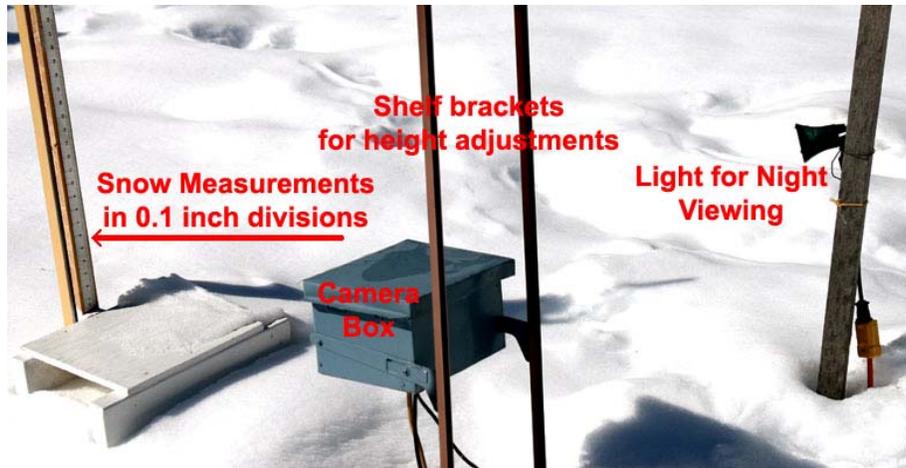


Camera to Show Snowfall Depth



Select an open area away from obstacles when setting up an area to measure snow. This should also be a level area where you wouldn't expect windy conditions. I use a separate snowboard to take the readings for my station observations that is located in a different place in the yard. The methods for measuring snow will not be covered here as it is included on a different portion of my site at the following web address:

<http://www.glenallenweather.com/links/digest/snowfalls.htm>

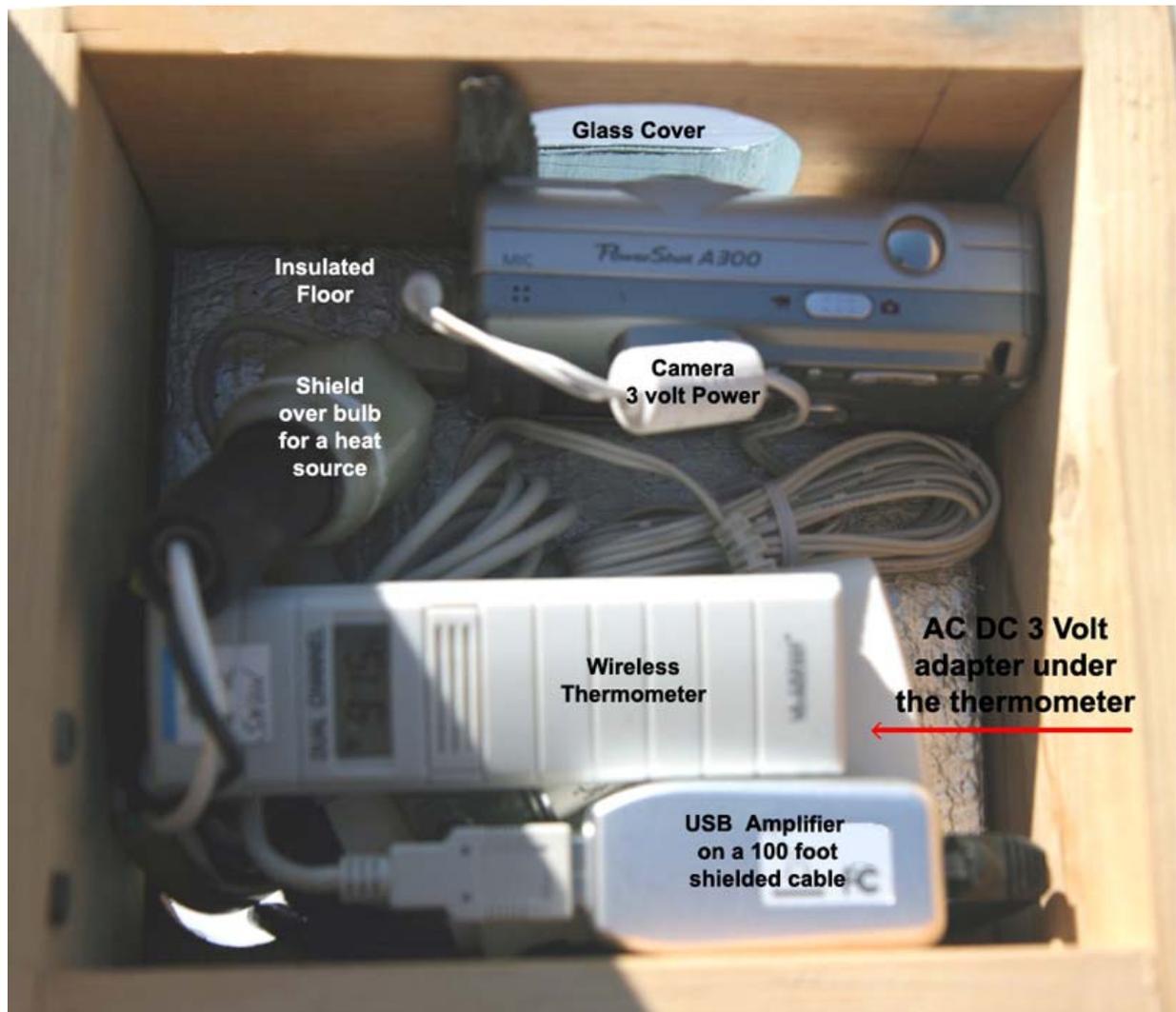
In the picture above you see a 30 watt floodlight used to illuminate the snowboard at night. It is important not to get too strong of a floodlight or put it too close to the snowboard as it may melt the snow if the temperature is near freezing and will also be more costly because of the wattage. Note the camera box is mounted on bookcase brackets so it may be raised as the snow depth increases. The bookcase brackets are approximately half an inch in diameter and inserted in three-quarter inch PVC pipe as it makes a tight fit and they may be slipped in or out of the holes even if the ground is frozen.

Snowboard with Measuring Stick in 0.1 Inch Divisions



The snowboard should be painted white so that during the day it receives a smaller quantity of solar energy thus preventing melting. The measuring stick mounted to the snowboard should be divided into tenths of an inch. You should have more than one snowboard so that if an earlier snow has not yet melted before a new snowstorm impacts your area.

Camera Protection Box



The camera box is made of three-quarter inch wood which is a good insulator but in areas that are very cold you might want to use a thicker wood to add to insulation. I've also added a thin layer of foam insulation in the bottom of the box to help cover the hole where the wires enter the box. It is very important that you get a shielded universal bus extender cord if you're placing the camera more than 15 feet from the computer. I am using two seven watt night lights as heat sources in this box. It is good to have two in case one of the bulbs burn out. Even with small 7 watt bulbs it is necessary to put some kind of nonflammable shielding around the bulbs to keep them from melting cords or the Styrofoam insulation on the floor.

It is good to have a thermometer so you know the temperature in the box and you don't get the camera too warm or let it get too cold. Most cameras will operate between 32 °F and 105°F. I used a La Cross Technology wireless thermometer TX25U to keep track of the temperature. I discovered that the AC/DC power adapter that came with the camera was not sufficient amperage and was causing a camera to fail so I replaced it with a RadioShack universal digital camera power adapter number 273 -- 1696 which has worked very well. I used a Canon Power Shot 300 camera as it could be bought for a reasonable price on the Internet yet had a high enough megapixel to give a sharp image. You need to buy a Canon camera unless you're going to write your own software for remote shooting. You also need to devote one computer or web camera as it needs to run a lot of software for this operation. The computer needs to run Canon remote sensing software. The ImageSalsa- Weather Edition software with the weather module accesses the weather information from another computer on the network and places it on the image that the camera takes. This software also saves the image in a folder called a sequential save, a fixed save and a FTP push to the image to the server. ImageSalsa is a great piece of software as it even controls when images will be saved in the sequential file and when images will be uploaded to the server. Then you need still another piece of software called MovieSalsa which takes the daytime images that are stored in the sequential file and converts them into a movie after dark. Then you need an FTP program like cute FTP scheduled to upload the movie to the server in the correct file during the night so the movie will be ready for viewing the next morning.