

## INSTRUCTION MANUAL

# Orion Field Flattener for Short Refractors

#8893

Your Orion Field Flattener for Short Refractors flattens the focal plane for astro-imaging without affecting the focal length of the telescope. When imaging with a CCD or DSLR camera, the far edges of the field of view are drastically sharpened when using the Field Flattener with your fast refractor.

The Field Flattener was designed for the camera's sensor to be 55mm away from the T-threads at the back.

### Attaching the Field Flattener to a DSLR Camera

A T-ring for the make and model of your camera is the only required accessory to attach the Field Flattener to your DSLR camera. The 55mm spacing is perfectly matched when using the T-ring (Figure 1.1).

### Attaching the Field Flattener to a CCD Camera

Most CCD cameras require less backfocus than a DSLR camera. That means you will need to add spacing as needed to fill the 55mm of required distance to the Field Flattener (Figure 1.2). T-thread spacers are available from Orion. For example, the StarShoot Pro V2.0 has 20.1mm of backfocus; so it would require adding approxi-

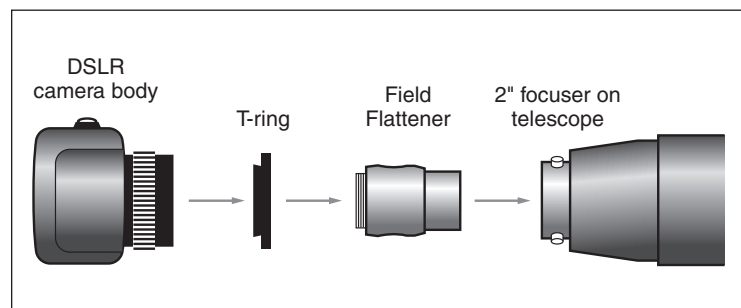


Figure 1.1.

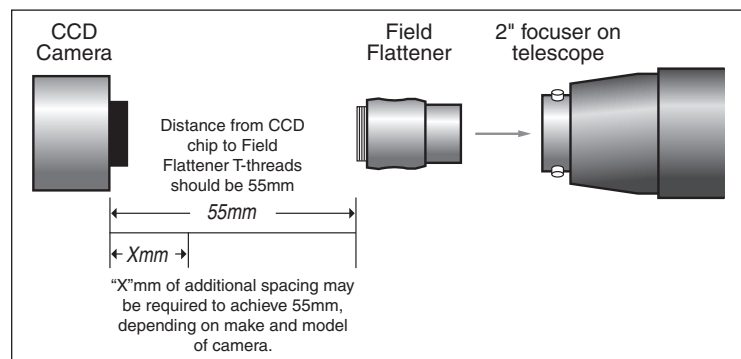


Figure 1.2.

mately 35mm of space between the camera and Field Flattener to achieve the proper distance ( $20.1 + 35 = 55.1\text{mm}$ ). Note that if you do not reach 55mm perfectly, the Field Flattener will still work, but gradually lose its effectiveness the further or closer from 55mm your camera is positioned.

Your CCD camera must have compatible T-threads on the camera body to attach to the Field Flattener. Remove the nosepiece (if equipped) and thread the camera body onto the back of the Field Flattener or T-thread spacer.

### Care & Maintenance

Care should be exercised when using all optical and mechanical telescope accessories. Keep your Field Flattener in a protected environment when you're not using it, and place the dust cap and threaded metal cap on the Field Flattener for storage. Avoid touching the lenses and coatings. If the outside of the lens should become dirty, you may want to clean it. Blow off all loose dirt with a blower bulb. Use only optical lens tissue and good-quality lens fluid. Wet a folded tissue and gently wipe the surface of the lens. Immediately use a second piece of lens tissue to gently dry the lens off. Do not rub or apply pressure, as this may scratch the lens if dust or grit is present.

### Specifications

Optics	2-element, fully-multicoated
Clear Aperture	38mm
Focal Length	55mm
Mechanical Profile	51mm
Weight	21g (7.5 oz)

## One-Year Limited Warranty

The Orion Field Flattener for Short Refractors is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid to: Orion Warranty Repair, 89 Hangar Way, Watsonville, CA 95076. If the product is not registered, proof of purchase (such as a copy of the original invoice) is required.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state. For further warranty service information, contact: Customer Service Department, Orion Telescopes & Binoculars, 89 Hangar Way, Watsonville, CA 95076; (800) 676-1343.

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