

# Instruction Sheet

## HoTech SCA Laser Collimator

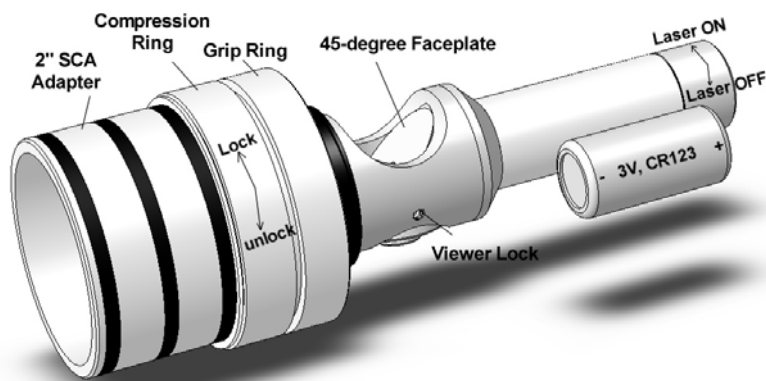
### LASER COLLIMATION for NEWTONIAN TELESCOPE

Please read the entire instruction sheet before using your SCA Laser Collimator

Thank you for purchasing the state of the art HoTech SCA Laser Collimator instrument. The laser collimator simplifies the collimation process. Collimation is a method to align your telescope's optics. Your telescope is aligned at the factory, but harsh handling during shipping can sometimes misalign collimation. Misaligned collimation can mean decrease of optical efficiency and astigmatism to your telescope showing blurry images. The following describes how to collimate your telescope with the aid of HoTech SCA Laser Collimator to optimize the optical efficiency of your telescope.

Be aware of the following as you use your Laser Collimator:

Only turn ON your laser when you are going to use it. Turn ON your laser with adult supervision for collimating the telescope purpose use only. Do not point the laser directly or indirectly via reflected glass or mirror to anyone's eye. We will demonstrate the laser collimation on a Newtonian DOB which applies to collimating all reflective telescopes in the similar way. For additional information, please visit our website, [www.HoTechUSA.com](http://www.HoTechUSA.com), for details.



#### STEP 1: Installing the laser collimator

- a). Loosen the thumbscrew on the focuser.
- b). Make sure the tip of the thumbscrew is completely recess from the inner tube of the focuser allowing complete opening of the inner tube.



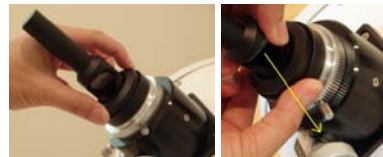
#### STEP 2: Inserting the laser collimator

- a). Make sure the compression ring is loose which keeps the rubber rings recess on the adapter.
- b). Then, hold the grip ring and slide the laser collimator into the eyepiece holder.



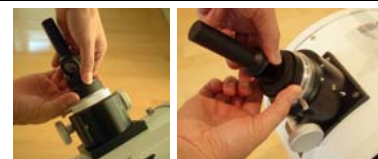
#### STEP3: Orienting the laser collimator

Grab on the grip ring (do not grab the laser tube), and orient the window opening on the side of the collimator so that it is pointing toward the bottom of the telescope.



#### STEP 4: Adapting the laser collimator on focuser

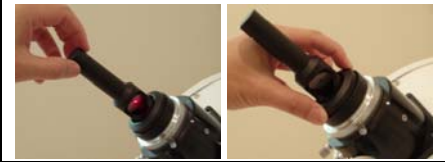
- a). Hold the grip ring and push the adapter flush against the shoulder of the focuser rim, then twist the compression ring clockwise on the collimator.
- b). Tighten the adapter until you feel the laser collimator is tightly clamped onto the focuser.



\*DO NOT tighten the thumbscrew on the focuser.

**STEP 5: Activating the laser collimator**

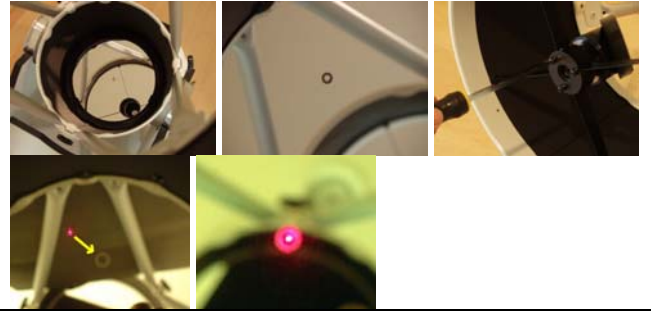
- a). Turn the end cap of the laser collimator clockwise until the laser is activated.
- b). Wiggle the grip ring (not the end of the laser) and check if the projecting laser beam on the primary mirror is shifting loosely. If so, repeat step 4 until the laser collimator is security adapted.



**STEP 6: Adjusting the secondary mirror**

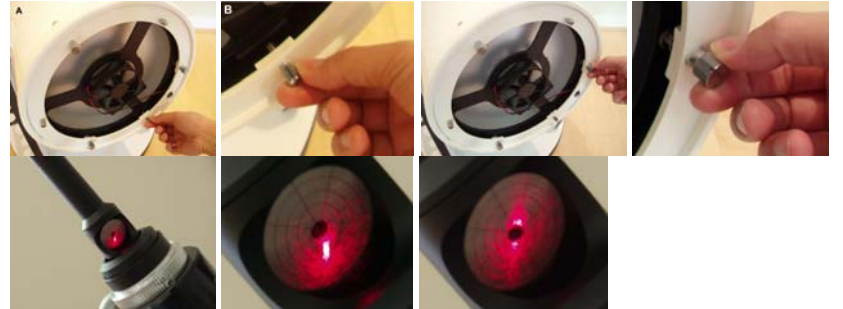
- a). Standing at the side of the telescope, check out the primary mirror and look for the laser pinpoint from the front of the telescope.
- b). Use necessary screwdriver, adjust the tilt screw on the secondary mirror holder until the laser pinpoint is in the center of the doughnut.

\*Notice that when the pinpoint is on top of the doughnut that the pinpoint brightens considerably. When it is in the center, it dims again.



**STEP 7: Adjusting the primary mirror**

- a). Go to the bottom side of the primary mirror tube and unlock the primary locking screws.
- b). Look up at the Laser Collimator from the bottom side of the primary mirror. Adjust the collimation screws on the bottom.
- c). Adjust the collimation screws until the pinpoint in the window of the laser collimator is in the center of the window.



**STEP 8: Iteration adjustments on both mirrors**

- a). Return to the secondary mirror holder and readjust the tilt screws, if necessary, to make sure the pinpoint is centered in the doughnut.
- b). If possible, check both the projecting and returning laser spot on the secondary mirror if both are overlay on the same position. Your telescope should now be aligned.



**STEP 9: Removal of the laser collimator from focuser**

- a). Turn off the laser by twisting the end cap counter-clockwise until laser is deactivated.
- b). Hold the collimator grip ring and twist the compression ring counter-clockwise to loosen the adapter. Grab the grip ring and pull out the laser collimator gently. And you are ready to use the collimated telescope.

