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Gskyer EQ901000

Gskyer EQ901000 Astronomy Refractor Telescope User Manual

Model: EQ901000

1. Introduction

The Gskyer EQ901000 is a refractor telescope designed for astronomical observation. It features a 90mm aperture and a 1000mm focal length, providing clear views of celestial objects. This manual provides essential information for the safe and effective use of your telescope, including assembly, operation, and maintenance.

Key Features:

- **Optimum Magnification:** 1000mm focal length and 90mm aperture with fully coated optical glass for bright, clear images.
- **High Quality Optics:** Includes K25mm, K10mm, and 5mm eyepieces for magnifications from 40X to 600X, plus a 6x30 finderscope for object location.
- **Adjustable Tripod:** Sturdy 1.27-inch stainless steel tripod allows for various observational positions.
- **Equatorial Mount:** Advanced EQ mount for precise tracking of celestial objects.

2. Safety Information

Please read and understand these safety guidelines before using your telescope.

- **Never look directly at the sun** through the telescope or its finderscope without a professionally manufactured solar filter. Permanent eye damage or blindness can result.
- Do not leave the telescope unsupervised, especially when children are present.
- Handle optical components with care to avoid scratches or damage.
- Ensure the tripod is stable on a level surface to prevent tipping.

3. Package Contents

Verify that all components are present before beginning assembly:

- Telescope Optical Tube (90mm aperture, 1000mm focal length)

- Equatorial Mount
- Adjustable Stainless Steel Tripod
- Eyepieces: K25mm, K10mm, 5mm
- 3X Barlow Lens
- 6x30 Finderscope
- 48° Erecting Prism (Zenith Mirror)
- Accessory Tray
- Counterweight

Image 3.1: Gskyer EQ901000 Telescope with all included accessories, including the optical tube, mount, tripod, and various eyepieces and lenses.

4. Setup and Assembly

Follow these steps to assemble your Gskyer EQ901000 telescope.

1. **Set up the Tripod:** Spread the tripod legs to a stable position. Attach the accessory tray to the center brace of the tripod.

2. **Attach the Equatorial Mount:** Secure the equatorial mount head to the top of the tripod. Ensure it is firmly tightened.
3. **Install the Counterweight Shaft and Counterweight:** Thread the counterweight shaft into the mount. Slide the counterweight onto the shaft and secure it with the locking screw.
4. **Attach the Optical Tube:** Place the telescope optical tube into the mounting rings on the equatorial mount. Tighten the rings securely, ensuring the tube is balanced.
5. **Install the Finderscope:** Slide the 6x30 finderscope into its bracket on the optical tube. Tighten the small screws to hold it in place. Ensure the finderscope is oriented correctly, not backwards.
6. **Insert the Diagonal and Eyepiece:** Insert the 48° erecting prism (diagonal) into the focuser. Then, insert one of the eyepieces (e.g., K25mm) into the diagonal and secure it with the thumbscrew.

Image 4.1: Close-up view of the Gskyer equatorial mount and the top of the tripod, showing adjustment knobs and counterweight attachment point.

5. Operating the Telescope

Once assembled, follow these steps for observation.

5.1 Aligning the Finderscope

The finderscope must be aligned with the main telescope for easy object location.

1. Point the main telescope at a distant, stationary object (e.g., a tree or building) during daylight hours.
2. Center the object in the main telescope's eyepiece.
3. Look through the finderscope and use its adjustment screws to center the same object in the finderscope's crosshairs.

5.2 Using Eyepieces and Barlow Lens

The telescope comes with multiple eyepieces and a Barlow lens to vary magnification.

- Start with the lowest magnification eyepiece (K25mm) for a wider field of view, making it easier to locate objects.
- Once an object is centered, you can switch to higher magnification eyepieces (K10mm, 5mm) for more detailed views.
- The 3X Barlow lens triples the magnification of any eyepiece it is used with. Insert the Barlow lens into the diagonal first, then insert the eyepiece into the Barlow lens.

Image 5.1: The included K25mm, K10mm, and 5mm eyepieces, along with the 3X Barlow lens, used to achieve various magnifications.

5.3 Focusing

To achieve a clear image, rotate the focuser knob until the image appears sharp. Fine adjustments may be needed as objects move or as your eye adjusts.

Image 5.2: Close-up of the telescope's focuser mechanism, where eyepieces are inserted and adjusted for clarity.

5.4 Using the Equatorial Mount

The equatorial mount allows you to track celestial objects as they move across the night sky due to Earth's rotation. After aligning the mount with the celestial pole (Polaris in the Northern Hemisphere), you can use the slow-motion controls to smoothly follow objects with minimal effort.

6. Maintenance and Care

Proper care will ensure the longevity and performance of your telescope.

- **Cleaning Optics:** Use a soft, lint-free cloth specifically designed for optical lenses. Gently wipe the lens surfaces. For stubborn smudges, use a small amount of optical cleaning fluid on the cloth, not directly on the lens. Avoid touching optical surfaces with your fingers.
- **Storage:** Store the telescope in a dry, dust-free environment. Use the dust caps for the objective lens and focuser when not in use.
- **General Care:** Avoid exposing the telescope to extreme temperatures or sudden temperature changes. Keep it away from moisture. Periodically check all screws and knobs for tightness.

Image 6.1: Close-up of the objective lens of the Gskyer telescope, showing the multi-antireflection blue film coating.

7. Troubleshooting

Here are solutions to common issues you might encounter:

Problem	Possible Cause	Solution
Image is blurry or out of focus.	Focuser not adjusted correctly.	Slowly turn the focuser knob until the image is sharp. Ensure the eyepiece is fully inserted.
Cannot find objects with the main telescope.	Finderscope is not aligned with the main telescope.	Align the finderscope during daylight hours as described in Section 5.1. Start with the lowest power eyepiece (K25mm) for a wider field of view.

Problem	Possible Cause	Solution
Image appears dim or dark.	High magnification eyepiece used in poor viewing conditions; dirty optics.	Switch to a lower magnification eyepiece. Clean the objective lens and eyepieces if necessary (refer to Section 6). Allow telescope to acclimate to outdoor temperature.
Finderscope image is backwards or inverted.	Finderscope installed incorrectly.	Ensure the finderscope is inserted into its bracket with the wider end (objective lens) facing forward, towards the front of the main telescope tube.
Telescope shakes excessively.	Tripod not stable; loose connections.	Ensure tripod legs are fully extended and locked. Tighten all screws and knobs on the mount and optical tube. Observe from a stable surface.

8. Specifications

Feature	Specification
Optical Design	Refractor
Aperture	90mm (3.54 inches)
Focal Length	1000mm (39.37 inches)
Focal Ratio	F11.1
Eyepieces	K25mm, K10mm, 5mm
Barlow Lens	3X
Finderscope	6x30
Zenith Mirror	48° Erecting Prism
Mount Type	EQ Advanced Equatorial Mount
Optical Coating	Multi Antireflection Blue Film
Resolution	≤2.9 Angular Field of View
Tripod	1.27 inch Stainless Steel Tripod
Product Dimensions	39.7 x 8.46 x 12.9 inches
Item Weight	24 pounds

Image 8.1: The Gskyer EQ901000 Telescope with its overall dimensions indicated.

9. Warranty and Support

The Gskyer EQ901000 Telescope comes with a 12-month manufacturer's warranty. This warranty covers defects in materials and workmanship under normal use.

For warranty claims, technical assistance, or any questions regarding your telescope, please contact Gskyer customer support through their official website or the retailer where the product was purchased. Please have your model number (EQ901000) and purchase information ready when contacting support.

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