

All-Star Polar Alignment

The All-Star Polar Alignment feature is only available on Celestron NexStar controllers. Provided here is a Step-By-Step instruction on how to do the procedure. It is assumed that a Two Star Alignment with 4 calibration Stars has been completed. If not, read that instruction first.

Step 1:

Use the hand controller and make sure it says “CGE Ready”. If not, press the “Undo” button until it says “CGE Ready”.

Step 2:

Press the “List” button and select “Named Stars” then select a star in the southern sky near the meridian. This makes it easy to physically adjust the mount. Press Enter and let the scope slew to the star. Don’t worry about centering the star in the eyepiece. That will come in Step 4

Step 3:

Press the “Align Button” then the “Up or Down” buttons until “Polar Align” is showing on the screen. Press “Enter” then the “Down” button until “Align Mount” is displayed then press “Enter”. You will get a warning. However if you selected a star in the south, you can ignore the warning.

Step 4:

The Scope will then Slew to the star that you selected in Step 2. Follow the directions on the hand controller and center the star in the Finder Scope then press “Enter”. Use the “Direction Buttons” to precisely center the star in the Eyepiece. Make sure your final approach is done using the “Up Arrow” and the “Right Arrow”. This will eliminate any “Gear Slop” in the mount. When the star is centered, press “Align”.

Step 5:

Here you can either cancel the Polar Alignment process by pressing, “Undo” or press “Enter” to continue. If you press “Enter”, the scope will slew to where the star should be if the scope is precisely Polar aligned.

Step 6:

Here is where the actual alignment takes place. I place the “Hand Controller” in its cradle so that I will not be tempted to use it. **“DO NOT USE THE DIRECTION BUTTONS”** to align the star. You must use the manual “Altitude” and Azimuth” adjustment feature to center the star in the Eyepiece. For the CGE Scopes it is a small “Allen Wrench” that you turn to physically move the mount. Precisely center the star in the Eyepiece or Camera and when you are satisfied, press “Enter” on the hand controller. If all went well, the controller will say “Align Complete”

Notes:

This is an iterative process and is only as effective as your centering of the star in the Eyepiece or Camera. I usually repeat the process by powering off the Scope, doing a “Two Star” align with 4 calibration stars, then repeating the All-Star Polar Alignment steps above. If you do not do this, depending on how far you manually adjust the mount, your pointing alignment will not be accurate, but the Polar Alignment will.

Tips:

Using an Eyepiece with a Cross Hair is preferable. If you do not have one, a moderately powered Eyepiece will suffice. I do not have a Cross Hair Eyepiece, so I use the Astrophotography Camera. The software I have will allow the camera to use “Live View” on a Computer. I can set the center of the camera view and put the star in a small square box in the center of the view. This is as accurate as a Cross Hair Eyepiece