The Lightweight, Heavy Hitting Askar FRA400 72mm Astrograph Reviewed

By: Lee PullenPublished: Dec 19, 2021


The Askar FRA400. Credit: Askar.

The Askar FRA400 is a portable widefield refractor that punches above its weight. Designed for astrophotography, it produces high quality images that belie its small size, and boasts features that make it easy to use. With an appealing price point of MSRP $1099, it's an excellent choice for beginner or intermediate astroimagers, or those that just want to collect photons with a minimum of hassle. There are some design issues that potential buyers should be aware of, however.


The author's Askar FRA400, coupled with a number of astrophotography accessories. Credit: Lee Pullen.

Lightweight but a heavy hitter

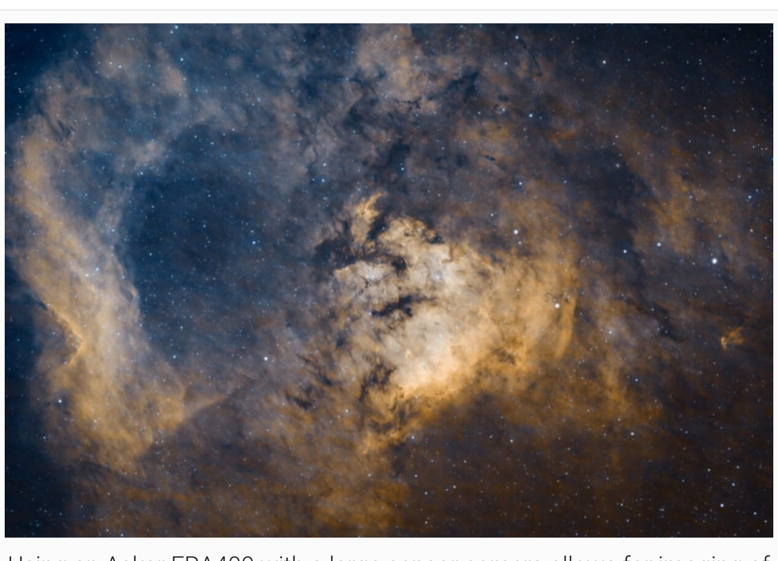
The Askar FRA400 is a compact astrograph with a tube weight of just 5.6lbs (2.56kg). It has an aperture of 72mm and a focal length of 400mm, leading to a focal ratio of f/5.6. It's a potent combination of specifications that means the Askar FRA400 can serve well as a travel or main imaging 'scope.

What makes the Askar FRA400 stand out is its Petzval-like quintuplet design. With other telescope designs, getting the camera sensor to be the exact right distance from the back of the telescope – the back focus distance – can be an exercise in frustration. Not so with the Askar FRA400, as the back focus is automatically correct once the telescope is in focus.

Combine this with the fact that 400mm is wide-field and so not particularly taxing on a mount's tracking abilities, and that f/5.6 lets in a good amount of light, and altogether the Askar FRA400 is a wonderfully forgiving instrument to use. It even has a built-in carry handle and 360-degree rotator. Image quality is good too, with just some fringing apparent around stars near the edge of the frame.

An optional Askar f/3.9 Full Frame Reducer turns the Askar FRA400 into a f/3.9 280mm system. This wasn't tested as part of this review, so no comments can be made about its quality. It should be noted that if using the Askar f/3.9 Full Frame Reducer, back focus of 55mm is required.

Although designed for astrophotography, if you have a spare diagonal and eyepiece available, the Askar FRA400 can offer pleasing views. Star clusters appear crisp and well defined, although the small aperture means it's of limited use for planetary observations.


Using an Askar FRA400 with a large sensor camera allows for imaging of sweeping nebulas, such as NGC 7822 shown here. Credit: Lee Pullen.

Niggling issues

The Askar FRA400 isn't without issues though. The dew shield fits only loosely and is at risk of retracting under its own weight when the telescope is pointing straight up. A tool is needed to attach or release the tube rings, which is inconvenient. The supplied dovetail is quite short, and you'll need a longer one to achieve balance if you plan on using a heavy camera such as a ZWO ASI2600 MC Pro. More annoyingly, if you do use a longer dovetail you'll also need risers to prevent the dovetail impacting the locking screw that protrudes below the focuser.

Speaking of the focuser, it feels quite good in use, although perhaps not quite as premium as similar offerings from William Optics. A motorised focuser is a worthwhile upgrade; a ZWO Electronic Automatic Focuser (EAF) can be attached to an Askar FRA400 very easily.

The Askar FRA400 doesn't come supplied with a carry case, which seems like a strange omission considering its portability credentials.

The aperture size of 72mm helps to keep the Askar FRA400 compact and lightweight, but does limit its light-gathering ability. If used as a main instrument, an astrophotographer may find themselves wanting something bigger before long – although that's an ever-present risk in this hobby!

The dew shield is quite loose. Here, an elastic band is being used to stop it sliding back. Credit: Lee Pullen.

Alternatives

Askar offer two larger, and more expensive, versions: the Askar FRA500 f/5.6 90mm (MSRP $1999), and the Askar FRA600 f/5.6 108mm (MSRP $2599). The William Optics Gran Turismo 71 APO Refractor (MSRP $933) is a more conventional refractor design but offers similar specifications with a focal length of 419mm, aperture of 71mm, and focal ratio of f/5.9.

Plus:
Lightweight and portable
Good image quality
Easy to use

Minus:
Some design issues
Small aperture limits light-gathering ability

MSRP: $1,099

Website: http://www.askarlens.com/

Read more in Urban Astrophotography's Askar FRA400 f/5.6 72mm Quintuplet APO Astrograph review.


About Lee Pullen

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Lee Pullen is a science writer and communicator from the city of Bristol, UK. He has a degree in Astronomy and a master's in Science Communication. He began his career writing for organisations including the Hubble European Space Agency Information Centre and the European Southern Observatory, as well as becoming Staff Writer for the International Year of Astronomy 2009, the world's largest ever science outreach initiative. Lee runs the website UrbanAstrophotography.com

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