

Dry Creek View Observatory Construction Notes

The following photos and PDF file are associated with these notes. The photos are in order of appearance in the explanation and are at the end of the document. The 10x10 wood building plans and assembly instructions.PDF file is attached as a separate file.

Plastic Mounting Ring.jpg

Scope Mounted indicating height.jpg

Dome on Roof.jpg

Concrete Pier Leveling bolts.jpg

Concrete Pier.jpg

Scope looking out shutter.jpg

Warm Room Big Screen.jpg

10x10 wood building plans and assembly instructions.PDF

Explanation of the Construction.

The PDF file shows the construction of a 10x10 foot building. I used these plans for my 8' Explora-Dome. The plans are from Explora-Dome and worked perfectly for mounting my Dome. I did not make the wooden mounting ring shown in Figure 2 and 3 because the plastic mounting ring came with the dome. That ring is shown in diagram 1 and the attached picture "**Plastic Dome Ring**". This ring was mounted to the Dome Support Structure (also called Dome Roof Base Section) in Figure 4 and Diagram 4. My contractor mounded the ring using "Hurricane Clips" and 2 grabber screws to the Dome Support Structure. I made the complete 10x10 building and suspended it above the ground as shown in the photo "**Scope Mounted indicating height**". I raised the 10x10 foot room approximately 2 feet off the ground as shown so the "Warm Room" wall height matched the wall height of the 10x10 scope room. The Dome Roof Base Section and Plastic Dome Ring added approximately 15 inches above the wall height. Since I attached my "Warm Room" to the Scope Room, this extra height allows the dome to "Clear" the warm room roof when the dome is rotated. This is obvious in the picture "**Dome on Roof**", which shows the Dome in relation to the "Warm Room" roof. The cement pier column is 12 feet tall and 12" in diameter. It is 5 feet in the ground, 3 feet to the floor of the Scope Room and 4 feet above the floor giving the 12 feet. Three 3/8" imbedded leveling bolts were inserted in the concrete at the top of the pier during the concrete pour. This is to allow for leveling the scope mount adapter plate. The bolts are equal distant and the right-hand bolt is directly in line with true North. Picture "**Concrete Pier Leveling bolts**" shows the leveling bolts. Picture "**Concrete Pier**" shows the "Sonotube" for the pier and the cement floor of the warm room. The warm room is 10x12 and has 7-foot-high walls. A sliding 3x3 foot sliding window is placed next to the scope room door to allow for watching of the scope when it is moving.

Things I Learned:

If I were to build this again, I would purchase the larger Explora-Dome2 which is about 11.5 feet in diameter instead of 8 feet. The reason for this is the Shutter opening on Explora-Dome2 is 45" instead of the 8-foot dome shutter opening of approximately 28". I have a 14-inch scope and with my guide scope attached I am at the maximum of the shutter opening. This works, but it makes it difficult to automate the dome as sometimes the scope and guide scope combination width does not line up with an automated direction of the scope. Sometimes I need to rotate the dome so that the shutter opening allows for a clear line of site for the guide scope and the telescope. Therefore, I have not automated my dome. See picture "**Scope looking out shutter**" to get an idea of what I am describing. If you have a smaller diameter scope, this would not be a problem with the 28-inch opening and automation. However, with the larger scope, I would use the bigger dome with larger shutter opening.

The common wall between the Warm Room and the Scope Room can leak rain if “Flashing” is not properly installed. I would not use the Explora-Doom fiber glass roofing on the common wall. The roofing material needed to be cut to allow for the common wall interface. Even though I had proper flashing installed, the rain still leaked into the Scope Room. I would use plywood roofing with standard shingles if I were to do it again on the Scope Room. I did not insulate the floor or the walls of the Scope Room. I did on the Warm Room. I wanted the scope room to be ambient temperature. I have found that the insulation is not an issue as long as the scope room is not heated or cooled. The floor gets cold in the winter. Make sure the warm room has an air conditioner and a heater. It is nice in the summertime to have a cool room to work in and in the winter, it is nice to have a warm room. I put “three-way” light switches in the Warm Room and Scope Room. The switches control “Red” lights and “White” lights in either room from either location. Make sure to have a 1-inch conduit running from the Warm Room to the base of the pier in the Scope Room. I also have a ¾ inch conduit up the side of the pier to allow for AC Power to the scope. I also have power outlets on all 4 walls of the Scope Room and Warm Room. I put an extra outlet higher up on my Warm Room wall to allow for power to a 32 inch monitor and not have the wires showing. You also need a path for running an HDMI cable to the upper 32-inch monitor. I have this monitor and two 21-inch monitors (3 monitors) connected to my computer. I use the larger monitor to show visitors pictures when visiting the observatory. See Picture “**Warm Room Big Screen**”.

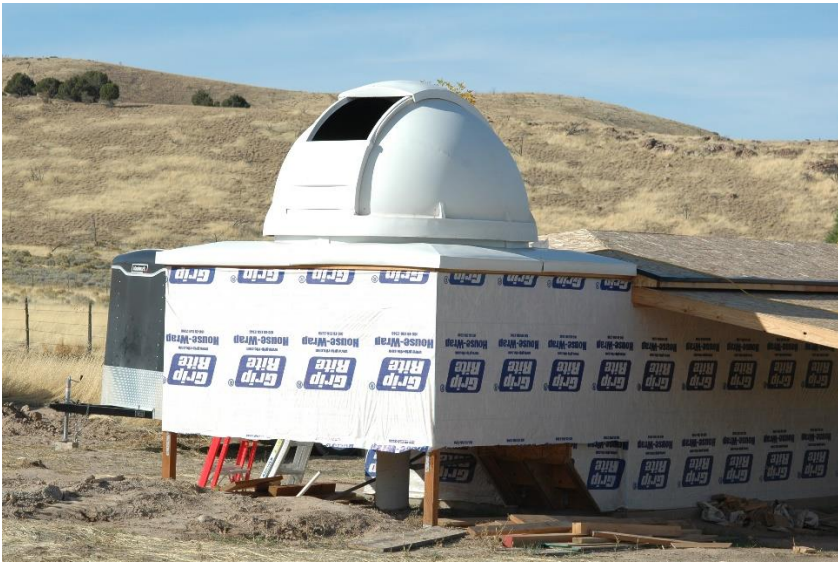
I hope this helps and If you have further questions do not hesitate to ask. Please show your friends my web page. I like to interest people to the world of Astronomy and Astrophotography.



Plastic Mounting Ring.jpg



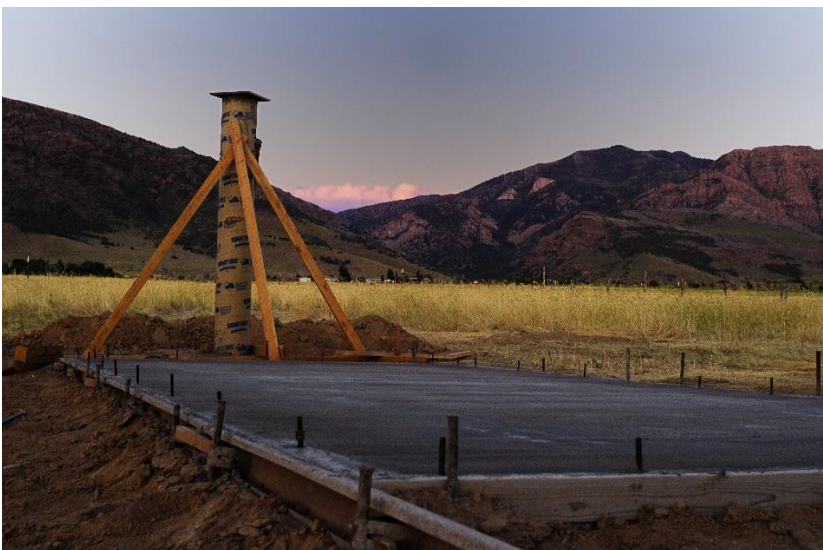
Scope Mounted indicating height.jpg



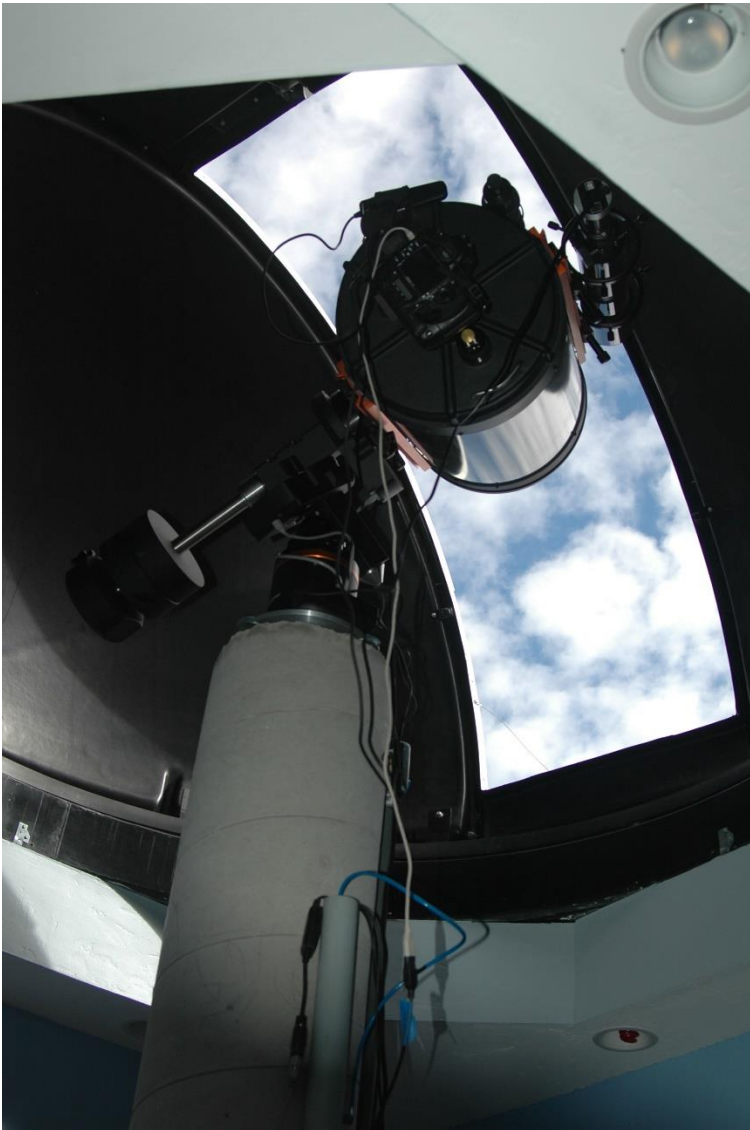
Dome on Roof.jpg



Concrete Pier Leveling bolts.jpg



Concrete Pier.jpg



Scope looking out shutter.jpg



Warm Room Big Screen.jpg