# INSTRUCTION MANUAL

# Orion® Solar StarSeeker™ Tracking Altazimuth Mount

## #10382

*Congratulations on your purchase of a quality Orion product.* Your new Solar StarSeeker Tracking Altazimuth Mount allows high performance locating and tracking of the solar disk during the daytime. The mount utilizes a Vixen style dovetail cradle, which is compatible with any small telescope that uses a Vixen dovetail bar.

When booted up, the mount will automatically find, locate and track the sun, without needing any manual star alignment. The mount uses a built in GPS receiver, coupled with a small CCD sensor to locate the position of the sun in the sky. The weight of the attached telescope should not exceed 7 lbs., so small solar telescopes such as the PST, SolarMax 40, 60, or Orion Short Tube 80 with white light filter would be appropriate for this mount.

These instructions will help you set up and properly use your Solar StarSeeker Tracking Altazimuth Mount. Please read them over thoroughly before getting started and keep this manual handy until you have mastered your mount's operation.

**Warning:** Do not attempt to attach any telescope to this mount that does not already have a properly mounted solar filter attached securely over the front optics. Attach the filter to scope BEFORE mounting and BEFORE powering on the mount. Remove any optical finderscope that is not filtered as well! This mount will automatically point to the sun, and if any telescope is attached that does not have a proper solar filter in place, damage can occur to the telescope, and injury to the user, as concentrated sunlight will be focused through the telescope. Burns and blindness can occur in a fraction of a second, so please be aware of the proper procedure before using this mount.

### 1. Parts List

| Qty | Description |
|---|---|
| 1 | Mount Head |
| 1 | Adjustable Tripod |
| 1 | Accessory Tray |
| 1 | Extension pier |

**WARNING:** ***Never look directly at the Sun through your telescope—even for an instant—without a professionally made solar filter that completely covers the front of the instrument, or permanent eye damage could result. Young children should use this telescope only with adult supervision.***

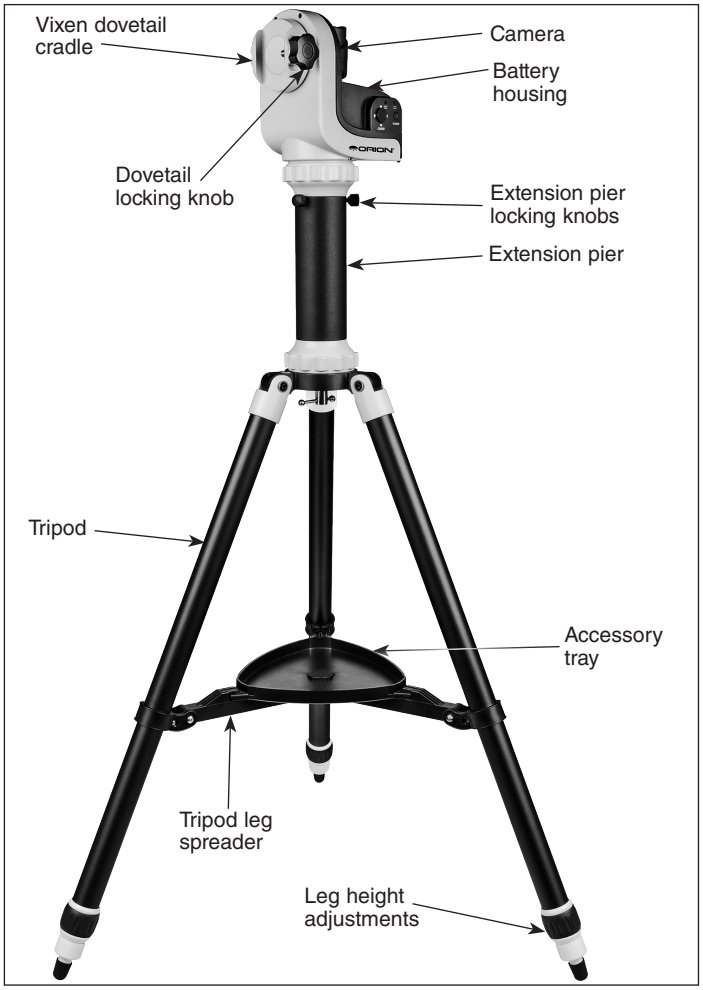


**Figure 1.** The Orion Solar StarSeeker Tracking Altazimuth Mount

### 2. Assembly

The mount assembly procedure is quick and easy, as there are very few parts, and can be completed in a matter of minutes. The individual components are packed in several boxes inside the shipping box. Please remove all parts from all boxes, and make sure all the component pieces are accounted for. Remember to save all the shipping material so that they can be used to transport the mount in the future. In the unlikely event that you need to return the mount, you must use the original packaging.

Refer to the **Figure 1** during assembly.

ORION TELESCOPES & BINOCULARS
AN EMPLOYEE-OWNED COMPANY

**Corporate Offices:** 89 Hangar Way, Watsonville CA 95076 - USA
**Toll Free USA & Canada:** (800) 447-1001
**International:** +1(831) 763-7000
**Customer Support:** support@telescope.com



IN 605 10/17

**Figure 2.** Accessory tray.

1. Remove the tripod from its box, and note that each leg has a telescoping section. To extend each leg, loosen the leg lock lever by rotating it counterclockwise, then extend the leg. When it has been extended to the desired length, rotate the leg lock lever clockwise until tight. Before placing an instrument on the mount, it is a good idea to press down on the tripod to make sure the legs are locked securely and will not give way under the instrument's weight.
2. Open the legs until the center support tripod spreader is at its widest (**Figure 1**).
3. Attach the accessory tray to the leg spreader by placing the hole in the tray over the center of the leg spreader and rotating the tray into the locking position. The tabs on the end of the triangular tray will lock underneath the channel in each arm of the tripod spreader when properly locked in place (**Figure 2**).

**Figure 3.** Extension pier.

4. Attach the extension pier to the top of the tripod and thread the central bolt up into the extension pier using the thumb knob underneath the top of the tripod (**Figure 3**).
5. Loosen the three locking knobs on the top wall of the extension pier and remove the top adapter from the extension (**Figure 4**). Attach this top adapter piece into the bottom of the Starseeker mount head, using the large thumb knob.
6. Place the entire mount with the installed pier adapter back onto the pier, and tighten down the three locking knobs to secure the head in place on the pier (**Figure 5**).
7. You are now ready to install a telescope into the Vixen style dovetail cradle on the side of the mount. **WARNING: Before attaching the telescope, make sure a properly secure solar filter is installed on your optical tube. ALSO: Make sure any optical finderscope is removed unless it has a solar filter as well!** Make note of where balance of the tube is (it can be difficult once the tube is installed on the mount to gauge where balance is), and insert the dovetail bar into the cradle (making sure the front of the telescope is pointing the same direction as the camera housing on the mount, **Figure 6**). Tighten down the dovetail locking knob to secure the optical tube.
8. Install 8 AA batteries into the battery holder behind the battery cover on the side of the mount head. Please note the direction of each battery in the holder (**Figure 7**).

You are now ready to start an observing session with the Starseeker Mount.

*A note on optical tube alignment:* The accuracy of the system depends on how well aligned the optical tube is in relation to the cradle. If you have a small scope such as a PST that uses a ¼"-20 tripod socket, and a dovetail mounting bar is threaded into that socket, you must make sure the dovetail bar is aligned as close to parallel to the optical tube as you can make it. The further away from parallel, the worse the positioning accuracy of the system will be.

### 3. Powering up and Using the Starseeker Mount

Do not attempt to move the mount head in the Azimuth (left and right) direction by hand. Doing so can damage the gears.

**Figure 4.** Extension pier adapter attached to bottom of mount head.


**Figure 5.** Mount head installed on extension pier

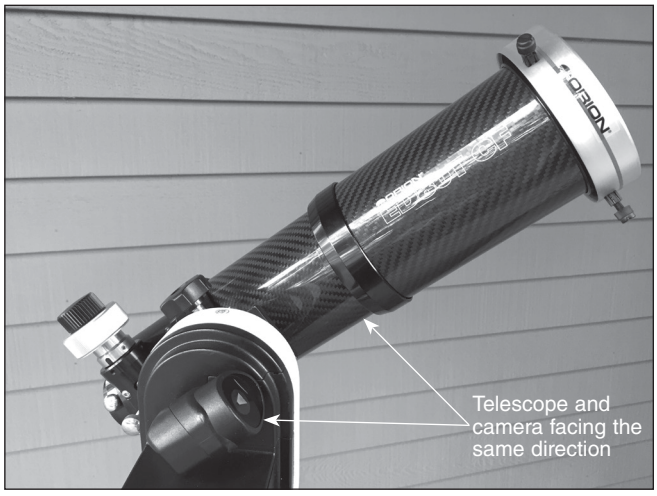


**Figure 6.** Telescope and Camera housing

There is a slip clutch in the Altitude (up and down) direction, so it is ok to move the scope up and down by hand. For best results and the quickest way to find the sun, rotate the scope in Altitude so it is horizontal, and pick up the tripod and rotate the entire unit around until the scope is facing the horizon directly below where the sun is in the sky. It's ok to start in any other azimuth position, but it will take longer for the mount to acquire the sun, and drain a bit more battery life as it slews around left to right.

1. **Make sure the solar filter is properly attached to your scope, and any optical finderscope is removed or fitted with a solar filter. Do not proceed to step 2 until this is verified.**
2. Verify the tripod is level: there is a small bubble level in the top of the mount to help. Adjust each leg until level.


**Figure 7.** Battery compartment.

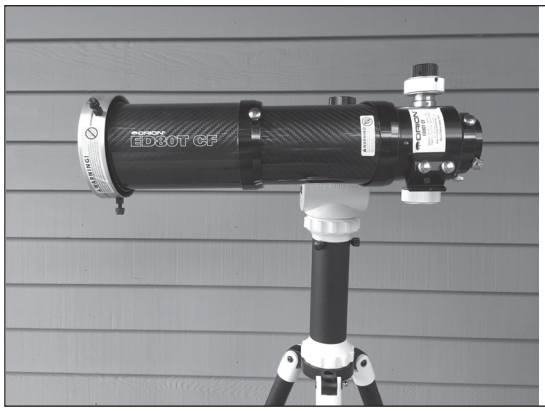


**Figure 8.** Home position


**Figure 9.** Control Panel

3. Verify the telescope is inserted into the dovetail cradle in the proper orientation: it should be pointing the same direction as the lens of the camera in the middle of the mount.
4. Manually move the telescope up or down until it is pointed roughly horizontal. The system will find level once it's turned on, so you want to scope to be close to level for this to occur. This is the "home" position (**Figure 8**).

5. Press the power button for approximately 1 second to turn the system on. The red light will appear when on (**Figure 9**).
6. Wait for the scope to find the horizontal position for the tube, and then the red light will begin blinking, indicating the GPS signal is being acquired. This may take a few moments, and if it doesn't begin to find the sun after a minute or two, there may be interference from the GPS signal. Move to a new location away from buildings or trees, and try again.
7. When the GPS location is found, the mount will automatically direct the scope up to the proper altitude angle for the sun, and then begin a horizontal sweep using the camera, in order to acquire the sun. If you previously positioned the tripod so the scope was facing the horizon directly below the sun, the mount should acquire the sun quickly, without having to sweep in a wide circle.
8. When the mount stops moving, the sun should be somewhere within the field of a low power eyepiece. Look through the eyepiece (verifying you have a solar filter attached first!) to find the sun. It may not be centered, based on the alignment of your dovetail bar, cradle and optical path, so slide the large button labeled CENTER on the control panel towards one of the four arrows around the button in order to calibrate the unit and center the sun (**Figure 9**). Once centered, the mount will continue to track the sun!
9. When you are finished with your observing session, press the power button for approximately 3 seconds to power the unit down. Return the scope to the horizontal position so you're ready for the next outing!

### 4.Care and Cleaning of the Starseeker Mount

If your mount accumulates dirt/dust while operating, wipe with a soft cloth after use. Clean the mount with mild household detergent and a soft cloth. Keep the mount in a clean and dry environment when not in use, and do not store the mount outdoors.

To prevent damage, we recommend removing your telescope or optical instrument from the mount when transporting.

### 5.Technical Specifications

| | |
|---|---|
| Mount: | Altazimuth fork arm |
| Tripod: | Aluminum |
| Tripod Height: | Range of 37.5" - 57" from ground to center of dovetail cradle |
| Total Weight: | 8 lbs. |
| Motor Drives: | Dual-axis geared go-to, internally housed |
| Power requirement: | 8 AA batteries |
| Tracking Rate: | Solar |
| Alignment method: | GPS data, plus CCD sensor acquisition |

## One-Year Limited Warranty

This Orion product 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. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

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. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

For further warranty information, please visit www.OrionTelescopes.com/warranty.

ORION
TELESCOPES & BINOCULARS
AN EMPLOYEE-OWNED COMPANY

**Corporate Offices:** 89 Hangar Way, Watsonville CA 95076 - USA
**Toll Free USA & Canada:** (800) 447-1001
**International:** +1(831) 763-7000
**Customer Support:** support@telescope.com