

Orion 13008

Orion 60mm Multi-Use Guide Scope with Helical Focuser Instruction Manual

1. INTRODUCTION

The Orion 60mm Multi-Use Guide Scope with Helical Focuser is a versatile accessory designed for both astrophotography guiding and visual observation as a finder scope. Its 60mm aperture enhances light-gathering capabilities, providing a wider selection of potential guide stars for precise tracking during long-exposure astrophotography. The integrated helical focuser ensures accurate focus adjustments without rotating the attached device, maintaining consistent field orientation.



Figure 1: The Orion 60mm Multi-Use Guide Scope with Helical Focuser.

2. SETUP

2.1 Mounting the Guide Scope

1. **Attach Dovetail Bar:** The guide scope comes with a 3.5-inch (8.9 cm) long, 1.18-inch (3 cm) wide dovetail mounting bar. Secure this bar to your main telescope's mounting plate or accessory rail.
2. **Position Guide Scope Rings:** Place the two heavy-duty guide scope rings around the guide scope tube.
3. **Secure to Dovetail Bar:** Attach the guide scope rings to the dovetail mounting bar. Ensure all screws are tightened to prevent flexure during use.
4. **Aiming Adjustment:** Use the six nylon-tipped thumbscrews on the guide scope rings to precisely aim the guide scope parallel to your main imaging telescope.



Figure 2: The guide scope mounted on a main telescope, ready for use with an autoguider.

2.2 Attaching an Autoguider or Eyepiece

1. **Insert Device:** Insert your small-chip autoguider device (e.g., Orion StarShoot AutoGuider, StarShoot AutoGuider Pro Mono Camera) or an optional 1.25-inch eyepiece into the focuser collar at the rear of the guide scope.
2. **Secure Device:** Tighten the thumbscrew on the focuser collar to hold the autoguider or eyepiece securely in place.
3. **T-Thread Attachment:** For autoguider cameras equipped with female T-threads, the focuser collar features male T-threads for a secure, threaded attachment.

2.3 Initial Focus Adjustment

The guide scope features a helical focuser and a telescoping drawtube. To achieve initial focus:

1. **Adjust Drawtube:** If significant back-travel is needed, extend or retract the telescoping drawtube housing. This provides up to 35mm of additional back-travel.
2. **Use Helical Focuser:** Rotate the machined, knurled ring of the helical focuser for fine focus adjustments. The focuser provides 10mm of precise helical focus travel.

3. **Lock Focus:** Once focus is achieved, tighten the thumbscrew on the focuser to lock it in place. The fixed-orientation focuser mechanism prevents rotation of the attached device during focus adjustments.



Figure 3: Detail of the helical focuser, showing the knurled ring for adjustment.

3. OPERATING

3.1 Using as a Guide Scope for Astrophotography

When used with a compatible autoguider, the 60mm Multi-Use Guide Scope helps correct for tracking errors in your main telescope mount, leading to sharper astrophotographs.

1. **Connect Autoguider:** Ensure your autoguider is properly connected to your computer and mount, following the autoguider's specific instructions.
2. **Acquire Guide Star:** Using your autoguiding software, locate a suitable guide star within the guide scope's field of view. The 60mm aperture provides a brighter field and more star options.
3. **Fine Focus:** Adjust the helical focuser to achieve critical focus on the guide star. The non-rotating focuser ensures the guide star remains centered during adjustment.
4. **Begin Guiding:** Initiate the autoguiding process through your software. The guide scope will feed star position data to the autoguider, which then sends corrections to your mount.



Figure 4: Example of an astrophotograph, demonstrating the results achievable with proper guiding.

3.2 Using as a Straight-Through Finder Scope

The guide scope can also function as a deluxe straight-through finder scope for visual observation.

1. **Insert Eyepiece:** Insert an optional 1.25-inch eyepiece into the focuser collar.
2. **Focus:** Adjust the helical focuser to bring celestial objects into sharp focus.
3. **Align:** Align the finder scope with your main telescope by adjusting the nylon-tipped thumbscrews on the guide scope rings until both scopes point to the same object.

4. MAINTENANCE

4.1 Cleaning Optics

To maintain optimal performance, keep the lenses clean. Dust and smudges can degrade image quality.

- **Dust Removal:** Use a can of compressed air or a soft camel's hair brush to gently remove loose dust particles.
- **Smudge Removal:** For smudges or fingerprints, use a clean, soft microfiber cloth specifically designed for optics, along with a small amount of optical cleaning fluid. Apply the fluid to the cloth, not directly to the lens, and wipe gently in a circular motion from the center outwards.
- **Avoid Harsh Chemicals:** Never use abrasive cloths, paper towels, or household cleaning agents, as these can scratch or damage optical coatings.

4.2 Storage

Store the guide scope in a clean, dry environment, away from extreme temperatures and humidity. Use the original packaging or a padded case to protect it from physical damage and dust when not in use.

4.3 General Care

Avoid dropping or subjecting the guide scope to strong impacts. Ensure all screws and connections are snug before and after use to prevent components from loosening.

5. TROUBLESHOOTING

5.1 Difficulty Achieving Focus

- **Check Drawtube Position:** Ensure the telescoping drawtube is adjusted to the correct position for your autoguider or eyepiece.
- **Verify Focuser Travel:** Confirm that the helical focuser is being rotated through its full range of motion.
- **Device Compatibility:** Ensure your autoguider or eyepiece is compatible with the guide scope's back-focus requirements.

5.2 Guide Star Not Visible or Faint

- **Alignment:** Re-check the alignment of the guide scope with your main telescope.
- **Obstructions:** Ensure there are no caps or obstructions in the light path of the guide scope.
- **Autoguider Settings:** Adjust the exposure time or gain settings on your autoguider software to increase sensitivity.
- **Light Pollution:** In areas with significant light pollution, fainter guide stars may be difficult to detect.

5.3 Mounting Stability Issues (Flexure)

- **Tighten Thumbscrews:** Ensure all six nylon-tipped thumbscrews on the guide scope rings are securely tightened.
- **Dovetail Bar Security:** Verify that the dovetail mounting bar is firmly attached to your main telescope's mounting plate.
- **Mount Capacity:** Ensure your main telescope mount has sufficient capacity to handle the additional weight of the guide scope and autoguider without introducing flexure.

6. SPECIFICATIONS

Feature	Specification
Product Dimensions	10.2 x 2.36 x 2.36 inches
Item Weight	2 pounds
Model Number	13008
Objective Lens Diameter	60 Millimeters
Focal Length	240 Millimeters (f/4)
Focus Type	Manual Helical Focus

Feature	Specification
Compatible Devices	Orion StarShoot AutoGuider, Orion StarShoot AutoGuider Pro Mono Camera

7. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official Orion website or contact Orion customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

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