Askar 107PHQ review

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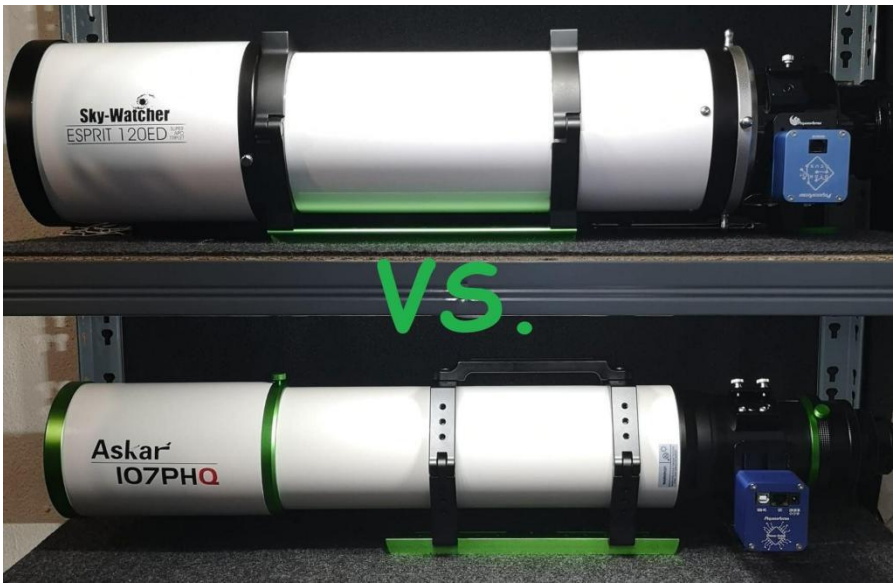


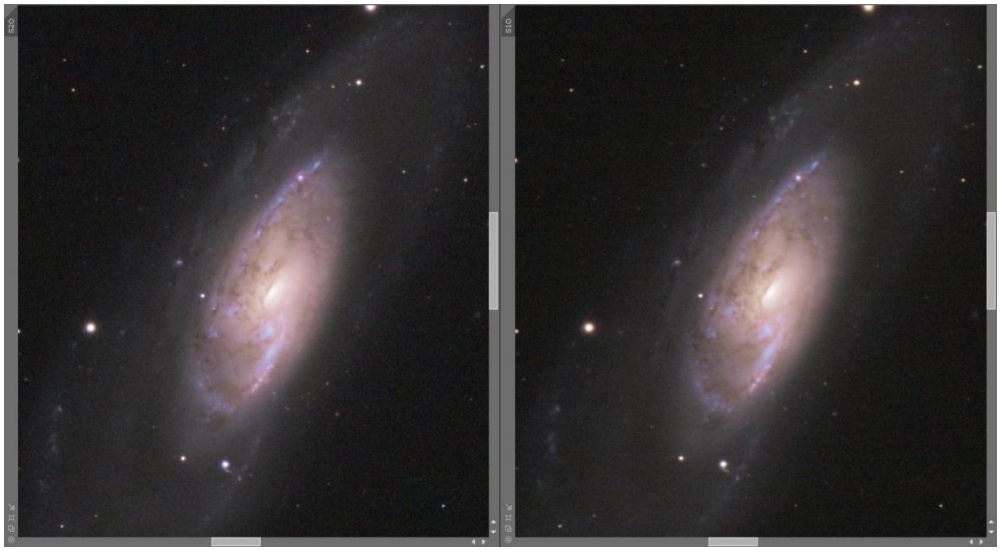
I was asked a lot by my friends what I think about the Askar 107PHQ also in comparison with the Esprit 120ED, so I decided to write something about my experiences with both scopes.
But first, I am not a designer of optical instruments or scientist, providing you measurements or give you a lot of numbers to think about.
I just want to show or make more clear what I see while looking at pictures of different scopes.
While thinking about a second scope next to my Esprit 120ED for side by side setup, Askar came up with the all new 107PHQ, also f7 and only about 100mm less, so 749mm focal length.
Price was interesting for me as the Quadruplet already comes fully corrected up to full frame sensor (so no expensive additional corrector needed).
I decided to give it a try and was very satisfied with the overall build quality and the first images taken with it looked superb.
Askar did not promise too much there, the field was flat over the entire FOV.
For me, the Esprit 120ED was the best scope I owned so far, so needless to say I wanted to compare the two scopes as they should work side by side in the future.
Askar 107PHQ Quadruplet vs. Esprit 120ED Triplet incl. flatfiel corrector.
I used to OSC cameras with the same pixel pitch, 16bit at same or equal Gain Settings (Gain 0).
So there was no advantage for one of the scopes using a higher gain or special settings.

Both stacks were cropped to the exact same field of view, APS-C format (just cropped the edged because of dithering artifacts).
Also, there was color correction done after removing gradients caused by lights in my
However, at this point, I want to mention that the 107PHQ has a bigger corrected FOV for

Full frame than the flattener of the Esprit 120ED can provide. It is not much but visible in the corners of the single frames and gives the Askar 107PHQ slightly an advantage there. Tested with a IMX455 OSC.

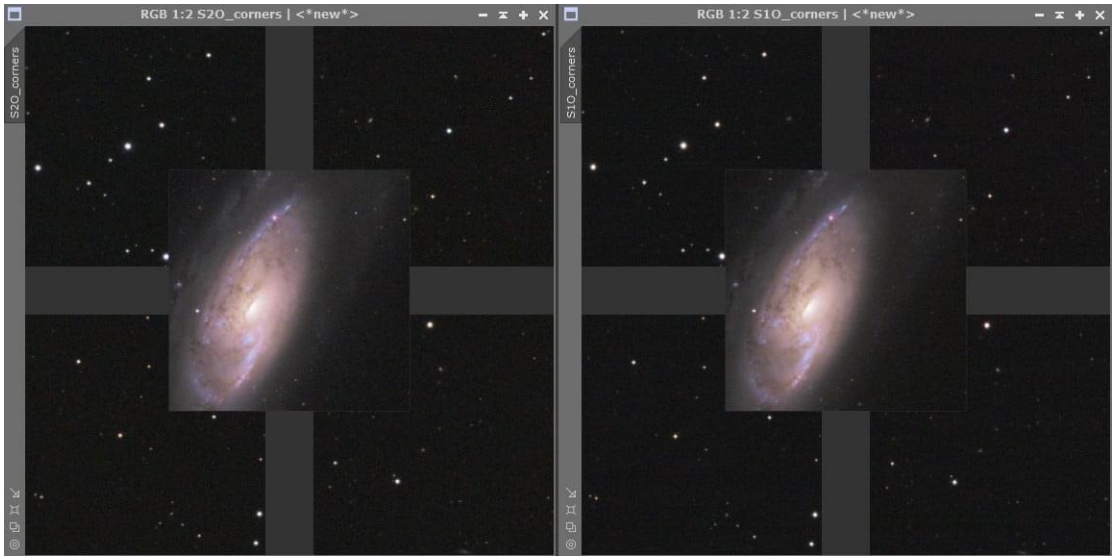
Unfortunately, I cannot show a real full frame picture taken with the Esprit 120ED here, as I messed up the correct distance of the camera to the Esprits corrector.
Another advantage of the 107PHQ where you don't have to care about this as there is no special distance you have to think about.
If you are in focus on the 107PHQ field is automatically flat independent of filters or anything else in the image train.
Image comparison / Pixelpeeping (Stack ONLY! no further processing except the above-mentioned):
I captured 72x300s with each scope at the same time, so 6h of total integration on each stacked image.

1. shows the both field of views of both of the scopes.



2. shows a 1:1 (100%) view of M106

3. show the 3 bright stars in the upper left of the FOV. A few Esprit users maybe already have an idea which image was taken with the Esprit at this point.



4. shows the center and the 4 corners of the pictures of both scopes.

5. details of hidden treasures in the pictures.
S20 is always Askar 107PHQ (left image)
S10 is always Esprit 120ED (right image)
My personal impressions:

Resolution:
Both Scopes have a very good, perhaps even the same resolution of details even if the Esprit has a slight advantage because of the wider opening and focal length.
Possibly this is only on the paper, as seeing usually limits the maximum possible resolution.
Anyway, for me, there are no differences visual on the first look.
Askar promised to have a scope created that can capture details even at high magnification, they kept their promise!

Star shape:
Star shape of both scopes is very good and well corrected.
Like some other apochromatic refractors the Esprit has a well known problem at low temperatures when the lens cell shrinks and forces the adjustmentscrews to press onto the side of the lens that causes a kind of spikes or shadows on brighter stars.
The 107PHQ doesn't have this issue as it seems.
On the other side, stars seem to be a little more compact on the images taken with the Esprit.

Star color:
Of course, both scopes are effected from atmospheric distortion, so it is always hard to judge this on the real sky.
Askar is very fair here and shows the spot diagramm of the 107PHQ. This says the stars do have a redshift away from the optical axis.
In reality this is hard or even not visible. Maybe when using cams with really tiny pixels

like a IMX183C, but this would mean oversampling at this focal length anyway.
This isn't a real problem in post processing, both scopes have slightly color errors but perform very well here (Pixelpeeping).

Possibly this all reads like a lot of pros for the Askar 107PHQ and well it is hard for me to find real advantages for the Esprit 120ED at the moment.

Askar has a scope here that performs very well and very similar to the Esprit 120ED with a few advantages:
-lighter than the Esprit, overall 3.5kg less
-at the moment cheaper where I live than the Esprit 120ED incl. the needed corrector, so round about 420 EUR less.
-no need for taking care about a correct backfocus, even when inserting a filter in between. Refocus, and you are done.
-nice and round star shape out of the box even at cold temperatures

My personal conclusion:
The Askar 107PHQ has a well-earned place next to the Esprit 120ED and I will do further imaging and comparison in the future.
Also, I will combine the raw files from both to a final image in the end, as this is their purpose.
If I wouldn't have the Esprit 120ED already, I probably would tend to buy another Askar 107PHQ.