

STARFIELD



6" f/4 Newtonian Astrograph Instruction Manual

www.starfieldoptics.com

Congratulations on your purchase of the Starfield Optics 6" f/4 Newtonian Astrograph! This compact, short-focal-length reflector telescope features high-quality parabolic optics, a 2" dual-speed Crayford focuser, and excellent mechanical construction. It is optimized for astrophotography with DSLR and astronomical CCD imaging cameras, but can also provide excellent visual views with optional eyepieces.

Parts List

- Optical tube assembly
- Optical tube dust cap
- 8x50 crosshair finder scope
- Finder scope dovetail bracket with rubber O-ring
- Pair of hinged tube rings
- Dovetail mounting bar
- Screws for tube ring attachment (x2)
- 2" to 1.25" eyepiece holder
- 2" extension adapter

Preparing the Telescope for Use

The 6" f/4 Newtonian Astrograph comes with a pair of hinged, felt-lined tube rings to hold the optical tube assembly (OTA) on a mount. Each ring has a flat boss on opposing sides. Both bosses have an M6 threaded hole in the center. Attach the tube rings to the dovetail mounting bar with the two socket head cap screws provided, using the included Allen wrench to tighten them. Then place the OTA in the open tube rings and clamp the rings closed.

The telescope has an extended length of optical tube in front of the focuser, compared to a standard Newtonian, to prevent any possibility of incoming light impinging directly on the secondary mirror or entering the focuser drawtube. This ensures the best possible contrast when observing and photographing faint celestial objects.

2" Dual-Speed Crayford Focuser

The 6" f/4 Newtonian Astrograph features an all-metal, 2" dual-speed (10:1) Crayford-type focuser with a linear bearing rail for added stability. A steel reinforcing plate inside the focuser provides additional strength and rigidity.

Attaching the Finder Scope

The included 8x50 crosshair finder scope is useful for locating objects in the sky and centering them in the main telescope's field of view. To install it, first remove the O-ring from the bracket and place it over the body of the finder scope until it seats in the narrow groove near the middle of the finder or is just behind it.

Aligning the Finder Scope

The finder scope and the main telescope must be aligned so they point to exactly the same spot in the sky. Alignment is easiest to do in daylight. First, insert an eyepiece (a crosshair eyepiece is best) into the eyepiece holder in the telescope's focuser. Point the telescope at an object such as the top of a telephone pole or a street sign that is at least a quarter mile away.

If the image in the finder scope appears out of focus, you will need to refocus the finder scope for your vision. First, loosen the knurled lock ring located behind the objective lens cell on the body of the finder scope. Back the lock ring off by a few turns. Then refocus the finder scope on a distant object by rotating the objective lens cell clockwise or counterclockwise. Once the image appears sharp, retighten the knurled lock ring behind the objective lens cell. The finder scope's focus should not need to be adjusted again.

Operating the Telescope

The Starfield Optics 6" f/4 Newtonian Astrograph can be used with a DSLR camera, a CCD camera, or for visual observing with an eyepiece.

Attaching a DSLR Camera

To attach a DSLR camera, you will need the appropriate T-ring for the make and model of your camera. If using a coma corrector (highly recommended), thread it into the T-ring attached to your DSLR camera body, then insert the coma corrector housing into the focuser through the 2" accessory collar and tighten the two locking thumbscrews on the collar to secure the camera in place. If you do not plan to use a coma corrector, then you will need a prime focus camera adapter. Simply attach the T-ring to the camera body and thread the camera adapter into the T-ring. Then insert the barrel of the camera adapter into the focuser's 2" accessory collar and secure it with the two thumbscrew locks.

Attaching a CCD Camera

The 6" f/4 Newtonian Astrograph is equipped to accept CCD/CMOS astronomical cameras with either a 2" or 1.25" nosepiece. If you are using a coma corrector, a zero-profile prime focus camera adapter is required. The zero-profile adapter has male T-threads that couple to the female T-threads of your camera. Note that, depending on your CCD camera's specifications, you may need to insert the 2" extension adapter in front of the camera in order to achieve focus.

Star-Testing the Telescope

When it is dark, point the telescope at a bright star and accurately center it in the eyepiece's field of view. (To achieve focus with an eyepiece, you will likely have to use the included 35mm extension adapter, as described previously.) Slowly de-focus the image with the focusing knob. If the telescope is correctly collimated, the out-of-focus image will appear symmetrical.

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