

## Megrez ED triplet APO



versus



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&  
Fred Hissink

## Megrez Fluorite Doublet

**The big world of Apochromats, Extra low Dispersion and Fluorite is still a very confusing one; especially if you throw in some more marketing terms like SD, Fpl-53 and Super APO. It is difficult to understand the supposed differences with regard to color correction, but it is sometimes even harder to see those differences in the field. According to some optical experts, there should be a small difference in the degree of color correction between the Megrez ED triplet APO and the Megrez Fluorite Doublet (in the rest of this article referred to as 'Megrez ED' and Megrez FI.)**

After some investigations on the Internet we found out that a direct comparison had yet to be made, so we decided to put the two 'boys' up to the test. Comparing two scopes is a difficult task. We were about to compare a doublet and a triplet, with different optics and coatings. But the idea was to get an overall impression of the differences and perhaps similarities of the Megrez Brothers.

It is important to point out that we carried out visual tests only, so we do not have any photographic data. To make a direct comparison of the images possible, we put both scopes together, like we wanted to build a 'Megrez binocular system'. Both scopes were mounted on a Vixen Porta Mount.

We started our tests 40 minutes after the scopes were brought into my dark backyard, in order for them to reach a decent stage of thermal equilibrium. Terrestrial influences, like heat radiation

caused by a roof or road, were eliminated as much as possible. Both scopes were fitted with the same diagonal, eyepieces and a Barlow; to be specific, a Tele Vue 32mm plossl, 12mm Radian, 9mm Nagler, 7mm Nagler and a Tele Vue 2x Barlow. The first thing we noticed was the fact that the Megrez ED was jaggging behind in terms of thermal equilibrium. The Megrez FI. had a quicker adaptation to the outside temperature; the ED is a triplet and the FI. a doublet, so this could explain the differences in cool down-time. Anyway, after 40 minutes we decided to start the battle of the scopes. The moon was floating in a transparent sky, so we had a perfect volunteer for the first test.

### Show me the moon

The images through both scopes were identical at low magnifications. Because of the high transparency, the Megrez Brothers showed us not only the ashen light, but also the seas, craters and mountains. The illuminated part of the moon displayed a wonderful view, without any ghost-images or nasty reflections whatsoever. We placed the moon just outside the field of view and saw no 'incoming light' from the approaching moon. The moon showed no chromatic aberration in either scopes and we could not detect any difference in the views at magnifications of 17,5x and 50x.

But, something happened as we increased the magnification; the Megrez FI. seemed to give a 'fresher' image at higher powers, as if someone had added a few more millimetres of aperture. Both scopes

showed the same details; we saw sharp and black shadows running across the moon's surface, craters with very fine structures and as mentioned above, topographic details in the ashen light. But, the Megrez Fl. gave the impression of providing a slightly sharper and brighter image. Not much, but just enough to be noticed.

After two hours of testing, seeing conditions improved and the differences between the scopes were less pronounced. This indicates that when the quality of seeing increases, the difference between both scopes becomes smaller; this means that the apochromatic performance and the sharpness/freshness of the image are nearly the same in both scopes when there is almost no atmospheric turbulence.

### **APO performance?**

Talking about apochromatic performance, let us get to the point: there is no sign of false color in either scope at low magnification. As we increased the magnification, the Megrez ED continued to give us color-free images, but the Megrez Fl. didn't follow the footsteps of his twin brother. In fact, the Megrez Fl. showed a slightly red rim around bright stars and a red haze around the edge of the moon. Again, the difference was not much, but noticeable.

### **High powers**

Both scopes are unafraid of high powers; at the end of our session we took some Vixen Lanthanum (LV) eyepieces and used so-called 'empty magnifications'. But, empty or not, both scopes swallowed 300 times without any problem! At this magnification, the image of the moon was still very pleasant! The images of Saturn confirmed the quality of the seeing, as mentioned above.

Both scopes provided wonderful views; the Cassini Division was clearly visible as a dark line and the color difference between the A and B ring was obvious.

Subtle details were visible on the equatorial belt and on this evening high magnifications could be used. The Megrez Fl. showed a somewhat crisper image at moderate seeing, but at moments of good to very good conditions the Megrez ED

gave us identical views. There was no red fringing around Saturn when viewed through the Megrez Fl., but this might have been because it was relatively dim compared to the moon.

### **Deepsky**

After the moon had disappeared we tried a few deepsky-objects. M3 in Canes Venatici was a beautiful target and showed a faint mottling at the edges, as if we were looking at a sugar pot. Sometimes individual stars were popping into view. There were no differences in the views through either scopes; the light distribution on the surface of the globular cluster and the 'white' appearance were identical in both scopes. We picked a few other DSO's that night, but with the same results.



### **Who's the winner?**

Well, both scopes are absolutely top-notch, so in fact they are both winners. But, there are subtle differences between them: the Megrez ED has a better color correction and is in fact totally free of false color. The Megrez Fl. has a sharper and brighter image at higher magnifications; possibly because of the Super Transmission Coating (STM) These differences are more apparent under bad or moderate seeing conditions. It is hard to separate the images of both scopes when the seeing is good or excellent (although we 'only' had moments of good seeing during our test)

### **Summary**

So, should you moan about the fact that your scope has a lens with fluorite-particles and not a 'real' fluorite element? Do you want to sell your scope because it is a doublet APO and not a triplet? Do you want a Megrez Fluorite Doublet instead of a Megrez ED triplet APO now you have heard this story? No, we don't think so... Bear in mind that both scopes are excellent performers and the price-to-quality ratio is unbeatable! Enjoy the views through your triplet or doublet and remember: it is not only the telescope that will give you a satisfying night under the stars; but also the perseverance of the observer that matters!

