

Using the 14" Telescope

1. Open the AstroDome
 - a. Undo the 2 outside latches, Front and Back, and lower the shell to the southward side.
 - b. Climb inside. Watch your step.
 - c. Undo the topmost, center latch.
 - d. Lower the freed half to the ground slowly.
 - e. Undo the remaining latches and lower the segments to the ground.
2. Turn on the Master Switch on the Power Supply. It is the bottom switch and is Red. This powers up the orange cable, to which the CCD and Filter Wheel are connected, and powers up the Video camera.
3. Take off the Lens Caps to the 14" and its Finder.
4. If the temperature is going to drop below the dew point, put the dew shields on the scopes. It is easier to put the dew shields on earlier in the evening before it dews than after it dews and have to use the blow dryer to dry everything off. It is also easier if 2 people put it on, as it can be cumbersome.
5. Turn on the Mount. The switch is on the Eastern side above the USB Extender.
6. Turn on the TelRad viewfinder.
7. One person should stay with the scope.

In 606

1. Turn on the Intercom box.
2. Log into the computer:
3. Open up TheSky program. Will probably have to resize the window and arrange the toolbars.
4. In the Sky load whatever Sky savefile you want.
5. There should be a TPoint model embedded in TheSky already. If not under Edit, Insert, TPoint. Click Create from File. Browse and insert the appropriate Tpoint file (has .tpt extension) .
6. Establish a link to the Scope. Green Scope icon in the tool bar.
7. It will fail to Sync. That is OK. You will do it.
8. Turn On the Black and White Monitor. This is the Finder Camera's Video.

On the Roof

9. The Person on the roof should use the Paddle to slew to a Known (you know what star you are looking at) bright star. Hit FUNCTION on the paddle to change slew speed.
10. Look through TelRad and center the star in the center circle.
11. You should now be able to see the star on the Video Screen in 606.
12. **DO NOT ADJUST THE FINDER OR TELRAD.** If a problem is suspected notify the TA.

606

13. Open the Motion Control Menu under the Telescope Menu in TheSky program.
14. Use the Motion Controls to center the star in the video screen. When you click the N,S,E, or W button you have to hold it down for as long as you want the scope to move. You can adjust the speed of the slew using the pulldown menu.
15. Click on the star (the one you slewed to) in the Sky program. A box will popup and tell you the name of the star. Make sure this is the star you at which you are pointed.
16. The same box with the star name also has a Telescope tab. Click it. In this menu you will see the SYNC button. When you have centered your first star and have its name in the Object box click SYNC. It will ask for confirmation because you have a TPoint model already inserted. Choose to make a short mapping run using the existing Tpoint model.
17. After this point you will not use SYNC again unless the scope has been turned off or the program crashes.
18. Now pick another star. Make Sure it is on the Same side of the meridian at which you are currently looking.
19. Click on it in the Sky. Under the telescope tab at the bottom there is a little green telescope icon. This is Slew. Click Slew. Be careful and watch the telescope reticule on the screen. If the reticule goes blatantly the wrong way, Cancel the slew, and use the Slew Prior button to get back to where you were. Check to be sure the star you picked is on the same side of the meridian as the first star. If it is on the same side of the meridian, you may have to manually (i.e. with the hand paddle) point it to 2-3 more stars mapping each of them before the scope knows where it is.
20. Once centered in the Video screen, you will Map the star. Mapping lets the computer know the pointing error. To Map hit the Crosshair icon in the Object information box. It will ask for confirmation. Click ok.
21. After 4-6 stars you should be able to stop mapping. Though every star you map will increase pointing accuracy, so it is a good idea to map the stars you slew to.

22. When trying to find an Object far away from your current position it is wise to star jump. This entails hopping from star to star till you get to your object. This will allow you to continually correct for any small errors in pointing at each star. This is especially true if your Object is dim and unable to be seen on the video screen. Slew to a star that is very close to your object. Correct for pointing error Map that star and then slew to your Object. Take a longer exposure with the CCD to see if you got the Object on the chip.
23. Keep in mind how far off the pointing error for you hops and in which direction. If your errors in pointing all night long have been in RA by about 4' East (this is an example!), then slew to a star with the same RA as your Object. This way the only movement is in DEC and you avoid the RA error. If this is not feasible, and you failed to get the Object on the Chip the 1st time, (remember the error from previous hops, 4' East) jog the scope 4' West to compensate for the error. Take a CCD image and see if it worked.
24. If the Object still does not appear in the Video screen, check to see if it is cloudy.

Filter Wheel

1. There are 2 methods of operation. Manual and Computer controlled.
2. Manual operation is accomplished with the handpaddle in the dome.
3. Computer control is accomplished by opening up the Filter where software. The icon looks like a union jack.
4. The software should connect to the Filter Wheel. If not click the Home/Learn Button.
5. You should see the names of the filters in the windows. These may not be correct. The order of the filters changes from semester to semester. Ask Quinn the order of the filters.

Camera

1. Open up Maxim DL.
2. Under the View Menu select the CCD Control Window or click the Camera control Icon.
3. In the Setup tab click Connect.
4. If the connection fails, go upstairs and check for loose connectors. If that doesn't work unplug and replug the USB from the camera box on the scope, and unplug and replug the USB on the computer.
5. You have to have the Filter wheel on any other position than 1 (diagonal) to take an image. Start off with Clear.
6. There should be a box marked on the video screen. This is the area of the screen the CCD camera sees. Position the object you wish to photograph in the box.
7. Set your exposure time. Make sure the Light box is checked. Click expose.

8. If all is well you should see an image of your object on the screen. To adjust the brightness and contrast select the Screen Stretch Window under the View Menu.
9. It may be out of focus. Using the FOCUS PADDLE in 606 to focus, focus in one direction a whole digit on the focus paddle. You can adjust the speed of the focus on the paddle.
10. Take an image. If the image is worse, focus the other way. Continue imaging and focusing till focus is achieved.
11. Once you are in focus you can Zero the readout.

Shut Down

1. Have someone go to the roof and slew the scope so that the tube is on the West side of the pier and facing South. Make sure that the finder scope doesn't hit the wall.
2. Turn off Master Switch on power supply. It is the bottom Red switch.
3. Turn off scope mount.
4. Put Lens Caps on scope and finder.
5. Put plastic sheet over scope.
6. Close the dome. Reverse the opening procedure.
7. Close the SKY program.
8. In camera window, disconnect camera.
9. Close Maxim DL
10. Log off the computer.
11. Turn off lights and close door.