

Introducing the **Altair Astro 115mm**



▲ The three-inch focuser and built-in field flattener on the Altair Astro 115mm triplet apo.

▲ The Horsehead Nebula, taken through the Altair Astro 115 triplet apo with a four-hour exposure using an Atik 4000 colour camera and Takahashi EM200 mount, with ten-minute sub-exposures. All images: Olly Penrice.

Olly Penrice, proprietor of Les Granges Astronomy Holidays in southern France, got his hands on Altair Astro's latest 115mm refractor and found that it more than held its own.

With an aperture more than adequate for the Messier list, a modest bulk, guiding-friendly focal length and reasonable imaging f-ratio, a mid-sized apochromat has an awful lot going for it. Aware of this, Altair Astro have specified a new 115mm air spaced f/7 triplet of their own. I use very expensive apos from TEC and Takahashi, but Altair were confident that their new refractor would rate highly in its ability to excel, despite its very reasonable price tag.

Taking the 115 out of its flight case I was struck by the substantial

build of the ensemble. There is a three-inch (76mm) focuser and built-in field-flattener lens at the rear, removable for visual use. Both the whole focuser and the drawtube have rotators to please the imagers out there. I did feel there was some play in both when unlocked and their action lacked smoothness, but in practice there was no evidence of any residual misalignment once the lock screws were re-tightened. The two-speed Crayford focuser itself is a beauty – strong, smooth and capable of holding heavy CCD set-ups safely. It also allows for an impressive 44mm image circle. Completing the package were some good solid CNC rings and a finderscope that merits a review of its own. It's a 90 degree, illuminated reticle, 10 × 60 instrument with everything rotatable so that the eyepiece can be orientated to suit your preference and the reticle set to RA and Dec. Since it mounts on the focuser it can also be rotated around the telescope. This finder is quite something and gave a sharp, high contrast view, albeit with a little more parallax than usual between reticle and sky. Happily it is available in its own right from

Altair Astro because I'd like one for our 20-inch.

In focus

Briefly put, the whole package begged to be taken outside. For a star test I put in a 4mm TeleVue radian giving 200× and slewed to Cor Caroli. Beside me was professional optician Ralf Ottow, whom you may remember as the creator of the watercooled Newtonian (see *Gear heads, AN*, November 2010). Where optics are concerned, he takes no prisoners. On axis the Airy disc showed cleanly in moderate seeing. Inside and outside focus the diffraction pattern was perfectly circular and symmetrical, although outside focus a little colour showed, the inner region tending towards purple and the outer towards green. Ralf considered this an excellent result. In focus all was perfect. Next we slewed the star to the edge of the radian's field. The diffraction pattern remained almost perfectly circular. Now that is impressive, but wait: we then switched to Ralf's 7mm Nagler without moving the telescope and now, well away from the edge of the field, the pattern was perfect and so it remained as we slewed all the way to the edge of the Nagler's immense

■ Unboxed, Arcturus in a 0.5 second exposure with luminance filter central to the chip. To its left, boxed, a similar exposure but taken from the corner of the chip. There is no perceptible degradation of the image, confirming the star test we performed.



115mm triplet apo

field-of-view! We both thought this extraordinary.

Subjectively the 115 gave exquisite views of the kind that refractor buffs love. In the wide field of my 26mm Nagler, stars appeared absolutely perfect across the entire view. In this eyepiece the Leo Triplet was framed with lots of room to spare and NGC 3628, the faintest member, showed a hint of its dust lane. Stepping up to a 19mm Panoptic this feature faded but M66 showed considerable extension in its fainter regions.

On Saturn at 200x we studied the dark storm belt that was confusingly placed to coincide with the hidden half of the ring. The Altair Astro 115 made light work of disentangling these planetary details.

So the visual verdict is easy; this is, quite simply, a stunning refractor. Now, what happens when we take a picture?

Easy imaging

With the flattener in place the camera holder is optimised for DSLRs with a chip distance of 55mm, so I needed a few spacers to achieve this with our Atik 4000 colour CCD. My target was the Horsehead Nebula. Now, I image with refractors because they make life so easy. This is great unless you are trying to write about them, in which case they give you nothing to say! I focused the telescope quickly with its tolerant f/7 focal ratio. I set up the run of ten-minute sub exposures and I wandered off. I came back again from time to time to see if the focus had drifted and it hadn't. Sorry but that's about it!

When, after four hours, Orion slid below the mountains I fired off a set of flat fields, looked carefully at my sub exposures and was pleased to see tight round stars right into the corners. The flats coming in suggested an impressively even illumination by the lens, too.

In the morning I applied the darks and flats, stacked the set of lights and hurried into *Photoshop* to take a quick look at the results. This was the exciting bit, and all was well. Since UK imagers want to know what they can expect from a telescope I did not go in for one of my thirty-hour marathons but a simple run of four hours. I think the result is very encouraging and shows a fine telescope doing its job just as it should. The image was clean and easy to process with no optical defects in need of *Photoshop* skullduggery at all. And that is how we all like it to be.

To conclude, I find the Altair Astro 115 triplet apochromat an amazing piece of kit. The price is more than competitive. The specification is lavish (Built-in flattener, twin camera rotators, CNC rings, three-inch dual speed focuser and luxury finderscope). Above all, though, what refractor buyers really want is impeccable optical quality and that is exactly what this telescope delivers. I won't forget that perfect diffraction pattern at the very edge of a Nagler eyepiece in a long, long time. This is a premium optic at a less than premium



▲ The Altair Astro 115mm triplet apo in all its glory, with the Atik 4000 CCD attached.

price and, but for the presence of our big TEC, the test instrument would not be going back to the UK, of that I can assure you!

Oilly Penrice is owner of Les Granges Astronomy Holidays – see www.sunstarfrance.com for more details.

At a glance

Aperture:	115mm
Focal length:	805mm
F-ratio:	f/7
Optics:	Air-spaced ED triplet apochromat multi-coated lens
Weight:	6.4 kilograms (8 kilograms with accessories)
Accessories:	Retractable dew shield, 60mm finderscope, field flattener, two-speed Crayford focuser
Price:	£1,599 (introductory price including field flattener and finderscope)
Available from: Altair Astro (www.altiraastro.com), tel: 01263 731505.	