

Alignment tips: Quick – start guide for “i” series telescopes

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Before starting: Be sure to set the final GOTO approach directions in the hand control (HC) to positive for both altitude and azimuth. Also, choose an eyepiece with a *wide* field of view, preferring one with at least 0.6-degree angular width, such as the 25mm eyepiece that comes with the 8i. (If you still are not satisfied with the quality of GOTO behavior even after trying these tips, you might try switching to a high-power eyepiece for centering alignment stars, then switching to a lower-power eyepiece for GOTO slews. Resort to this, though, only after you have tried using a single eyepiece, with a wide field of view, for both alignment-star centering and GOTO's.) Finally, be sure to review the instruction manual directions for doing an auto-align. This quick-start guide only gives suggested changes to, and enhancements of, those directions. This is *not* a complete set of alignment directions.

- 1) When directed by the HC to set the telescope to “north and index,” use the direction buttons first to point the tube in the direction of Polaris (the North Star). This will get you pointing north. (If you cannot see Polaris, rough pointing to the north is adequate.) Then, use the “down” direction button to drive the tube downward until the index markings are well below the index position. Then press the “up” direction button to put the markers at the index position. It is not important that the index position is exactly set, but it is important that the final movement of the tube is *up*.
- 2) When the scope (HC) starts selecting alignment stars, it is important to be sure to select two stars that are *very* widely separated. This probably will mean going through the setup process a few times (turning off the scope between each attempt) until you become familiar with the selection of stars the HC will choose for you. The best choices of alignment stars are ones where you need to spin around on your heels to look at the second one after looking at the first. (The best alignment-star choices are those that are at least 100 degrees apart.)
- 3) After you have centered the first star in the finder, making sure that the star is in the field of view (FOV) of the eyepiece, and have pressed “enter” (as directed in the instruction manual), put the star far out of focus. It should become a giant blob in the FOV. This makes centering of the star in the eyepiece easier.
- 4) While centering the stars in the FOV, you must be sure that the final direction-button presses on the HC are *down* and *right*. This is so important, in fact, that even if you think a star is already well centered in the FOV, intentionally slew the tube by pressing the *up* and *left* buttons, until the alignment star is in the upper left corner of the FOV. Then, try to press only the *down* and *right* buttons to center the star. If you overshoot, it is OK to back up. Just be certain that the final direction-button presses you make are *down* and *right*.
- 5) Center the second alignment star in the same way as you centered the first. And remember to re-focus when done with the second star!

More information: GOTO quality will generally be best for targets that are not too far from the imaginary line connecting the chosen alignment stars. (You can skip poor alignment-star choices by pressing “undo” as the scope is slewing to them.) If the alignment stars are at least 100 degrees apart, you can expect to get good GOTO behavior approximately 70 degrees to either side of this imaginary line. If the alignment stars are only 70 degrees apart, GOTO quality is good approximately 50 degrees to either side of this imaginary line. Try to never choose alignment stars closer than 70 degrees apart. Always choose the most widely separated alignment stars that are available, but avoid choosing them in one area of the sky. (Choosing both stars near the eastern horizon, for example, is not good.) GOTO's for targets close to the imaginary line connecting the alignment stars are usually more accurate. Thus, choosing alignment stars for which the imaginary connecting line forms a diagonal sweeping from one side of the sky to the other, and also passing close to the Zenith (i.e., directly overhead), is a good strategy.

For even more information: See, “Alignment tips for ‘i’ series scopes”.