

10 Micron 1000 HPS

Kindly of the company [Baader Planetarium](#) and Horatiu Fluieras from [Starmax](#) I had the possibility to test the equatorial mount 1000 HPS produced by 10 Microns on [astronomy.ro meeting at Plaiul Lisei](#) from May 23 to 25, 2014.

This small category mount can carry up to 25 kg and it is addressed to astronomers who make no compromise when it comes to quality and do not want to do astronomy with large instruments.



The mount comes in a lining that can accommodate to a carrying case and no need to buy the special box for transport that cost from € 155.



The saddle of mount supports both Vixen and Losmandy standards which is a great advantage especially for those who have several models of telescopes.

At first glance is impressive, materials are very high quality and the design draws you in from the first moment.

The controller is large and beautifully lit, you can't miss it in dark, the buttons seem a little too big but respond well to commands and the menu is not complicated, you can learn it quickly.



First night, 23-24 may 2014

In the first night, I was familiar with the mount, I opened the box, I installed it, I balanced it, but I was wrong the time settings and the mount was set to 2 hours before local time, which gave me some large errors on calibration.



300" exposure unguided

I also had problems with clouds. They came, they went, they cover the calibration stars and finally come and have never left at all.



Second night, 24-25 may 2014

Announced clean since the day when it rained a little, then the clouds began to dissipate.



After several unsuccessful attempts I found the error on local time and after I fix it things began to unfold in the most beautiful way possible .

I started with rough polar alignment of the mount when I directed her towards the North Star using my RDF mounted on William Optics refractor .

I continued with 3 stars align procedure where, to my surprise, alignment stars appear in the visual field of the camera wich has $2.87^{\circ} \times 1,91^{\circ}$ on my setup .

I refined the alignment with 10 stars and for my surprise the handpad show me the RMS error in minutes and seconds of arc after each refined star centred on reticle with handpad buttons. Well, this RMS error decrease after each refining star added. I have added only 10 stars for refining my alignment because the short time I had at my disposal, but the maximum number is 25.

Then I applied the polar alignment routine from controller and I realigned with 3-star. The second 3-star alignment was flawless because I didn't do any adjustments with buttons, the mount put the stars right in the center of reticle. I added another 10 stars to refine the alignment . Finally , I checked the polar alignment error and was somewhere near $10'$. In those conditions , especially given the limited time I had available, I think I did it very well . I didn't had time to test [Per Frajval's Model Maker](#) to make the alignment model.

These are the tests:

- Refractor William Optics 90mm F/6.2
- Corrector/Reducer TeleVue TRF-2008
- Ultimate 600D
- In **PixInsight** I cropped an 1:1 from center of image.

Test 1 – 300" exposure unguided – M106



Test 2 – 600" exposure unguided – M106



Test 3 – 900" exposure unguided – NGC 6960



Conclusions:

The stars from central part are almost perfectly round. Downright impressive exposure especially for the 900" one.

What I like:

- Opening and understanding that I received from the company Baader Planetarium and whom I thank this way.
- Quality of materials.
- Very easy assembly and ease of use.
- Balancing routine that helps the mount for a perfect swing.
- The aligning procedure although it takes a fairly long time is very accurate and the controller lets you know how's RMS error which is very useful for accuracy in astrophotography.
- Polar alignment is very easy and not necessarily need the North Star.
- Atmospheric refraction compensation function.
- Function that correct the tube flexure and cone error.
- 900 seconds exposure unguided think that says it all about what is able to do this mount.
- Maximum slew rate is 15° however mount is very quiet; at normal slew speed of 7° you hear almost no sound.
- The mount controller can connect to a computer via an Ethernet connection, making it ideal for automated systems.
- I had the opportunity to do a speed test because a colleague own an ASA DDM 60 mount and 10 Micron 1000 HPS did very well, reached the chosen star almost simultaneously at maximum speed.

What I don't like:

- The cable between the mount and the controller is too short, I haven't measured but has no more than 30 cm. I understand that the system is designed to hanging below the mount but at some tripods this is not possible, and some users who have mobile astro systems would want to protect it better.
- Mount that I tested did not have the power cord, do not know if it comes from the manufacturer or was an oversight. The fact that has no power source like standard I only mention it here, no longer comment, but it seems to me a wrong marketing approach although I understand that the same policy exists and competition.
- I wanted to find on CD an astrometric alignment software but it was only an firmware.
- The purchase price is prohibited for the socio-economic conditions in Romania.

