

## Anderson Observatory Users Guide (8/18/2016)

### Startup Procedure

NEVER MOVE OR POINT THE TELESCOPE MANUALLY!

NEVER TOUCH OR CLEAN THE TELESCOPE OPTICS!

1. Plug in the dome slit switch. Open the slit. Unplug the dome slit switch. If the slit will not open, stop now. There is no point in trying to boot the telescope.
2. Take the dust caps off telescope (front and eyepiece end), and the finder scope. Place these on the desk.
3. Put the large Axion LX eyepiece into the telescope. Secure it in place with set screws.
4. On the power strip cable-wrapped to the side of the telescope's vertical mount pole, make sure the switch is on (lighted red).
5. Plug the telescope's DC power connector into the telescope pier. (The DC power unit sits at the base of the equatorial telescope mount.)
6. Turn on the telescope using the switch on the telescope pier.
7. The hand controller should say "Wake up. Press Enter to wake from hibernate." Press Enter. (If this did not happen, see the Appendix.)
8. You will be shown the current time (on a 24-hour clock display). Check the displayed time against your cell phone. Either accept the current time as correct, by hitting the Enter key, or enter time of the next approaching minute and wait until your cell phone reaches that minute, then hit the Enter key.
9. You will be asked to Select One of the following: Daylight Saving or Standard Time. Move through this list using the Up and Down keys (the 6 and 9 keys). Hit Enter when the appropriate selection is displayed. Repeat for the appropriate Time Zone (Eastern USA, of course).
10. You will be shown the current date. Hit Enter to accept the displayed date, or change it and hit Enter.
11. The hand controller will display "CGE Pro Ready."
12. Proceed to observing objects! Procedures for automatically moving the telescope to an object include
  - a. Selecting a list by hitting one of the keys (M for Messier, Cald for Caldwell, NGC for NGC objects, etc.), then entering a value, or using the Up/Down buttons to scroll through the list, then hitting Enter (watch out --- the telescope will slew on its own to the selected object!).
  - b. Hitting the List key, using the Up/Down keys (6 or 9) to scroll through the list of lists, then hitting the Enter key to select a list, etc.
  - c. Hitting the Tour key to make the telescope show you a tour of objects.
  - d. In any case, if you ever want to go back a step, hit the Undo key.
  - e. Rotate the dome as necessary.
  - f. Use the arrow keys to center any objects in the Telrad, and/or finder, and/or eyepiece.

## Shutdown Procedure

1. Hit the Menu key. Scroll Down (key 9) to Utilities and hit the Enter key. Scroll Down (key 9) to Hibernate. Press Enter.
2. Set the slew rate to its highest value, by hitting the Rate key and the 9 key.
3. Use the arrow keys to put the telescope in a safe, stable position with its counter weights at their lowest and the telescope pointing approximately toward the North Celestial Pole (Polaris). DO NOT try to automatically point the telescope at Polaris!
4. Press the Enter key.
5. Turn off the telescope using the switch on the telescope pier.
6. Disconnect the DC power connector from the Telescope pier.
7. Take out the eyepiece and return it to its box.
8. Replace the lens caps on the telescope and finder.
9. Turn off the Telrad.
10. Rotate the dome so the slit is above the stairs. Plug in the dome slit switch. Close the slit. Unplug dome slit switch.
11. Turn out all lights, lock the observatory door.
12. Close the observatory gate.
13. Close and lock the pasture gate on the way out.

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### Appendix (Warning! More complicated than normal usage. Use only if you lose power to the telescope.)

If you lose power or the telescope does not properly wakeup, you will need to realign the telescope before using it. This is a more involved process than waking it up from hibernation. If you don't want to try this, turn the telescope off, leave and lock the observatory, then contact Dr. Simonetti (jhs@vt.edu) so he can realign the telescope. If you want to try realigning the telescope, this Appendix outlines the procedure.

1. With the telescope power on, press the Menu key, scroll Down to Utilities, and press Enter. Scroll Down to Factory Setting, and press Enter. The hand controller will say you need to press the zero key to proceed. Press the zero key. Then turn the telescope off, wait ten seconds, and turn the telescope on.
2. Display will say CGE Pro Ready. Press Enter. Hand controller will respond with "Set switch position." Press Enter again.
3. Display will say "Select One, Custom Site." Press Enter to select Custom Site.
4. Enter correct longitude of observatory (see sign on inside wall of observatory dome). Press Enter. And press Enter when display says "West."
5. Enter correct latitude of observatory (see sign on inside wall of observatory dome). Press Enter. And press Enter when display says "North."
6. The hand controller will prompt you for the current time (24-hour clock). Use your cell phone time to input a time that is on the next minute ahead of the current time and hit the Enter key when the minute changes on your cell phone (try to be accurate, it matters).
7. Select either Daylight Saving Time or Standard Time using the Up and Down keys and hit Enter.
8. Select the appropriate time zone (Eastern USA), and hit Enter.
9. Enter the appropriate date and hit Enter.
10. Choose Two Star Alignment by hitting Enter when it is displayed. These stars will be in the west. It will suggest a first star (all the suggested stars are bright stars). Hit Enter to go with its suggestion. The telescope will slew (move) to the star. If that star is not observable (behind clouds, or a tree), press the Undo key. It will suggest another star. When you get an observable star, center it in the Telrad using the arrow keys on the hand controller, then press Enter. Finally center the star in the eyepiece, and press the Align key. Repeat this procedure with a second suggested star.
11. It will ask you to "Add calib stars?" Follow the same selection and centering procedure, but all the calib stars (calibration stars) should be in the east. It will only allow for a few calib stars (four at most).
12. The display will say "CGE Pro Ready." You are now ready to begin observing. Go to the last step in the Startup Procedure to begin observing.