Dew Prevention

The Schmidt corrector is especially susceptible to condensation forming because the glass is immediately exposed to the outside air, just like the windshield on your car. If the temperature outside drops below the dew point, one may form on the corrector within minutes. The easiest way to prevent dew is to add an optical dew shield, available from Celestron, which surrounds the corrector and keeps the air immediately surrounding the corrector slightly warmer than the ambient temperature. If conditions are more severe, a dew heater, commercially available from other manufacturers, can be added to apply slight heat to the corrector lens to keep it dry all night.

If dew has already formed on the corrector, paint the telescope downward and allow the telescope to dry. You can also use a hairdryer to heat the corrector and evaporate the moisture inside. Allow the telescope to dry before using it.

Internal adjustments and cleaning should be done only by the Celestron repair department. If your telescope is in need of internal cleaning, please call the factory for a return authorization number and price quote.

CAUTION: Dew does not harm the telescope, but can lead to faster dust build up. Do not store the telescope to dry. Allow the telescope to dry first.

Care and Cleaning of the Optics

Optics should normally be removed with a pressurized air can, or a canned air brush. Spray at an angle to the lens for approximately two to four seconds. Then, use an optical cleaning solution and wipe the lens gently with a lint-free rag or tissue. Apply the solution to the tissue and then apply the tissue paper to the lens. Low pressure strokes should go from the center of the corrector to the outer portion. Do NOT rub in circles!

You can use a commercially made lens cleaner or mix your own. A good cleaning solution is isopropyl alcohol mixed with distilled water. The solution should be 64% isopropyl alcohol and 36% distilled water. Or, liquid dish soap diluted with water (a couple of drops per one quart of water) can be used.

To minimize the need to clean your telescope, replace the dust cap once you have finished using it.

To prevent condensation, make sure you remove the dew shield, and let the telescope cool slowly before storing it.

Dust Prevention

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Specifications

Optical Design
- Rowe-Ackermann Schmidt

Aperture
- 279 mm

Focal Length
- 1024 mm

Focal Ratio
- f/2.2

Central obstruction diameter
- 144 mm

Optical Coatings
- Schmidt/Aff

Total Telescope Kit Weight
- 36 lbs

Optical Window
- Broadband AR fully-multicoated removable-optical window

Focuser
- FeatherTouch MicroFocuser, 10:1 fine focus ratio

Cooling Fan
- 12V DC, tip positive polarity

Optical Tube Length
- 401 mm

Backfocus from included camera adapters
- 56 mm

Total back focus from flat surface above optical window
- 12.8 mm

On-axis RMS spot size
- <2.00 µm

RMS spot size 21 mm off-axis
- <2.25 µm

Relative illumination 21 mm off-axis
- <2.2

Optimized Image Circle Diameter
- 43.3 mm

Total Usable Field
- 52 mm

Celestron Two Year Limited Warranty

A. Celestron warrants your telescope mount to be free from defects in materials and workmanship for two years. Celestron will repair or replace, at its option, any component found to be defective in materials or workmanship. As a condition to the obligation of Celestron to repair or replace such product, the product must be returned to Celestron together with proof-of-purchase satisfactory to Celestron.

B. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Celestron reserves the right to modify or discontinue, without prior notice to you, any model or style telescope. Celestron reserves the right to modify or change, without prior notice to you, any model or style telescope.

C. This warranty is valid to U.S.A. and Canadian customers who have purchased this product from an authorized Celestron dealer in the U.S.A. or Canada. Warranty outside the U.S.A. and Canada is valid only to customers who purchased from a Celestron’s International Distributor or Authorized Celestron Dealer in the specific country. Please contact them for any warranty service.

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CELESTRON, LLC.
Customer Service Department
2835 Columbia Street • Torrance, CA 90503 • Tel. 800.421.9649

Telescope
Rowe-Ackermann Schmidt Astrograph
INSTRUCTION MANUAL
Model: 91075
celestron.com
The Rowe-Ackermann Schmidt Astrograph delivers a flat field, coma-free image across a large image circle for your imaging camera. The Astrograph can only be used with a camera.

Installing a Camera

1. Place the knurled retaining ring over the camera adapter and loosely thread it onto the telescope.
2. Holding your camera, thread the camera body (or T-ring, if a DSLR is used) to the camera adapter.
3. Carefully hold the camera so the camera adapter seats flatly.
4. Finish threading the retaining ring onto the telescope. Turn until the camera adapter is snug against the telescope. Do not overtighten! Camera orientation can be adjusted later.

Caution: Over tightening the camera adapter can increase the chance of loosening the lens assembly on the corrector, or cause the lens assembly to rotate against the corrector. Keep the camera adapter snug against the telescope, but do not overtighten.

Adjusting Camera Orientation

Once the camera is installed, you can rotate it by slightly loosening the retaining ring. Loosen the ring no more than 1/8 turn, rotate the camera as desired, and retighten the ring, or cause the lens assembly to rotate against the corrector. Keep the camera adapter snug against the telescope, but do not overtighten.

Fan Operation and Optics Cool Down

It takes time for the optics of the Astrograph to reach thermal equilibrium with the outside air. The greater the temperature difference between where the Astrograph is stored and the outdoors, the longer it takes to cool down.

Fan Operation and Optics Cool Down

Adjusting Camera Orientation

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Focusing

The Feather Touch Micro Focuser knob moves the primary mirror on the rear cell of the telescope. The larger black knob is the coarse focus, the smaller orange knob is the 10:1 fine focus. Turn the focusing knob until the image is sharp on your camera. If the knob will not turn, it has reached the end of its travel on the focusing mechanism. A single turn of the focusing knob moves the primary mirror only slightly. Therefore, it will take many turns (about 30) to go from close focus to infinity.

If you turn the focus knob too quickly, you can go right through focus without seeing the image. To avoid this problem, your first astronomical target should be a bright object (like the Moon or a planet) so that the image is visible even when out of focus. Critical focusing is best accomplished when the focusing knob is turned counterclockwise so that the mirror moves against the pull of gravity. This minimizes mirror shift.

To use the mirror clutches:

1. Use the focus knob to adjust the primary mirror to the desired focus.
2. Once in focus, turn the two mirror lock knobs clockwise until both are very tight and can be turned no further.

Warning! Once the mirror is locked down, do not turn the focus knob without loosening the mirror lock knobs first. Although turning the focus knob should not damage the telescope, undue stress can be placed on the focus mechanisms causing excessive image shift while focusing.

Collimation

The telescope is factory-aligned, but may need a slight adjustment after it is transported. The primary mirror and corrector are permanently aligned at the factory. You can make adjustments to the tilt of the lens assembly if needed. The Astrograph must be collimated with the camera installed. We recommend using a camera that does not obstruct the light path of the telescope, making it easier to see concentric star patterns.

Equipment needed:

2 mm Hex key
3 mm Hex key
Artificial star or a star outside at night, such as Polaris
Camera setup, ready to image

1. Install the camera on the telescope as described in the “Installing a Camera” section of this manual.
2. Rotate the camera adapter so that the 3 slotted openings allow access to the collimation screws.

Fan Operation and Optics Cool Down

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Attaching Accessories

The Astrograph includes a CGE-style dovetail which is also cross compatible with most accessories that work on the Losmandy D plate. The accessory dovetail can be used to mount an optional guidescope. The Celestron 80 mm Guide Scope package is compatible with the accessory dovetail.

A Celestron 50 mm finder scope can also be attached using the threaded holes on the rear cell of the telescope.