

SKY-WATCHER SOLARQUEST MOUNT

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Sky-Watcher launched recently an azimuthal mount designed specifically for solar observing¹. The SolarQuest mount has many interesting features. A built-in GPS automatically enters date, time and location and calculates the altitude and azimuth of the Sun. The mount then points the telescope to the correct altitude and slews clockwise to find the Sun. When the Solar Sensor detect the Sun the mount lock onto it and begins tracking. It is that simple.

SolarQuest Mount Specs²:

- HelioFind™ Solar Alignment Technology: Solar Sensor with 4 X Photodiodes & built-in GPS data fixing to obtain time & location to calculate the sun's azimuth and altitude
- Telescope Auto-levelling feature with the help of the built-in tilt sensor (3 X axis accelerometer in the sensor block).
- Auto drift correction through feedback from Solar Sensor
- Auto Pointing Offset Correcting Feature
- 8-Way Sliding Switch for Centring Sun in Field of View
- Tracking Rates: Alignment-Free Solar Tracking
- Pointing Accuracy: Up to 3 arc-minute (after customer calibration)
- Resolution: 2073600 Counts/Rev., 0.625 arc-second
- Slewing Speeds: 16X & 1200X
- Tracking Mode: Dual Axis Tracking
- Motor: DC Servo Motor, Gear Ratio 6480
- Payload Capacity: 4 kg
- 45mm Sky-Watcher/Vixen type dovetail saddle
- 3/8" Screw Fittings (tripod/mount)
- Adjustable Aluminium Tripod with Accessory Tray
- Bubble Level
- Height of Tripod/Mount: 80.5 cm – 152 cm
- Mount Head Weight: 1.3 kg
- Total Weight with Tripod: 4.05 kg
- Low Power Consumption

¹ *The SolarQuest mount is designed for use with solar telescopes only. Do not point any other type of optical device at the Sun. Looking directly at the Sun without verified-safe, professionally made solar filtering will cause immediate and irreversible damage to your eye.*

² <http://ca.skywatcher.com/product/product/solarquest/>

- Power Requirement: 8 AA Size Batteries or External Power Supply DC 12V, Tip Positive (via adaptor panel).



Figure 1 – Sky-Watcher SolarQuest Solar Go-To Tracking Mount & Tripod.

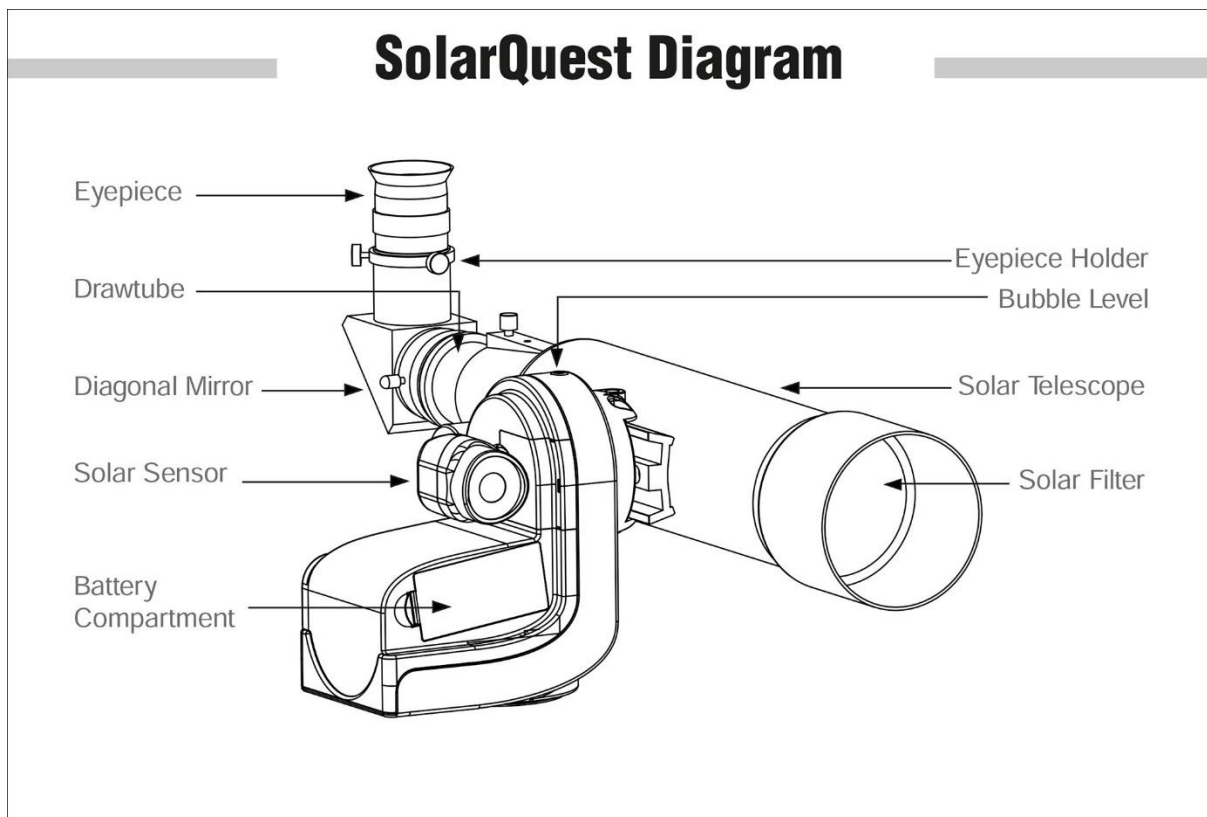


Figure 3- SolarQuest diagram

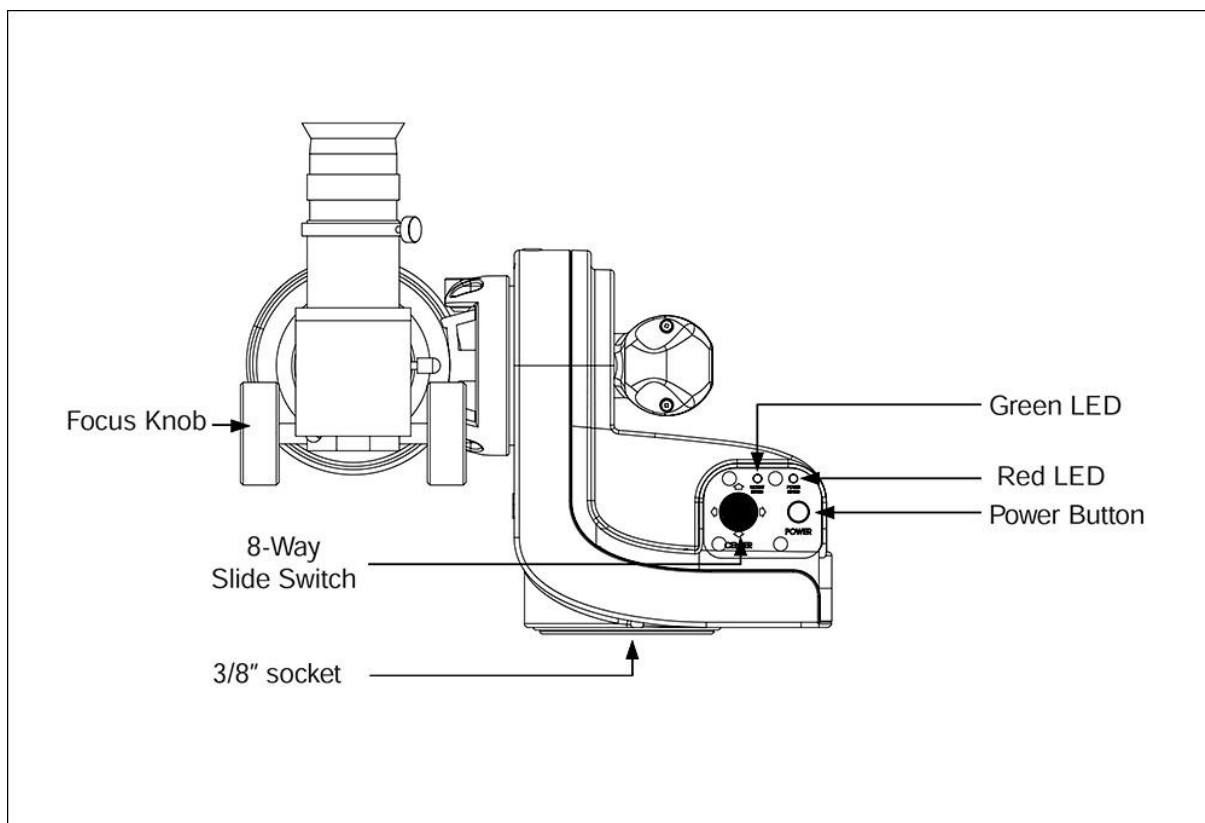


Figure 3- SolarQuest diagram.

Using the SolarQuest mount is surprisingly easy. The mount is lightweight and includes a tripod. The tripod and pier extension are the same supplied with the SW AZ GTi mount³.

After levelling the tripod and attaching the solar telescope, the only thing left to do is to turn on the mount. SolarQuest then gets a GPS fix (about 1 to 2 min) and raises the OTA to the correct altitude and starts to slew in azimuth until it finds the Sun.

When you use the mount for the first time, the 8-way slide switch should be used to centre the sun in the field-of-view. The power button should then be pressed twice, and this offset is stored and applied every time the mount is switched on. It is that simple.

Under clear skies the mount tracks the Sun flawlessly, keeping the Sun in the Field-of-view for hours.

Point to the Sun automatically:

1. Turn on power. The SolarQuest will level the solar telescope automatically and then takes up to 2 min to acquire GPS lock before the next movement.
2. The SolarQuest will bring the solar telescope to the elevation of the Sun and starts slewing in clockwise in the azimuth direction to search for the Sun.
3. The red LED (figure 3) will blink slowly during the search and becomes solid after the SolarQuest mount locates the Sun successfully.
4. Use the 8-way slide switch (Figure 3) to centre the Sun in the FOV of the eyepiece. It is normal to find lags in movement when switching to an opposite direction.

³ <http://www.skywatcherusa.com/product/az-gti-mount/>

5. The Sun might be off-centre in the eyepiece after the SolarQuest finishes the auto-pointing routine. After centring the Sun manually in the eyepiece, users can double click the power button to save the corrections. It will be applied to the next auto-pointing routine.

Tips:

- *Before turning on power, pointing the solar telescope to the left side of the Sun can reduce the searching time.*
- *Use a long focal length eyepiece (e.g. 20 to 25 mm) to start observing.*

I did not test the SolarQuest mount with cloudy skies. However, I was able to verify that, after the first auto-pointing routine if the Solar sensor is covered the mount continues to track the sun. This means that the Solar sensor must detect the Sun at least once to start tracking.

SolarQuest can be powered by 8X AA batteries or alternatively via a 12v power supply. To use an external power supply, the battery cover and battery cassette has to be removed and a different battery cover with a built in 12V socket must be attached.

Overall the SolarQuest mount is very easy to use and works exactly as described by the manufacture.



Figure 4 – Sky-Watcher SolarQuest mount (Pedro Ré 20181002), Youtube video
<https://youtu.be/pyRwDORAUc8>

SolarQuest manual (PDF file) - <https://storage.googleapis.com/skywatcher-canada-new/downloads/e7b76594c77cda3900229ae0d709be379abe5ed3.pdf>

Youtube videos:

- <https://youtu.be/pyRwDORAUc8>
- <https://youtu.be/4ro3uX9zBCs>
- <https://youtu.be/wUWAZrIX72s>
- <https://youtu.be/pJvndoOn6Jk>