

SWANSON TELESCOPE

Dome Doors Operation Manual



MdM
Spring 2011

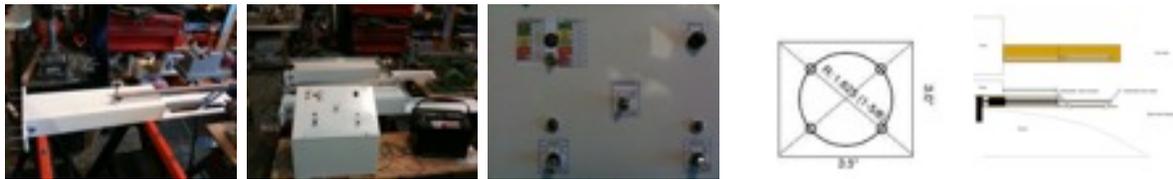
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Forewords and Cautions

The Swanson observatory dome doors are currently operated by two linear actuators mounted outside the dome and powered by a solar panel/battery system. The whole complex (Doors and Actuators) weight in excess of several hundreds pounds and the actuators can exercise 1000 lbs. force each. Extreme caution should be exercise to avoid severe injuries and damages to the equipment.

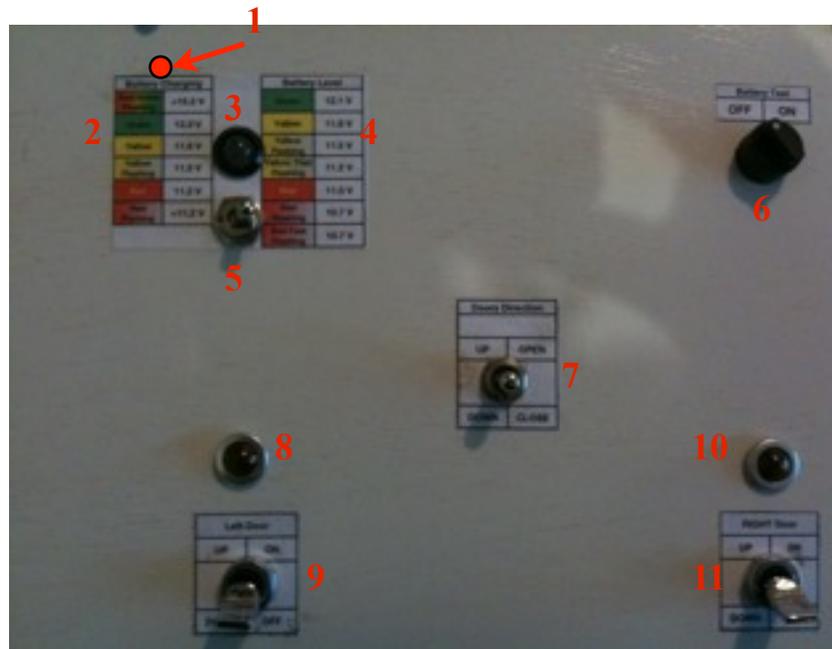


Images Courtesy of VBAS

It is assumed that the user of these instructions is familiar with the Swanson Telescope and has received the Basic and Advanced training for operating the scope.

Doors Operating Panel

Operation of the doors is achieved by the controls on the operating panel located at the bottom of the dome doors opening. Picture 1 illustrates all the features on the control panel.



Picture 1: Doors Control Panel

1. Solar Panel Operation Led. This led indicates the solar panel is properly connected and operational.
2. Battery Charging Table. This Table provides the color code for the light (3) when the switch (5) is toggled toward Battery Charge Table.
3. Battery Charge/ Battery Level Light. This light indicates different voltage level of the battery depending upon the status of the switch (5). For normal operations, with the switch (5) toggled toward Battery Level Table, the light should be green, indicating a fully charged battery
4. Battery Level Table. This table provides the color code for the light (3) when the switch (5) is toggled toward Battery Level Table.
5. Battery Light Indicator switch. It toggles the color code of the Battery Light Indicator depending upon the reading required. For normal operations (at night!) the switch is toggled toward the Battery Level Table and the light indicates the charging level of the battery (green = fully charged battery). During daytime operations the switch can be

toggled toward the Battery Charging Table to check the level of the voltage from the solar panel.

6. Battery Light ON/OFF Switch. To avoid draining the battery, the Battery Light Indicator is normally turned off. Before operation of the doors, Turn this switch on the On position, check that the Battery Light Switch (5) is toggled toward Battery Level Table. The light (3) should be green. Turn the switch in the off position.
7. Doors Operation Switch. This is the switch that actually operates the doors. UP, Opens the doors, DOWN closes the doors.
8. Left Door Operation Light. This light turns on if the Left Door Actuator receive power from the operation of switch (7).
9. Left Door Operation Switch. This switch allows to disable the operation of the left door. UP is on , Down is OFF
10. Right Door Operation Light. This light turns on if the Right Door Actuator receive power from the operation of switch (7).
11. Right Door Operation Switch. This switch allows to disable the operation of the Right door. UP is on , Down is OFF
12. Not shown in figure is the Voltage Regulator Box located on the right side of the control panel. This box prevents overcharging and extreme discharge of the battery and also act as insulator against lightning events.

Door Operations

To Open the Doors

1. Turn switch (6) on the ON position.
2. Check that the Battery Light Switch (5) is toggled toward Battery Level Table.
3. Observe the Battery Light (3) is Green.
4. Turn switch (6) on the OFF position.
5. Check Switches (9) and (11) are on the ON position (UP).
6. Push switch (7) UP to OPEN the doors. Observe both lights (8) and (10) turning ON

To Close the Doors

1. Turn switch (6) on the ON position.
2. Check that the Battery Light Switch (5) is toggled toward Battery Level Table.
3. Observe the Battery Light (3) is Green.
4. Turn switch (6) on the OFF position.
5. Check Switches (9) and (11) are on the ON position (UP).
6. Push switch (7) DOWN to CLOSE the doors. Observe both lights (8) and (10) turning ON

Emergency

In case the Actuators would not operate, it is possible to disconnect them by removing the pin that connects the actuators with the swing arm and manually close the doors.