image Sensor. The resolution of

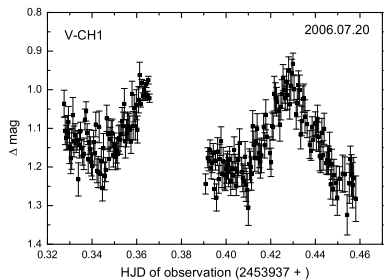
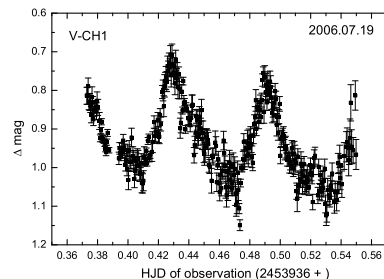


Figure 1: Light curves of CI UMa.

this camera is 508 x 489 pixels. The observations were obtained with no filters and were not transformed into the international system.

The photometric reduction (dark and bias subtraction, flat-field correction) of the obtained CCD images, as well as photometric measurements were performed by C-Munipack package (<http://integral.physics.muni.cz/cmunipack/>) and SPHOTOM package developed by the first author.

## 3. Observed objects

### 3.1. CI UMa

CI UMa was observed in 3 nights from July 19 to 22, 2006 with HUGO telescope just after alert from

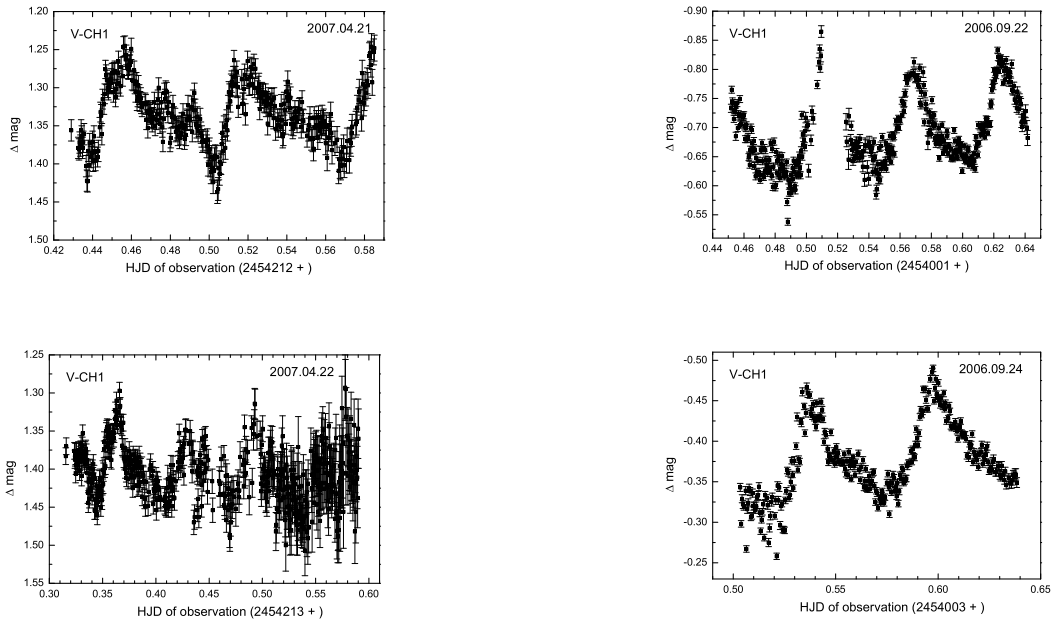


Figure 2: Light curves of MR UMa.

the visual observers. 30s exposure time was used for all observations. Superhumps were detected in two nights, as depicted in Figure 1. Observations from the last night were strongly influenced by clouds and was not usable for another analysis. Analysis of the obtained data was published by Parimucha & Dubovsky (2006).

### 3.2. MR UMa

MR UMa was observed in 2 nights, April 21 and 22, 2007. HUGO telescope was used for these observations and 30s exposure time was used. Light curves created from our data are shown in Fig. 2. During the first night, nice superhumps with complex structure were detected. The amplitude of light changes was about  $\sim 0.2$  mag. The end of the second night was messed by the bad weather conditions.

### 3.3. SW UMa

Well known cataclysmic variable SW UMa was observed in 3 nights from September 22 to 25, 2006 with HUGO telescope. 30s exposure time was used as well. Light curves from all three nights are shown in Fig. 3. During all nights, superhumps were detected with amplitude about 0.15 mag.

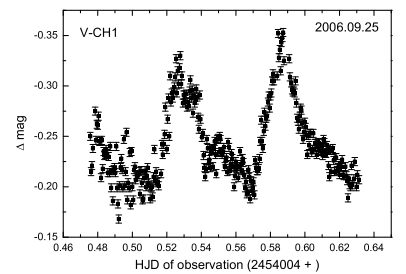


Figure 3: Light curves of SW UMa

## 3. Conclusion

Photometric observations of cataclysmic variables (e.g superhumps detection) are very important for the models of these objects. Our observations can demonstrate that small telescopes with low cost CCD cameras at small observatories could be also used for a serious and useful observations. The greatest advantage of such a instruments could be systematic observations of selected objects.

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## References

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