

REVIEW: ASKAR 130PHQ FLATFIELD ASTROGRAPH

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Over the past few years, Chinese manufacturer Askar (part of Sharpstar Optics) have been quietly making a name for themselves with a series of astrophotography-focused telescopes and accessories that combine high quality, excellent usability, and reasonable price. Askar may not have the brand awareness of Sky-Watcher or the reputation of Takahashi, but they certainly have their fans, and for good reason. Askar's latest product, reviewed here, is their most expensive to date: the Askar 130PHQ Flatfield Astrograph.

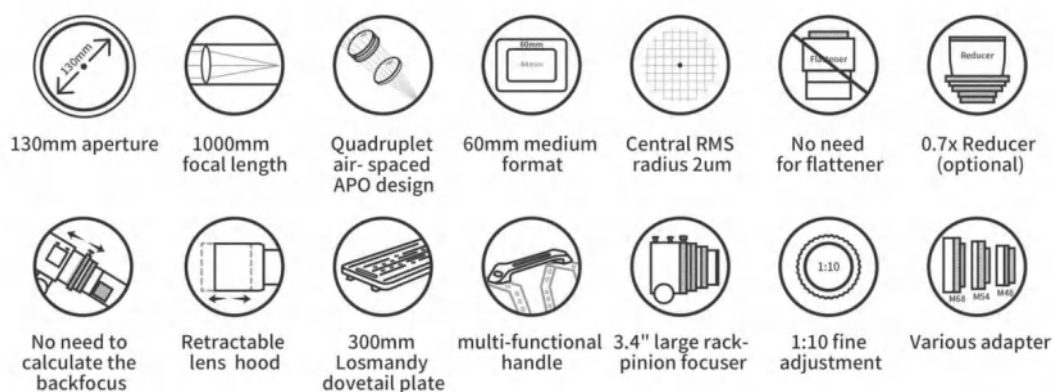


A premium astrograph

Priced at £3989, the Askar 130PHQ is pitched as a premium astrograph with specifications to match. Boasting an aperture of 130mm and a focal length of 1000mm, it's one of the larger refractors available on the market.



The Askar 130PHQ comes with lots of useful adapters. Credit: Askar.



Impressive features! Credit: Askar.

What makes the Askar 130PHQ stand out from its competitors is the simplicity with which you can get imaging: ease-of-use is built into the design. It's a quadruplet air-spaced apochromat, which promises a high quality, corrected flatfield view without the need for an additional reducer. Very impressively, due to its Petzval-like design, there are no backfocus requirements. With other refractor types you need to get the distance between the rear of the telescope and your imaging sensor to be a very specific distance, otherwise you'll have streaky corner stars. Not so with the Askar 130PHQ; so long as your image is in focus, the backfocus is automatically correct. An optional 0.7x reducer is available (RRP £375) that shortens the focal length to 700mm and speeds it up to f/5.4.

If this reducer is used, then a backfocus of 55mm is required. Note that the reducer was not used or tested for this review.



Usability is reflected in other aspects too. The telescope comes supplied with a high quality carry case, and a number of adapters that allow you to screw almost any camera and accessory directly into the imaging train. This neatly avoids issues of tilt or sag. There's a built-in carry handle, camera rotator, oversized tube ring thumb-screws, and large Losmandy plate that makes balancing a breeze. It's important to note though that although the Askar 130PHQ is very user-friendly, I don't recommend it for beginners. Imaging at 1000mm is challenging, with factors such as focus and tracking needing a high degree of accuracy.

After receiving my Askar 130PHQ, I spent an afternoon pimping it out with astrophotography kit and sorting the cable management. The telescope itself oozes quality, with every component having a first-rate finish. Clearly a lot of care has gone into its construction, which you could argue is to be expected at this price point, but is still welcome to see.

I was very happy to find that an ASI AIR Plus (review [here](#)) just about fits onto the Losmandy plate, with maybe 1mm of space between it and the bottom of the telescope tube. Note that the previous generation of ASI AIR controller, the ASI AIR PRO, is a little taller and so wouldn't fit. I then found that attaching a ZWO EAF was a very simple process that didn't require any drilling.



An ASI AIR Plus just about squeaks in the space under the telescope tube.



A ZWO EAF fits onto the focuser very easily.

As soon as the skies were dark enough, I put the Askar 130PHQ onto my EQ6R-PRO mount, got it balanced, and then started imaging with excellent results being obtained immediately. Really, this is quite remarkable, and as someone that takes no joy in fiddling about with complex components or scouring internet forums to find solutions to obscure technical problems, it's all the better. Being a refractor, the collimation is factory-set and requires no adjustment. In short, the Askar 130PHQ is a joy to use.

Image quality

Anyone spending this much on a telescope will demand very high image quality. Does the Askar 130PHQ deliver? According to my tests it certainly does. The field is flat corner to corner, and stars throughout the frame are perfect circles. A caveat here: I'm using a ZWO ASI2600MC Pro camera ([review here](#)), which has a cropped APS-C sensor. Askar claim that the quality holds even up to a 60mm medium format image circle, but I'm

unable to test this with my kit.



The telescope gave an excellent frame in my test with an APS-C sensor.

The Askar 130PHQ ' s large aperture was very useful for resolving detail in the Andromeda Galaxy, in this 10-hour integration (Bortle 8 city cente, no filters). Click on the image for more details.



The excellent optics allowed me to capture faint sweeping dust clouds in this 22-hour integration of The Elephant's Trunk Nebula, also taken from a Bortle 8 city centre, but this time with dualband filters. Yet more evidence that modern OSC cameras are effective even under dense light pollution! Click on the image for more details.



And as a bonus, here's a short video showing what the Moon looks like through this

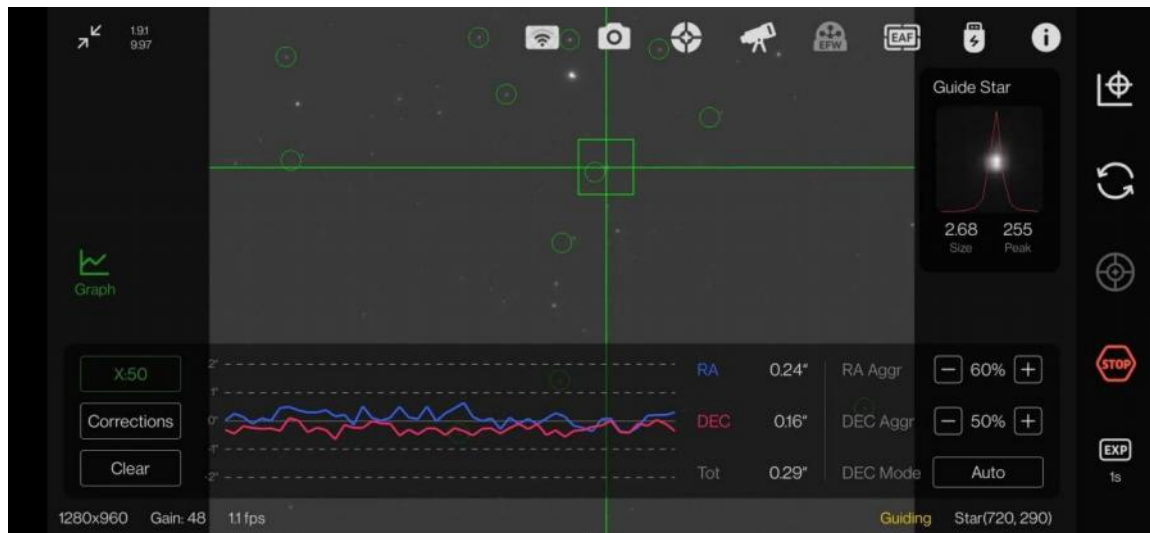
telescope. I'm no lunar imager, but I could be tempted to try...

https://urbanastrophotography.com/wp-content/uploads/2022/11/Moon_video-1.mp4

Supersized refractor

So, are there any downsides? To be blunt, it's a beast: very big and heavy. In fairness, this is to be expected of an instrument of this class, but the sheer size and weight may come as a surprise to anyone used to smaller refractors. With dewshield and focus tube fully retracted, the length is 85cm, but when in use and with a camera attached to the back, expect this to be more in the region of 130cm. The long length means that the telescope is at risk of colliding with tripod legs when imaging an object overhead. So, a tripod extension is recommended, or better yet, a pier.

As for weight, well the optical tube assembly alone weights 10.2kg. Once you've added all your accessories: tube rings, Losmandy plate, guidescope and guidecam, imaging camera, autofocusser, and whatever else you want to bolt onto it, you're likely topping 16kg — 16.4kg for my kit, to be precise — all in a naturally unwieldy form. It's at the limit of what I'm confident physically lifting up and onto a mount. And speaking of mounts, an EQ6-class mount can handle this telescope, but I wouldn't trust anything less. I've been using an EQ6R-PRO on a concrete block pier, with guiding courtesy of a William Optics 50mm Guidescope with 1.25" ROTO Lock (review here) and a ZWO ASI120MM Mini (review here). With this combination I routinely manage a guiding RMS in the 0.3" to 0.6" range, with my all-time best being 0.29".



The combination of length and weight makes it unwieldy, although the inbuilt handle does help. This telescope would excel permanently installed in a home observatory, or, as I do, transported a short distance onto a pier when the skies are clear. If you're thinking of regularly moving it to an observing site, you may wish to consider something more portable. The same advice goes for if you're unsure as to whether you could physically lift the telescope.

The other issue is that f/7.7 is a little slow compared to other speedy telescopes that are now commonly available. The optional reducer takes the 130PHQ to f/5.4, and depending on the camera you use, you may want to bin your data to get a suitable working resolution, which gives a corresponding speed boost too. So, the situation might not be as bad as it first seems with regard to speed.

I should also flag that if you're using a guidescope instead of an off-axis guider then you'll need a tall finder bracket to ensure there's enough clearance between the telescope tube and the guidescope itself. Something like a William Optics Slide-Base Uniguide sits very low and may cause issues.



William Optics Slide-Base Uniguide fittings leave a guidescope very close to the telescope tube, and tube rings may even block the guidescope a little, so are best avoided.



A taller finder bracket does the trick.

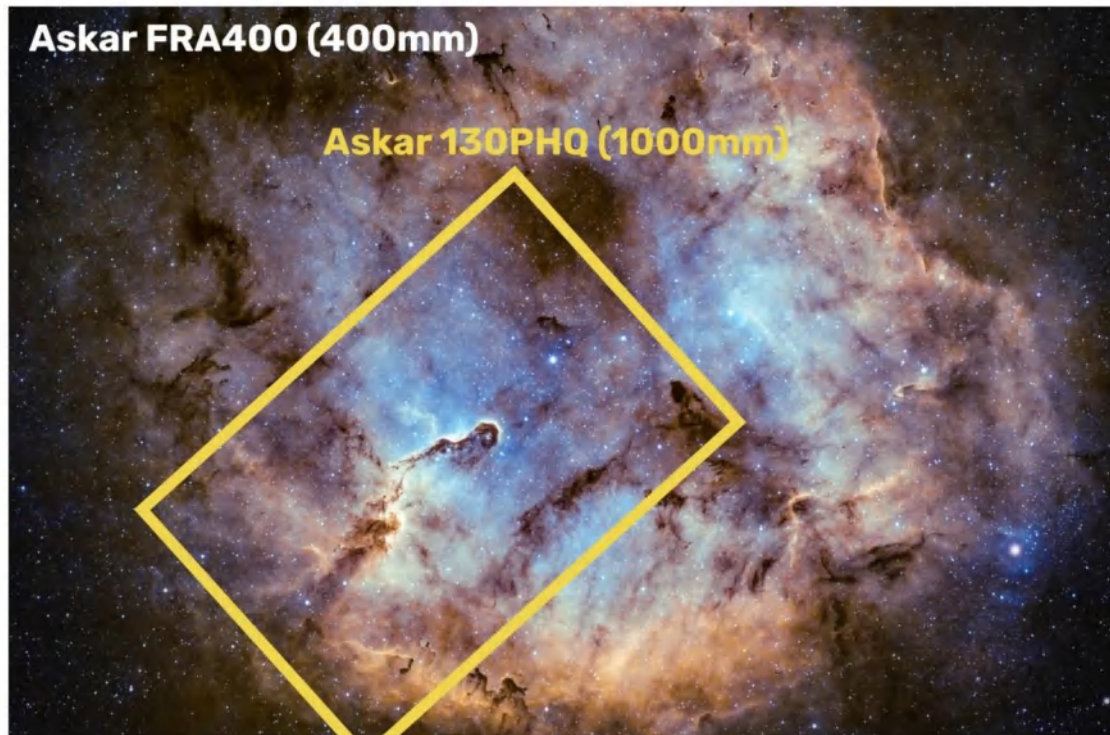
Askar FRA400 vs Askar 130PHQ

Long-time readers of this website may recall that to date my imaging telescope has been an Askar FRA400 ([review here](#)). It's a wonderful little 'scope that I've used extensively and rate very highly, but I felt like I was maxing out its abilities so wanted something bigger and better. The Askar FRA400 isn't really in the same league as the Askar 130PHQ — the latter costing about three times more — but perhaps a comparison would be helpful for anyone wondering what that extra money actually gets you.

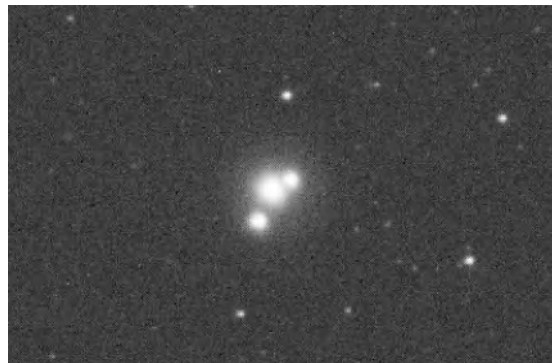
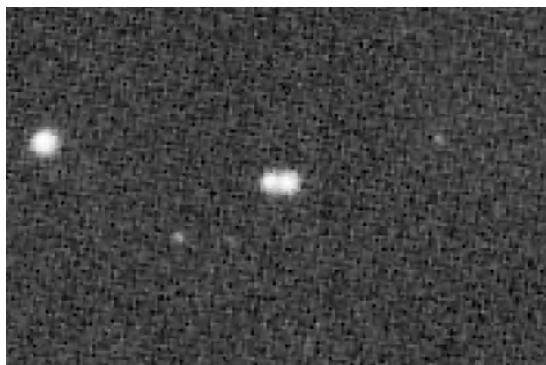
Well, the Askar 130PHQ is basically what you'd get if you supersized the Askar FRA400 in terms of size, weight, and quality. It's much bigger and heavier, with the Askar FRA400 looking more like a guidescope when compared side-by-side. But if you've used a Askar FRA400 or other 'scope in the FRA-series, you'll be instantly at home here as in operation they're all very similar.

The Askar FRA400 has a lot of positive points, but I flagged a few areas for improvement in my review. Specifically, the lens cap and dewshield are loose; it's awkward to open the tube rings; difficult to achieve balance with the short dovetail; and not being supplied with a carry case. Happily, all these issues have been solved with the Askar 130PHQ.

In terms of images, the Askar FRA400's focal length of 400mm makes it well-suited to wide-field targets, while the Askar 130PHQ's 1000mm is much tighter and gets you "closer in". It's best explained in an image:



In terms of image quality, the Askar 130PHQ's increased aperture and superior optics help to make stars sharper and better-defined. Below are two images, and you can slide over them to compare. On the left is an image from my Askar FRA400, and on the right is the Askar 130PHQ. Note that the Askar FRA400's view has been cropped in a lot in order to match so it's not exactly a fair fight.



Here's the same kind of experiment but with fully processed data. Again, it's not really a fair test as we're hobbling the Askar FRA400 somewhat (on the left) by cropping in to match the Askar 130PHQ's field of view (on the right); and the processing is quite different between the two. But I still think it's interesting!



So sure, the Askar 130PHQ is fantastic, but you'd expect that given the cost. I'm very impressed by how well the Askar FRA400 performs though. If you're a beginner / are interested in wide-field views / are on a budget, then I'd still recommend the Askar FRA400. If you want the challenge of imaging targets at 1000mm, and have the bank balance and arm muscles to support it, then the Askar 130PHQ is the winner.

To summarise...

The Askar 130PHQ is a stunning telescope that's well designed and makes image acquisition as simple as possible. If you're in the market for a large refractor and are confident that you can physically lift it when necessary, and are experienced enough to handle the challenges inherent with working at 1000mm, then it deserves your serious consideration.

If you like the sound of the Askar 130PHQ but think it's just a bit too big, heavy, and expensive, then perhaps you'll be pleased to hear that it has a smaller brother, the Askar 107PHQ (£2699).

Only time will tell whether the Askar 130PHQ becomes a classic, but I see myself being happy with it for many years to come.

Gallery







