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The Megrez 80 II ED triplet APO, an affordable APO with pleasant surprises

By [fred hissink](#) - 10/26/2005

Why does one want an apochromatic refractor? They are expensive and you need at least 4 inch of aperture to capture some interesting objects, right? No, not right at all! I am aware of the fact that the word "apochromatic" has a magical sound to it and



The Megrez 80 II ED triplet APO

that no wonder: we are all familiar with the colors around bright objects that conventional refractors provide. In the recent past, only expensive refractors with special low dispersion glasses could eliminate these annoying side-effects of refraction. But, not anyone could afford such an instrument...

So, until recently, the magic around color-free optics couldn't be touched by many... But, that history now, because William Optics has brought excellent, color-free optics down to earth for a very nice price; it is an affordable telescope that deserves a serious consideration when you are looking for a high quality apochromatic telescope. The Megrez ED triplet APO proves that it is possible to get the images you dreamed of, without harming your piggy bank.

Beautiful appearance

William Optics has a history of very good optics and mechanics, so it really no surprise that the Megrez 80 II ED triplet APO represents the company trademark in a similar way. The OTA is build like a Mercedes; very decent materials, no plastic parts at all and the design is a very attractive one. With such a design you don't have to be an experienced amateur to recognize the high quality. For instance, let's take the focuser: it rotates, so the user can easily change the orientation of the eyepiece or camera. You don't have to move your body in strange positions anymore, just loosen the knob on top of the focuser and put it in the right position...

Speaking about the focuser: it is a high quality Crayford with adjustable tension. Focusing this scope is so easy and the focuser moves like it has been oiled! There is another part of this scope that moves, or should I say "sliding"? Like the focuser, the retractable dewshield is a mechanical piece of art. It is easy to use and above all, very practical.

The optics

I purchased the Megrez on a Friday, and on my way to the William Optics-dealer I was hoping and praying for a clear evening and night... Later that day the clouds slowly, but surely rolled away and a clear sky revealed

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itself. The moon, two days after first quarter, stood low in the southern sky. I could hardly wait to get my first view and wondered if the Megrez 80 II ED triplet APO would surprise me?br /> And it did! Simply put, the moon was just an awesome sight in the Megrez; a razor sharp image without the annoying colors! With a magnification of 17,5 (TV plossl 32mm) the edge of Luna's disk was not blue, violet or yellow and the edge showed a sharp contrast with the black background. This was the view I wanted to see! A crystal clear, detailed and Hubble-like image and no colors at all! Thank you! The Megrez also performed very well at higher magnifications. Again, there was not a trace of color visible and I got the happy feeling that I had bought myself a real Apo-performer!!! I looked into the eyepiece again and again, what a terrific addiction!

This little scope really has excellent optics! Although it's not an instrument for use at high powers, the Megrez can and will deliver if you put it to the test! On a nice evening in August, with the moon low in the sky, I observed the craters and seas with a



This sign stands for color free optics and high contrast images. Maybe this transfer shouldn't be made out of paper, because it's not in balance with the outstanding quality it represents... (Photo made by the author)

magnification of 250?Of course the seeing was not too good, but what I saw made my heart jump! Details were easily visible and the views remained sharp at steady moments... The image at this magnification was quite impressive and only a slight hint of yellow could be seen on the moon limb... But, since Luna was just 15 degrees above the horizon, some atmospheric refraction could be expected.

During the next opportunity in September, three days before full moon and with better seeing, I got the strong impression that the Megrez can take more than 250 times... Higher magnifications are definitely possible, but normally the average seeing conditions will not tolerate the use of high powers.

Baffles

The bright moon didn't cause annoying reflections; these little ghosts, floating in the image at places where you don't want them to be... You probably don't want to see ghosts at all and that's why the Megrez has seven baffles. I placed a full moon just outside the FOV and there was no glare or ghost visible. The images of the short-tubes I used in the (recent) past always had ghosts, but this baffle-system is a very sufficient one! It's made out of a special flat back foam to catch all the uninvited photons.

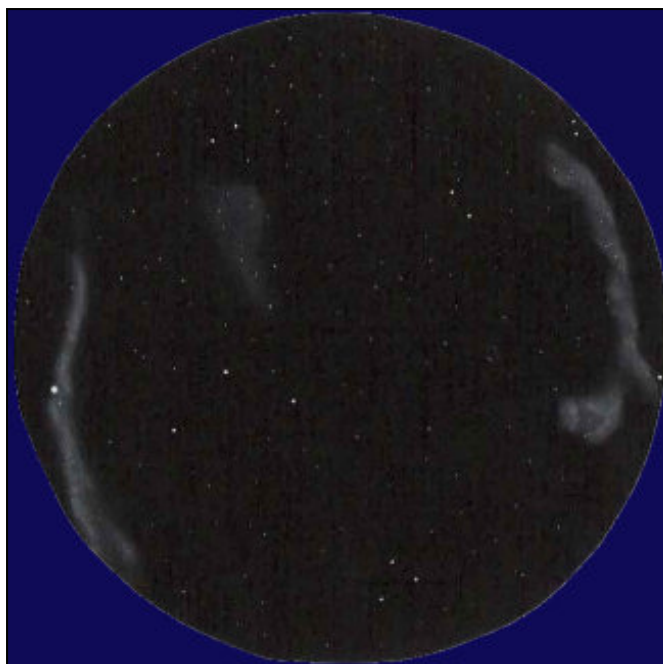
Deepsky

The Megrez is a perfect scope for observing deepsky-objects. Don't think 80 mm isn't enough for serious views, because if you take your time (always take enough time when you're observing) this scope will deliver another surprise; on an evening in August, after some heavy rainstorms, the sky had become very transparent. I took the Megrez out into my backyard for a deepsky tour. Finding objects with this instrument is very easy and you don't need a finderscope; with a 32 mm eyepiece there's a FOV of nearly 3 degrees, so in fact the scope itself acts as a superfinder! Imagine the view I've had of the double cluster in Perseus? Stars were sharp across the whole FOV, even at the edge and the cluster gave the impression of scattered diamonds on black velvet. Scanning the Milky Way with a magnification of 17,5 x was a true delight and I found many open clusters which I had never seen before?

M 31 in Andromeda was visible across the whole field of view and also the faint M 33 in Triangulum was quite impressive under the dark sky. The Dumbbell-nebula in Vulpecula was just an awesome sight! With a Nagler 7 (80 x) this planetary was floating between the stars and it almost looked like a 3D-image. I found the Sky Atlas 2000 to be a very useful companion. It's fairly easy to make a starhop with the aid of the charts and you don't need a detailed skymap.

Nebula filters

There's a common belief that nebula filters are not useful on small telescopes... Well, sometimes you must ignore common thoughts and try the opposite. Although I agree that a larger scope will increase the number of objects, but 80 mm of aperture also works fine on many objects. I've used an OIII-filter on a number of deepsky-objects and even a H-Beta, but the latter



The Veil nebula in Cygnus is a real gem, especially with low power and an OIII or UHC. With a magnification of 17.5x I could see the east and western part of the Veil in the same field of view. Pickering's Wedge, a triangle-shaped nebulosity in the centre, was also visible. (Drawing made by the author)

only works on a few nebulae. Some examples: the Veil nebula in Cygnus is a real gem, especially with low power and the OIII. With a magnification of 17.5x I could see the east and western part of the Veil in the same field of view. Pickering's Wedge, a triangle-shaped nebulosity in the centre, was also visible.

The North America-nebula is another fine target for the Megrez, together with the Pelican-nebula, both situated in Cygnus. NGC 6888, the Crescent nebula, was a real challenge and it took a lot of effort to spot this one. Nothing was seen without the OIII, but besides the need of a nebula filter, averted vision was also necessary.

Blinking planetaries is also fun; objects like NGC 6826 (Cygnus) NGC 7626 (Andromeda) and NGC 6543 (Draco) are perfect examples. But, there are more small planetaries suitable for this technique.

Although the applicability is limited for small scopes, there are some nice targets for a H-Beta-filter. NGC 1499, the California-nebula in Perseus was visible with direct vision and I saw some light and dark areas. It's definitely an object for low powers, because it nearly vanished at higher magnifications. Another nice surprise was the visibility of the nebulosity around Gamma Cygni. With a low magnification I could see several patches, one on the west side, which was visible with direct vision, but the others needed averted vision to recognize. So, nebula filters also work very well on small telescopes, but you never know if you don't try?br /> Grab and go

The usable power of the Megrez ED triplet Apo lies in the low to medium range, although the outstanding optics will give you very good images at high magnifications. If you want to enhance the high degree of portability,

you can put the Megrez on a camera tripod. Don't use a light tripod, because the OTA has a weight of 2.5 lbs. (2.5 kg) and if you add the weight of the diagonal and the extender tube, you need a sufficient support. By the way, the extender is necessary to achieve proper focus and is included. William Optics has used the same tube for the Megrez SD and the Megrez ED triplet Apo, but the latter has a longer focal length. I prefer a camera tripod over a regular mount, but this kind of support works best with low and medium magnifications. I recommend a tripod with a fluid head? so the movements in azimuth and altitude will be very smooth ones. If you want to use high magnifications, it's better to use a mount with slow-motion controls.

Back to basics

The Megrez ED triplet APO brings even an experienced observer back to the basics, because this little big one has some very nice advantages over a bigger telescope. There's a thin layer of dust on my 10" newtonian since I bought this little white scope and frankly I don't care; you're probably familiar with the old saying "the telescope you use the most is the best one?" and I couldn't agree more!



The Megrez ED triplet APO delivers high contrast and razor sharp images without any trace of color. This picture was made by holding a camera (Konica Minolta Dimage Z1) in front of the eyepiece. (Photo made by the author)

So, should you buy an apochromatic refractor? Well, as I mentioned in the beginning, the Megrez ED triplet APO deserves a serious consideration when you're looking for a high quality APO. Besides the outstanding optics you'll get superb mechanics, all put together in a nice and handy backpack. But, there's another reason why this telescope should be taken into account: it is made by a reliable company that prefers a direct communication with the customers; e-mails with suggestions or questions are welcome and the William Optics Yahoo group is a perfect example of an interactive and innovative way to keep in touch with the end-users. So, purchasing the Megrez means that you're also buying a decent back-up.

I'm now enjoying all the benefits of a small and portable refractor. I've seen so many short-tubes in the past 28 years, but this one is an absolute winner!

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