

## Opening Procedure for BCC Observatory Dome 24" Telescope

- (1) Sign in with the ticket booth receptionist and obtain the key to the roof doors.
- (2) Open the doors to the main stairway, 24" telescope dome observatory, fire exit, equipment room, 12" telescope dome observatory, and elevator roof lobby. Prop open the doors that require it and latch the observatory door in the locked position. Return key to the ticket booth receptionist.
- (3) Turn on red floor lights in observatory, and turn off and remove the dew light which should be hanging from the operator end of the telescope.
- (4) Power on both PC's and monitors by pressing the power switches.



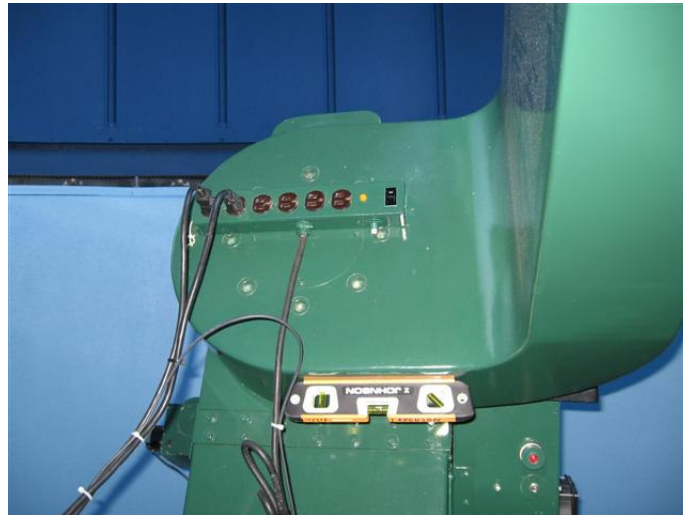
**Figure 1:** The observatory dome computers. The DOS PC is on the left and the Windows PC is on the right.

- (5) When the DOS PC displays the prompt to turn on the motors, turn on the motor power supply strip located on the south side of the telescope base. Verify that the switch below the red light on the opposite side of the scope base is also in the on position ("up" position). See Figures 2 and 3.



**Figure 2:** The rear of the 24" telescope. Note the location of the motor power supply and the right ascension clutch. The cart carrying the TV and DVD player is located behind the telescope on the left. The two ladders on the right are used to assist visitors in viewing through the eyepiece.

- (6) Turn on the power supply strip for the fan, video camera, and Telrad. This is mounted to the north side of the base. See Figure 3.



**Figure 3:** The upper part of the 24" telescope base. Note the fan/Telrad power supply and the right ascension bubble level. The switch below the red light on the lower right also controls the tracking motor.

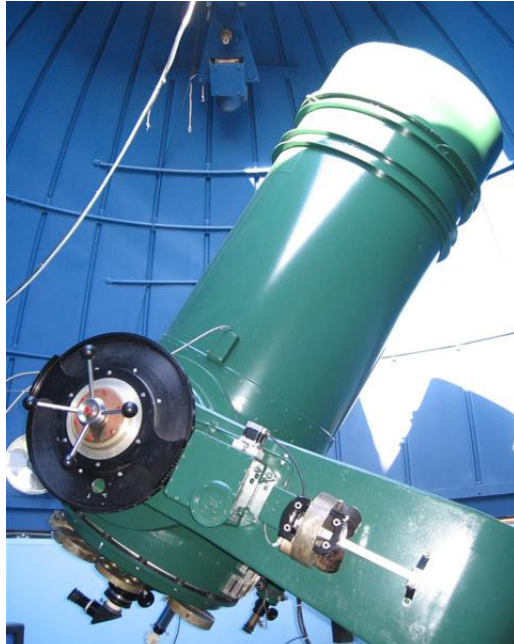
- (7) On the DOS PC, press any key to continue the boot process. When it boots, use the arrow keys to select Motors and press Enter. You will hear the motor turn on.
- (8) On the Windows PC, double-click on "The Sky Telescope Link" desktop shortcut to start The Sky software.
- (9) On The Sky menu, select Telescope -> Link -> Establish. This links the Windows PC to the 24" telescope.



**Figure 4:** Close-up view of the 24" telescope. Note the handling bar in the upper left used for maneuvering the telescope when the clutch is not engaged.

- (10) Loosen the right ascension clutch located on the south side of the scope base and gently maneuver the scope over to a position to remove the dust covers from the 24", 6", and 3" scopes. Use the long metal bar attached to the side of the 24" telescope to move it into position. After

removing the dust covers, return the scope back to the original position and lock the right ascension clutch.



**Figure 5: Side view of the 24" telescope. Note the declination clutch on the side of the base and the balance weights on the operator end of the telescope.**

- (11) Open the dome shutter using the pushbutton switch on the shutter control panel located behind the computer desk (see Figure 6). After the upper door opens, crank open the lower door. About 100 turns of the crank are required.



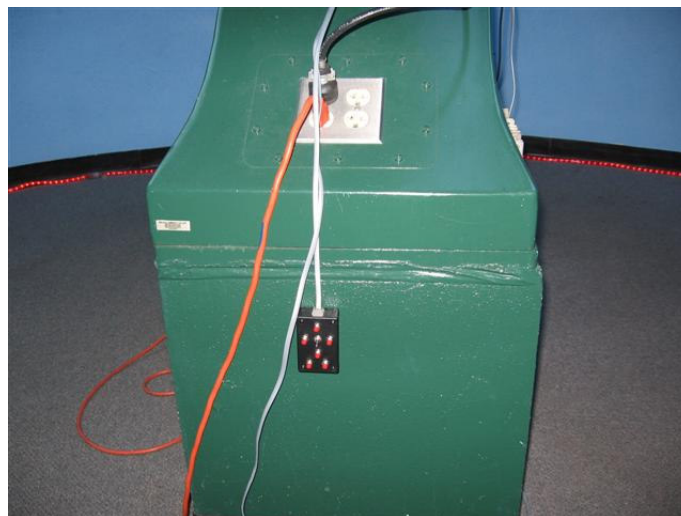
**Figure 6: Dome shutter control panel with pushbutton switches to open and close the shutter.**

- (12) Rotate the dome shutter into the desired position using the motor switch on the west side of the dome area. This is located beneath the dome shutter ladder. See Figure 7.



**Figure 7: Dome motor control switch and ladder. Note the west dome motor in upper right of photo.**

- (13) Align the telescope using a bright star such as Sirius. If necessary, loosen the declination clutch located on the side of the telescope to position the scope near the star. Then use the handheld controller and the Telrad finder to position the star in the center of the main eyepiece. See Figure 8.



**Figure 8: Handheld controller used to align the telescope. The center switch selects the speed at which the telescope moves and the red pushbutton switches select the direction.**

- (14) Single-click on the star you are using to align the telescope on The Sky software on the Windows PC and select "Synch scope". The telescope is now synchronized and ready for use.
- (15) To move the telescope to another object, click on the object on The Sky software screen and select "Slew to". Verify that there are no objects such as ladders or people near the telescope while it is moving.

- (16) The eyepieces and light pollution filter for the 24" telescope are stored in the top left drawer of the computer desk.
- (17) If it is daylight or cloudy, play the DVD of previously recorded observations of Saturn, Jupiter, Mars, and the Moon.

### **Interesting Information about the 24" Telescope**

- (1) The 24" primary mirror weighs 135 lbs and is 4" thick at the edges. The secondary mirror is 8" in diameter.
- (2) This telescope cost several hundred thousand dollars when it was purchased. It is a popular variation of the Cassegraine reflector design known as Ritchey-Chrétien, which use two hyperboloidal mirrors. This design is also used in the Hubble space telescope, which has a primary mirror diameter of 8 ft and the secondary mirror diameter of 1 ft.
- (3) Hundreds of thousands of people have looked through this 24" scope since it was installed.
- (4) This 24" telescope is the largest telescope open for public viewing in the state of Florida.