

# FIRST light

See an interactive 360° model of this refractor at [www.skyatnightmagazine.com/360/star70ed](http://www.skyatnightmagazine.com/360/star70ed)



## Altair Astro Starwave 70 ED refractor

A solid option for travel and wide-field astrophotography

WORDS: PAUL MONEY

### VITAL STATS

- **Price** £299
- **Aperture** 70mm (2.75 inches)
- **Focal length** 420mm (f/6)
- **Optical design** Multicoated ED doublet
- **Focuser** 2-inch dual-speed Crayford microfocuser
- **Length** 300mm Fully Retracted, 380mm Fully Extended
- **Mounting** L-type mount bracket
- **Weight** 2kg
- **Extras** 2- to 1.25-inch adaptor, foam travel case
- **Supplier** Altair Astro
- **www.altairastro.com**
- **Tel** 01263 731505

**S**hort focal length refractors are in fashion at the moment, with several manufacturers producing models in the 60mm to 80mm range with focal ratios of around f/6. Not to be outdone, Altair Astro has recently added the Starwave 70 ED refractor to its repertoire as a cost-effective travel option. We were interested to see what it could do both as a visual system and as an imaging scope.

The Starwave 70 ED is a 2.75-inch, 420mm focal length telescope just 300mm long; 380mm with the dew shield extended. The objective lens is a doublet – meaning it has two elements – made from extra-low dispersion (ED) glass. The doublet design helps to correct for any colour fringing around bright stars, which is an optical error where not all colours are brought to the same focus.

The 2-inch focuser is a Crayford design with a dual-speed 1:10 microfocuser and comes with a 2- to 1.25-inch adaptor. The back of the focuser unscrews to reveal a M54x0.75 female thread – with

the right adaptor, you could attach a camera and use this scope as a telephoto lens for astrophotography.

The scope is supplied in a soft, well-padded case with several compartments for accessories. For review purposes we were also loaned a star diagonal and 15mm 70° eyepiece.

### SKY SAYS...

Overall build and construction was good and we were impressed with the compactness of the tube

### Flexible focuser

Overall build and construction was good and we were impressed with the compactness of the telescope tube. The dew shield performed its job, though we would have liked to have seen a locking screw to keep it in place. That being said, the dew shield did not slip while we were using it. The back section can be rotated through 360°, which is useful for

imaging as it gives you more flexibility when framing targets. This part of the scope does have a locking screw, but there was a little play when rotating it with a DSLR attached. ▶

### BODY

The tube is attractively finished in white and black. The internal matt coating and baffles do a good job in cutting down on any internal reflections that can spoil the contrast in faint deep-sky objects.

### DEW SHIELD

The retractable dew shield was slightly loose for our liking, but it was still easy to retract for storage after use. It gave reasonable protection from dewing up under normal conditions and did a good job of cutting out extraneous light as well. However, we would like to have seen a locking screw included.



### FOCUSER

The focuser is a dual-speed Crayford design with a microfocuser for fine control. It was easy to operate and can be locked in place with a locking screw, although we did note a little image shift. It is designed for 2-inch eyepieces and is supplied with a 1.25-inch adaptor.



### OPTICS

The objective lens is made from ED glass and all surfaces are multicoated. The doublet design visually gave good views of the night sky; photographically there was slight colour fringing noticeable on some stars, but this was a minor issue.

### LIGHTWEIGHT AND TRAVEL FRIENDLY

What impressed us most about the Starwave 70 ED was how light it is – just 2kg. With its compact size of just 300mm with the dew shield retracted, it is ideal as a travel scope. It's easy to transport safely too, thanks to the padded soft case that comes with it. The case has compartments for accessories and will fit within the confines of most airline luggage restrictions. The telescope's mounting foot allows for it to attach to a typical photographic tripod – perhaps your best bet if you want to take it abroad – or to a Vixen-style mount for astrophotography at home.

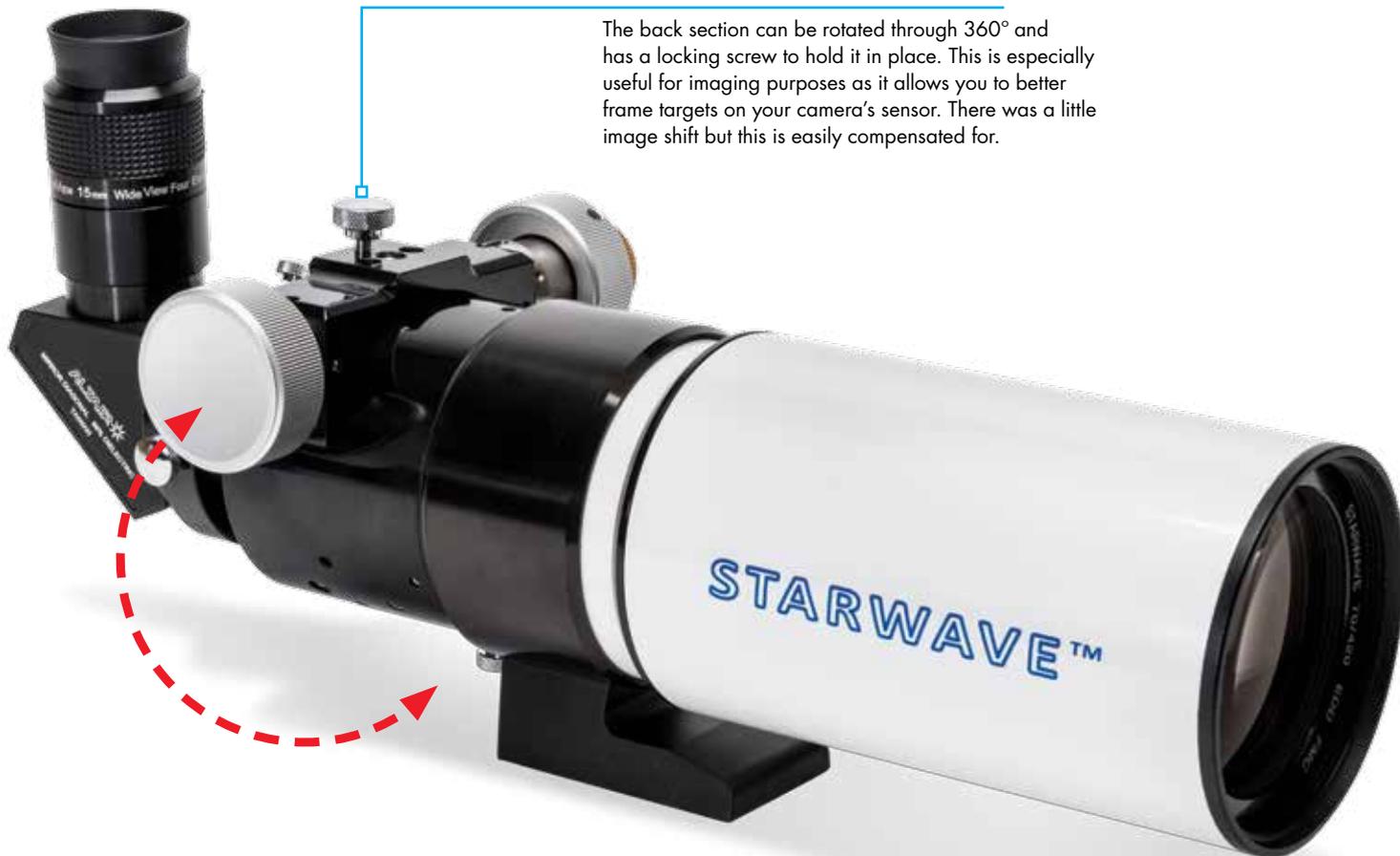
By adding a star diagonal, eyepiece and a photographic tripod the Starwave becomes a highly portable visual instrument without adding too much to its weight. If you are a solar eclipse chaser, consider pairing this scope with a appropriate solar filter – it is also ideal for taking away on eclipse expeditions without costing the Earth in excess baggage charges.



# FIRST light

## ROTATABLE REAR SECTION

The back section can be rotated through 360° and has a locking screw to hold it in place. This is especially useful for imaging purposes as it allows you to better frame targets on your camera's sensor. There was a little image shift but this is easily compensated for.



### SKY SAYS...

Now add these:

1. Altair 1.25-inch dielectric star diagonal
2. Altair 15mm wide-field 70° eyepiece
3. Lightwave 1.0x field flattener for f/5.5-f/6.25 refractors

► For our visual tests we used the loaned dielectric star diagonal and 15mm eyepiece, plus a trusted 26mm eyepiece of our own. For closer views of the Moon, planets and double stars, we also added a 2x Barlow lens and a 5x Powermate to boost the magnification.

### Slight distortions

The multicoated optics performed well as we scanned the stars: with the 26mm eyepiece we found the view of Altair (Alpha Aquilae) crisp across the central 80 per cent of the view, with slight distortion towards the field edge. There was a little colour fringing on the brightest stars, but overall it was well controlled. The 26mm eyepiece gave a magnification of 16x, and with it we could easily fit the three stars of Orion's Belt into the view.

The 15mm eyepiece gave a lovely view of the Andromeda Galaxy as it stretched across the view and the Pleiades star cluster sparkled, with a hint of the Merope nebulosity visible with averted vision. We also enjoyed a good view of the galaxy pair M81 and M82. By this time Jupiter was rising, so we turned to it and coupled the 26mm eyepiece with the 5x Powermate to reveal two of the planet's belts and all four Galilean moons. Later in the

night we aimed at the Moon and also found it to be reasonably detailed, even though this is a wide-field telescope.

We then attached our Canon EOS 50D DSLR and managed to capture a decent view of the Pleiades, despite the vagaries of the weather. We took 36 exposures, each two minutes long. Although we did notice some colour fringing on some stars in this, we were able to both control it and bring out a wealth of nebulosity during processing. A field-flattener could deal with the slight star distortion we noted towards the edges of the field of view.

We wish we had more clear nights to use the Starwave 70 ED. For the price it is a good all-round small scope ideal for a beginner when you add a star diagonal and an eyepiece, or for wide-field imaging. **S**

## VERDICT

BUILD AND DESIGN	★★★★★
EASE OF USE	★★★★★
FEATURES	★★★★★
IMAGING QUALITY	★★★★★
OPTICS	★★★★★
OVERALL	★★★★★

WWW.THESECRETSTUDIO.NET