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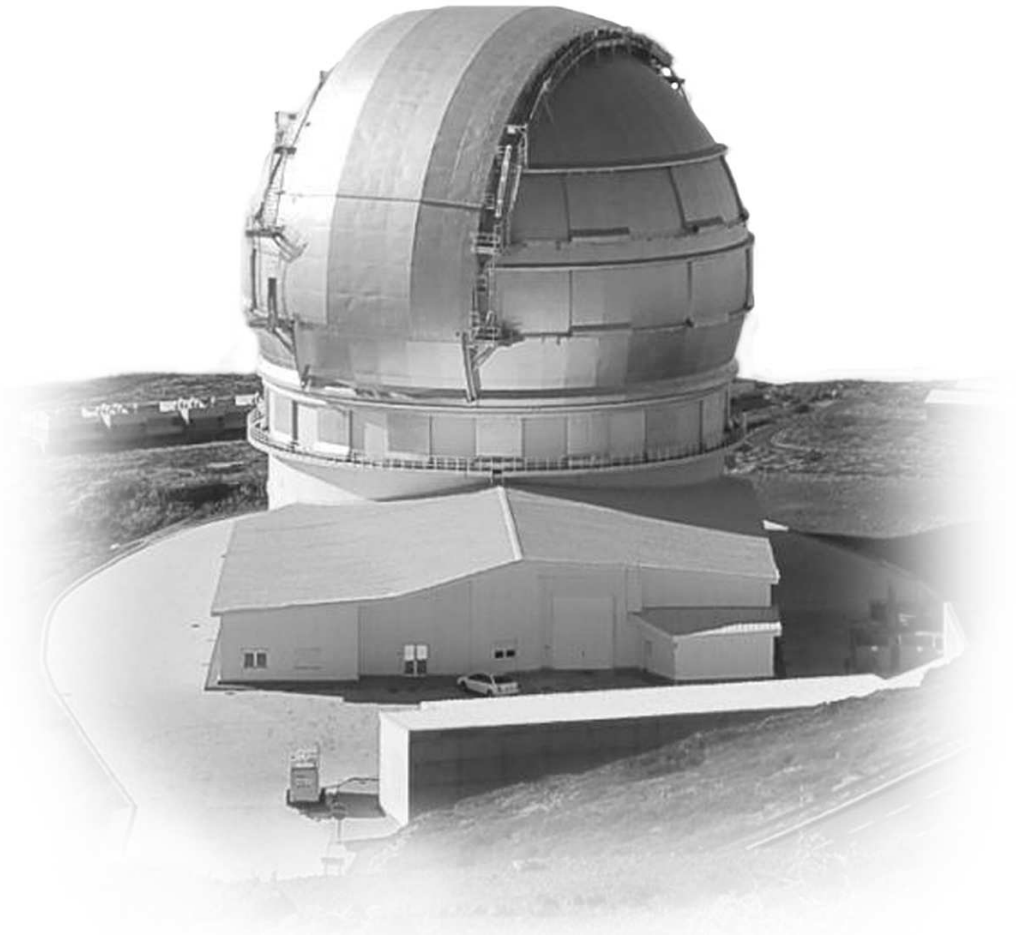

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Meteor camera network in Hungary: some considerations about its hardware

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Since 2009, an efficient meteor camera network was developed in Hungary. Its main characteristics are that it is amateur-owned and -operated, based on commercial security cameras, and part of the IMO Video Network.

1 Introduction

In 2012, the Hungarian meteor camera network consisted of a total of 14 cameras which are distributed all over the country.

In Figure 1, a composite of recorded meteors is presented. In Figure 2, the distribution of the cameras is shown on a map of Hungary.

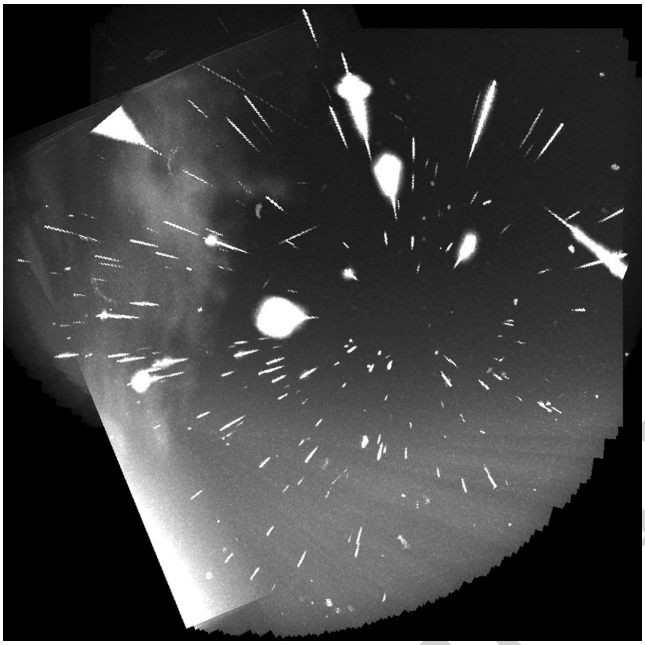

Figure 1 – A composite of meteors recorded by the Hungarian meteor network.

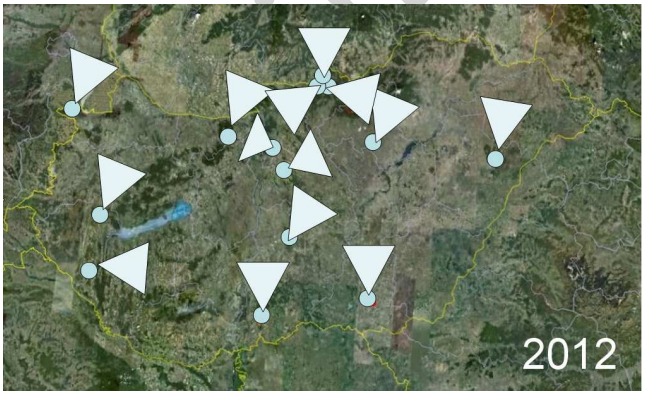

Figure 2 – Distribution of the camera network.

2 Waterproof camera box

We had some problems on rainy days and the solution was a fully waterproof outdoor electrical box.

Figure 3 shows the interior of the camera box and Figure 4 shows the external look. Figure 5 shows how a hole was cut for a regular photo UV filter. All edges are sealed with sanitary silicon.

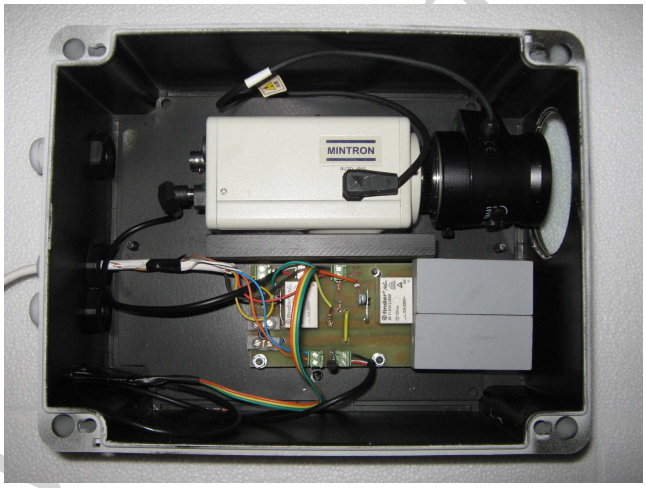

Figure 3 – Interior of the camera box.

3 Comparison of cameras

Below, we compare the cameras in the Network.

3.1 Watec 902 H Ultimate

Advantages and disadvantages (6 cameras):

1. compact;
2. apparently very sensitive;
3. manual gain screw is very difficult to handle; in fact, it should be adjusted each night, as on cloudy nights or in moonlight a lower value is desirable;
4. price/performance ratio is disappointing (ca. 300 EUR);
5. in the long run, the detection efficiency is *not* very convincing.

Figure 4 – External view of the camera box.

Figure 5 – Opening cut out for the UV filter.

Figure 6 – Watec 902 H Ultimate camera.

3.2 Mintron 12V6

Advantages and disadvantages (4 cameras):

1. also very sensitive, has 2× integration;
2. big random difference between identical type cameras from different sources[1]; on some of them, we noticed vertical stripes which are independent of the grabber;
3. quite expensive (ca. 400 EUR);
4. detection efficiency "at lucky cameras" are by far the best, also confirmed by our IMO admin work when we compare with other Mintron cameras, for example in Italy.

Figure 7 – Mintron 12V6 camera.

3.3 KP&C 350BH

Advantages and disadvantages (4 cameras):

1. very cheap;
2. very sensitive;
3. only 1/3" chip;
4. surprising detection efficiency, but with a good lens it is very close to the Watec;
5. pricewise, this camera beats all competition, at only 100 EUR.

Figure 8 – KP&C 350BH camera.

[1] We purchased these cameras from two sources, `www.modernastronomy.com` and Schneider Electric.

4 Comparison of lenses

The following lenses are in use on our video cameras. We must observe that Computar lenses are not produced any more, and very difficult to get, even on Bbay.

1. Computar 6 mm: excellent, very high detection efficiency; we have only two cams with this lens;
2. Computar 3.8 mm: excellent, circa $90° \times 70°$ FOV; we have 3 Mintron/Computar 3.8 mm configurations, all three of which perform differently, probably due to the different sensitivity of the Mintron CCD;
3. Computar 4 mm $f/1.0$: 1 configuration;
4. Fujinon 2.8×2.8: 3 configurations;
5. Goyo GADN1308095BS4 $1/3''$ 3–8 mm $f/0.95$ ($f \approx 3.2$ mm): 3 configurations;
6. Panasonic 6 mm: 1 configuration;
7. Panasonic 4.5 mm: 1 configuration.