

First results from newly developed automatic video system MAIA and comparison with older analogue cameras

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New automatic video system for meteor observations MAIA was developed in recent years [1]. The goal is to replace the older analogue cameras and provide a platform for continues round the year observations from two different stations. Here we present first results obtained during testing phase as well as the first double station observations. Comparison with the older analogue cameras is provided too.

MAIA (Meteor Automatic Imager and Analyzer) is based on digital monochrome camera JAI CM-040 and well proved image intensifier XX1332 (Figure 1). The camera provides spatial resolution 776 x 582 pixels. The maximum frame rate is 61.15 frames per second. Fast Pentax SMS FA 1.4/50mm lens is used as the input element of the optical system. The resulting field-of-view is about 50° in diameter.

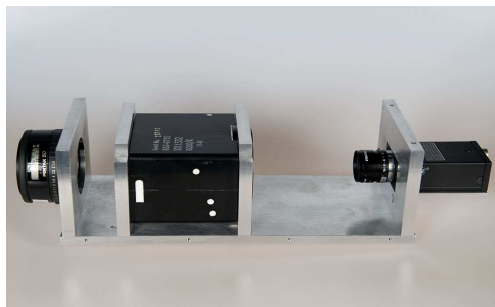


Figure 1: System MAIA inner housing with installed components.

For the first time new system was used in semi-automatic regime for the observation of the Draconid outburst on 8th October, 2011. Both cameras recorded more than 160 meteors.

Additional hardware and software were developed in 2012 to enable automatic observation and basic processing of the data. The system usually records the video sequences for whole night. During the

daytime it looks the records for moving object, saves them into short sequences and clears the hard drives to allow additional observations.

Table 1: Comparison of both older analogue and new digital systems

	old system	new system
camera	S-VHS	GigE Vision
resolution	420 lines	776 x 582
scanning	interlaced	progressive
maximum frame rate	25/s	61.15/s
maximum bit depth	8 bits	10 bits
SNR	40.2 dB	42.9 dB
field-of-view	45°	50°
stellar lim. magnitude	+6.5	+8.0

Initial laboratory measurements [2] and simultaneous observations with older system show significant improvement of the obtained data. Table 1 shows comparison of the basic parameters of both systems.

In this paper we will present comparison of the double station data obtained using both systems.

Acknowledgements

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References

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