

REVIEWED

DUAL-SPEED TWO-INCH CRAYFORD FOCUSER FOR SCTs

Putting the Universe in fine focus

Mark Radice tests a fine focuser from Optical Vision that promises to transform the performance of your Schmidt–Cassegrain telescope.

sees the mirror shift in alignment, resulting in minor mis-collimation and, when imaging the planets, this can result in the tiny target leaving the chip's field of view. This effect is very frustrating at the long focal lengths/focal-ratios necessary for planetary imaging.

To overcome this, a range of aftermarket focusers are available. Here, I review one of the more affordable options to see if it offers both a benefit over the standard focusing mechanism and value for money over other options on the market.

First impressions

I purchased the two-speed Crayford focuser by Optical Vision Ltd (OVL) from 365 Astronomy. It came well packaged in a robust cardboard

■ The OVL dual speed Crayford focuser for SCTs. All images: Mark Radice.

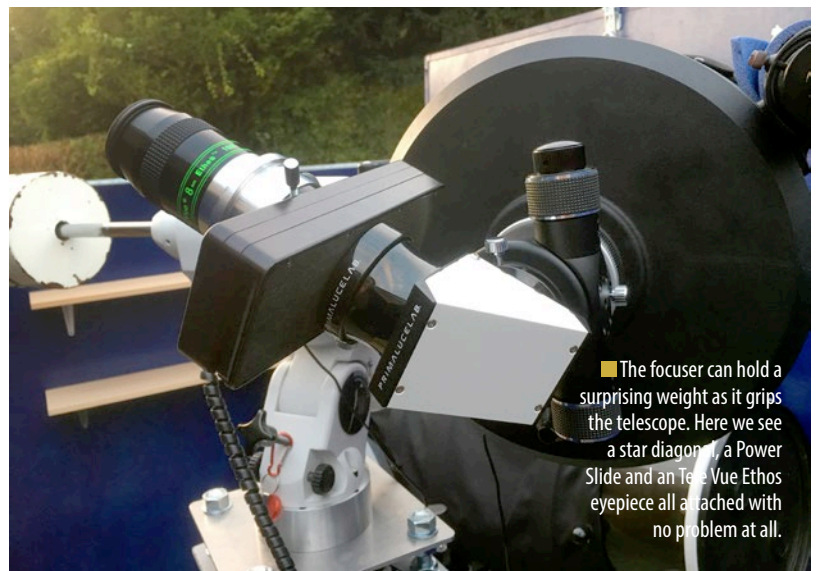
Schmidt–Cassegrain telescopes (SCTs), with their compact tubes and wide range of accessories, have been popular telescopes for several decades. They hit an ideal compromise between ease of use, value for money and aperture that allows them to compete favourably with other telescopes.

However, a key frustration that soon becomes apparent is the effect focusing has on mirror alignment in an SCT. Unlike a reflector or a refractor, SCT's focus by moving the primary mirror along the tube baffle. When the direction of travel is reversed, the slight backlash in the focusing mechanism



At a glance

Weight: 1.3kg
Outer diameter (silver bottom rim): 90mm
Outer diameter (black part above silver): 84mm
Dual speed: 10:1
Eyepieces: Accept both 1.5- and 2-inch eyepieces
Price: £145
Details: opticalvision.co.uk



■ The focuser can hold a surprising weight as it grips the telescope. Here we see a star diagonal, a Power Slide and an Te. Vue Ethos eyepiece all attached with no problem at all.

box, packed in foam and includes a 1.25-inch adaptor. The finish of both components is to a high quality with well-machined and finished surfaces – no burrs, sharp edges, or blemishes here.

The not-insignificant weight of the unit was the first thing that struck me. Remember, this is an additional mass going onto the back of the telescope and it incurs a corresponding impact on the telescope's balance point. Users with a fork mount will also need to be careful to ensure that there is enough room to accommodate the new focuser and other accessories such as a diagonal or camera.

Installing the focuser is surprisingly easy. The visual back is unscrewed from the telescope to reveal a threaded mounting flange. The new focuser can then be screwed on and tightened until it is firmly locked in place. Now, the telescope has two focusing methods: the original focuser can be used for coarse focusing between extremes, for example if switching to a binoviewer or going from an eyepiece to a DSLR, while the Crayford is used for fine focus.

Performance

By the time I came to write this review I had been using the OVL Crayford focuser for several months, through hot summer evenings to cold October nights, for both visual observing as well as planetary and lunar imaging. Before focusing with an eyepiece or camera, I find it is necessary to ensure that the Crayford focuser is at its mid-setting, so that it can be adjusted in either direction. You should then focus the telescope by turning its original focuser clockwise past focus and then slowly anti-clockwise, back to focus. This ensures that the primary mirror is held in position and won't move as the telescope changes in azimuth.

At this point, you can turn to the Crayford focuser to achieve a very accurate and smooth focus, both inwards and outwards. This approach allows you to find focus much more easily than when just using the original focuser. Fine details in lunar craters or Jupiter's storm clouds can be teased out at the 'perfect' focus (or the 'least-bad' focus when the seeing is poor!) without worrying about the image shifting back and forth.

A feature that will appeal to visual observers and images alike is that the focuser can be turned to a suitable position by unlocking it and rotating the whole assembly to an optimum angle. This is much easier than rotating only the diagonal because it means there is no risk of dropping expensive items in the dark, and it also allows the focus to be maintained – although when imaging I recheck focus as a matter of habit. The focuser mechanism can always be rotated to a convenient angle no matter where you look in the sky or what accessories are fitted to its back.

I was surprised at how much weight the lock of the focuser onto the telescope can hold. For example, one of the images on this page shows a two-inch diagonal, a Power Slide for filters and a Tele Vue Ethos eyepiece, all held at a comfortable angle without issue. Note that I also tested this at a vertical angle and still there was no slippage.

I do have one small note of criticism: would equipment manufacturers please make thumb screws with big, knurled handles so that they are easier to use with cold hands or gloves!

Value for money

The focuser reviewed here is marketed at a particular price point (£145). Other focusers weigh less (which improves mount performance) or offer a higher payload capacity but always at a higher purchase cost. As always, whether this value for money is up to each individual.

Some may prefer a motorised focuser, either manually controlled or auto-focusing. This model does not have such a capability. Other focusers on the market can be fitted (or upgraded later) with motors but, again, at additional cost.



▲ Even when tilted at a vertical angle, the focuser retains its firm lock.



▲ Adjusting the angle of the focuser and eyepiece is simplicity itself.

Finally, check whether you have sufficient space for a focuser and accessories to clear the mount and tripod and that your mount can support the additional weight.

Overall, the focuser significantly enhances the ability to finding and maintaining an accurate focus without mirror shift, which provides an invaluable improvement in performance. Secondly, it allows an eyepiece to be rotated to a comfortable position or a camera turned to the optimum viewing angle without hassle. Do I think this upgrade is worth the money? An undoubted yes!

Mark Radice is an amateur astronomer based in Wiltshire. Visit his website at RefreshingViews.com.