

Astromania 2-inch Field Flatteners

Astromania 2-inch Field Flatteners Instruction Manual

Model: 2-inch Field Flatteners

Brand: Astromania

1. INTRODUCTION

The Astromania 2-inch Field Flatteners is an optical accessory designed to correct field curvature, a common optical aberration in refractor telescopes. Field curvature causes stars at the edges of the image field to appear elongated or out of focus, particularly in astrophotography. This field flattener ensures pin-sharp stars across the entire image, enhancing the quality of your astronomical photographs.

This device is suitable for use with refractor telescopes with focal ratios ranging from f/4 to f/8.

2. PRODUCT OVERVIEW

2.1 Key Features

- Designed for refractor telescopes with f/4 to f/8 focal ratios.
- Features an M48 thread for full aperture illumination at 2 inches.
- Provides 109mm of back focus for accommodating various accessories.
- Equipped with excellent multi-coating on lenses for optimal light transmission and image quality.

2.2 Components

The Astromania 2-inch Field Flatteners consists of several parts designed for precise optical correction and secure attachment.



Image 1: Astromania 2-inch Field Flattener with key components labeled, including the M42x0.75 Male Thread, Safety Groove, 2-inch Extension Tube Adapter, 2-inch Barrel Diameter, Locking Screws, and threads for eliminating light and standard 2-inch filters.



Image 2: The Astromania 2-inch Field Flattener shown in its disassembled state, illustrating the main optical unit, the 2-inch extension tube adapter, and the locking ring.

3. SETUP AND INSTALLATION

Proper installation of the field flattener is crucial for achieving optimal image quality. Follow these steps for correct setup:

1. **Identify Components:** Familiarize yourself with the field flattener's parts, including the main optical unit and the 2-inch extension tube adapter.
2. **Attach Extension Tube:** If your setup requires additional back focus, thread the 2-inch extension tube adapter onto the main optical unit. Ensure it is securely fastened.
3. **Insert into Focuser:** Insert the 2-inch barrel of the assembled field flattener into your telescope's 2-inch focuser. Secure it using the focuser's locking screws.
4. **Connect Camera:** Attach your camera or imaging device to the M48x0.75 male thread on the field flattener. Ensure the camera is firmly connected.
5. **Adjust Back Focus:** The field flattener requires a specific back focus distance of 109mm from the rear flange of the flattener to your camera's sensor. Use appropriate spacers or adapters to achieve this precise distance.



Image 3: Illustration showing the assembly process of the Astromania 2-inch Field Flattener, demonstrating how the extension tube adapter connects to the main unit.

3.1 Visual Guide: Assembly

Video 1: This video provides a visual demonstration of the Astromania 2-inch Field Flattener, showcasing its components and how they fit together. It highlights the multi-coated lenses and the overall construction.

4. OPERATING INSTRUCTIONS

Once the field flattener is installed, its operation is integrated with your telescope and camera setup. The primary goal is to achieve precise focus and maintain the correct back focus distance.

1. **Achieve Initial Focus:** With your camera attached, point your telescope at a bright star. Use your telescope's

focuser to achieve a rough focus.

2. **Fine-Tune Focus:** Use a Bahtinov mask or a focusing utility in your imaging software to achieve critical focus. The field flattener works by correcting the field, but precise focus is still necessary.
3. **Verify Field Flatness:** After focusing, take a test image. Examine the stars across the entire field of view, especially at the corners. They should appear round and sharp, indicating successful field flattening.
4. **Back Focus Importance:** The specified 109mm back focus is critical. Deviations from this distance can reintroduce field curvature or other aberrations. Ensure all adapters and spacers used between the flattener and the camera sensor maintain this exact distance.

5. MAINTENANCE

To ensure the longevity and optimal performance of your Astromania 2-inch Field Flattener, follow these maintenance guidelines:

- **Cleaning Lenses:** Use a soft, lint-free microfiber cloth specifically designed for optics. For stubborn smudges, use a small amount of optical cleaning solution applied to the cloth, not directly to the lens.
- **Dust Removal:** Use a blower brush or compressed air (designed for optics) to remove dust particles from the lens surfaces. Avoid wiping dry lenses, as this can cause scratches.
- **Storage:** Store the field flattener in a clean, dry environment, preferably in its original packaging or a protective case, to prevent dust accumulation and physical damage. Keep dust caps on when not in use.
- **Handling:** Always handle the field flattener by its barrel, avoiding direct contact with the optical surfaces.

6. TROUBLESHOOTING

6.1 Stars Not in Focus or Elongated

If you are experiencing issues with stars not being in focus or appearing elongated, especially at the edges of your images, consider the following:

- **Verify Back Focus:** The most common cause of poor field flatness is incorrect back focus. Double-check that the distance from the rear flange of the field flattener to your camera's sensor is precisely 109mm. Measure carefully and adjust spacers as needed.
- **Check Telescope Compatibility:** Ensure your refractor telescope's focal ratio is within the f/4 to f/8 range for which this flattener is designed. Using it with telescopes outside this range may yield suboptimal results.
- **Focuser Stability:** Ensure your telescope's focuser is stable and not experiencing any tilt or sag, which can affect image quality.
- **Collimation:** While field flatteners correct field curvature, good telescope collimation is still essential for overall image sharpness.
- **Environmental Factors:** Atmospheric seeing conditions can also affect star sharpness. Test on nights with good seeing.

7. SPECIFICATIONS

Specification	Detail
Brand	Astromania

Model	2-inch Field Flattener
Compatibility	Refractor telescopes (f/4 to f/8)
Back Focus	109mm
Camera Connection	M48x0.75 Male Thread
Telescope Connection	2-inch Barrel
Material	Glass optics, Metal housing
Item Weight	6.3 Ounces (approx. 178g)

8. WARRANTY AND SUPPORT

For warranty information or technical support regarding your Astromania 2-inch Field Flattener, please refer to the official Astromania website or contact their customer service directly. Keep your purchase receipt as proof of purchase.

Astromania Optics Contact: For specific technical data or assistance, please visit the [Astromania Store on Amazon](#) or their official website.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

