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Askar 91F

Askar 91F Flat-Field Telescope User Manual

Model: 91F | Brand: Askar

1. INTRODUCTION AND OVERVIEW

The Askar 91F Flat-Field Telescope is a high-performance optical tube assembly (OTA) designed for both deep sky astrophotography and visual astronomy. It features a 91mm aperture and a native focal ratio of F6.7, providing excellent light-gathering capabilities and a wide field of view.

Its advanced optical design incorporates a quadruplet air-spaced APO configuration with one piece of ED (Extra-low Dispersion) glass, effectively minimizing chromatic aberration and delivering sharp, high-contrast images across the entire field.



Figure 1.1: The Askar 91F Flat-Field Telescope, showcasing its compact and robust design.

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Video 1.1: An overview of the Askar 91F Flat-Field Telescope, highlighting its key features and design elements.

2. WHAT'S IN THE BOX

Upon unpacking, please ensure all the following components are present and in good condition:

- Askar 91F Optical Tube Assembly (OTA)
- 230mm Vixen-style Dovetail Plate (with 1/4" and 3/8" screw holes)

- Dual-speed R&P 3-inch rigid focuser
- Handle Bar
- Tube Rings
- Retractable Lens Hood
- 1.25-inch Erecting Prism
- 8mm Eyepiece (1.25 inches)
- 20mm Eyepiece (1.25 inches)



Figure 2.1: The Askar 91F telescope alongside its standard accessories, including eyepieces and the erecting prism.

3. SETUP GUIDE

3.1 Mounting the Telescope

1. Attach the Vixen-style dovetail plate to your equatorial or alt-azimuth mount. The plate includes 1/4" and 3/8" screw holes for direct tripod mounting if desired.
2. Secure the Askar 91F OTA within the tube rings, ensuring it is balanced on the mount for stable operation.
3. Utilize the multifunctional handle bar for easy carrying and additional accessory mounting.



Figure 3.1: The Askar 91F telescope securely mounted on a tripod, ready for observation or astrophotography.

3.2 Attaching Eyepieces and Accessories

1. The focuser supports both 1.25-inch and 2-inch visual adapters. Insert the desired eyepiece or diagonal into the focuser.
2. For terrestrial observations, use the 1.25-inch erecting prism to correct image orientation (left-to-right and up-to-down).
3. For astrophotography, attach your camera using appropriate photographic extension tubes (e.g., M54 or M48, not included) to achieve the correct back focus. The self-flattened design simplifies this process, as no additional flatteners are required.



Figure 3.2: Close-up view of the focuser, illustrating the compatibility with both 1.25-inch and 2-inch visual adapters.

4. OPERATING THE TELESCOPE

4.1 Focusing

The Askar 91F is equipped with a dual-speed R&P 3-inch rigid focuser. Use the larger knob for coarse adjustments and the smaller 1:10 fine adjustment knob for precise focusing. This allows for critical focus, essential for both visual observation and sharp astrophotography.

4.2 Adjusting Image Orientation (Astrophotography)

The focuser features a 360° scaled rotator at the rear end. This allows you to precisely adjust the angle of your camera or imaging train without rotating the entire telescope, which is crucial for framing celestial objects in astrophotography.

4.3 Retractable Lens Hood

Extend the retractable lens hood before use to minimize dew formation on the objective lens and to block stray light,

improving contrast. Secure it in place with the locking screw.



Figure 4.1: Detailed view of the focuser and the retractable lens hood, showing their operational components.

5. MAINTENANCE

- **Cleaning Optics:** Use a soft, lint-free cloth specifically designed for optical surfaces. For stubborn smudges, use a specialized optical cleaning solution sparingly. Avoid touching the lens surfaces with bare hands.
- **Storage:** Store the telescope in a dry, dust-free environment. Keep the lens caps on when not in use to protect the optics.
- **Handling:** Always handle the telescope with care. Avoid sudden impacts or extreme temperature changes.
- **Focuser Maintenance:** The focuser is designed for smooth operation. If it becomes stiff or loose, consult a professional for adjustment. Do not attempt to disassemble it yourself.

6. TROUBLESHOOTING

Problem	Possible Cause	Solution
Fuzzy or Out-of-Focus Images	Incorrect focus, atmospheric conditions, or dew on optics.	Adjust focuser carefully using fine adjustment. Wait for stable atmospheric conditions. Extend dew shield or use a dew heater.
Chromatic Aberration (Color Fringing)	While the Askar 91F is designed to minimize CA, extreme conditions or specific targets might show slight fringing.	This telescope features ED glass to reduce chromatic aberration. Ensure proper focus. For astrophotography, post-processing can further mitigate any residual fringing.
Difficulty Achieving Focus with Camera	Incorrect back focus distance for your camera setup.	Ensure you are using the correct photographic extension tubes (M54/M48) and adapters for your specific camera. The self-flattened design means you only need to achieve focus, not calculate complex back focus.

7. SPECIFICATIONS

Feature	Detail
Model	Askar 91F Flat-Field Telescope
Aperture	91mm
Focal Length	609mm
Focal Ratio	F6.7
Optical Design	Quadruplet Air-Spaced APO (includes 1 ED Glass element)
Image Circle	44mm (Full-Frame Support)
Focuser	Dual-speed R&P 3-inch rigid focuser with 1:10 fine adjustment and 360° scaled rotator
Dovetail Plate	230mm Vixen-style (with 1/4" and 3/8" screw holes)
Product Dimensions	20 x 3.5 x 3.5 inches (approximate)

Askar 91F Size



Figure 7.1: Diagram illustrating the dimensions of the Askar 91F telescope.

Quadruplet APO Design Includes 1 Piece ED Glass

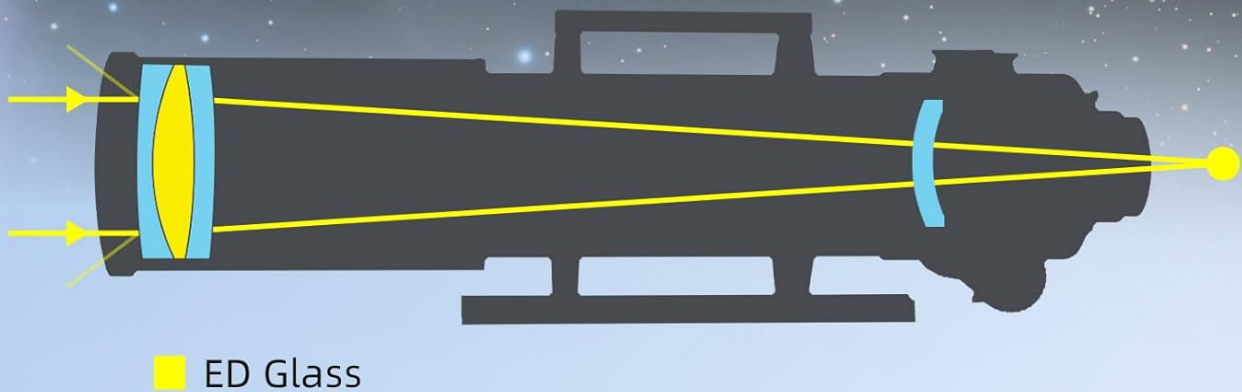






Figure 7.2: Illustration of the Quadruplet APO optical design, highlighting the ED glass element for superior image quality.

8. WARRANTY AND SUPPORT

The Askar 91F Flat-Field Telescope comes with a manufacturer's warranty. For specific details regarding warranty coverage, duration, and terms, please refer to the warranty card included with your product or visit the official Askar website.

For technical support, troubleshooting assistance beyond this manual, or spare parts inquiries, please contact Askar customer service through their official channels. Keep your purchase receipt as proof of purchase for warranty claims. You can visit the [Askar Store on Amazon](#) for more information and product updates.

	<p>Askar 103 APO Refractor Telescope User Manual</p> <p>Comprehensive user manual for the Askar 103 APO refractor telescope, detailing specifications, features, assembly, and packaging contents. Learn about its 103mm aperture, 700mm focal length, and advanced focuser.</p>
	<p>Askar 71F Flat-Field Refractor Telescope User Manual and Specifications</p> <p>Comprehensive user manual for the Askar 71F Flat-Field refractor telescope. Includes detailed specifications, features, assembly diagrams, usage instructions for visual observation and astrophotography, and packaging contents.</p>
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Askar

91F *Flat-Field*

User's Manual

WARNING

DO NOT LOOK AT SUN THROUGH TELESCOPE.
IT WILL CAUSE IRREVERSIBLE DAMAGE TO YOUR EYES.

www.sharpstar-optics.com

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91F Users Manual DO NOT LOOK AT SUN THROUGH TELESCOPE. IT WILL
CAUSE IRREVERSIBLE DAMAGE TO YOUR EYES. www.sharpstar-optics.com
English Instructions for use The Askar **91F** is an OTA with an aperture of 91mm, a
focal length of 609mm, and a native focal ratio of F6.7. It is designed for both visual
O...

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