AST195 PROJECT

REPLICATING THE VIEW THROUGH GALILEO'S TELESCOPE

This is a pretty simple project with a historical theme.

Everyone knows about Galileo being one of the first people to use a telescope to study the heavens. But what were Galileo's telescopes like? In this project you will find out.

For this project you will need your **large** and **small aperture masks** that you made in a previous project, and your **clipboard**.

The large aperture mask will cause the performance of your telescope to be similar to one of Galileo's better telescopes. The small aperture mask will cause the performance of your telescope to be similar to one of Galileo's lesser telescopes. Note, Galileo did not have high magnification eyepieces for his telescopes. Use low magnification (20x - 50x) only in this project.

1. Make a paper sign with your name on it in large, dark letters. Also write "AST 195" on it in small dark letters. Include some decoration if you wish! Set up the sign a long distance away (far enough so that it looks small and so that there is no way you can read it with your eyes), and use your telescope to observe it at low magnification (20x - 50x), first with no aperture mask, then with the large aperture mask, and then with the small aperture mask.

   Take notes on what changes you saw when you put on the aperture masks. Note what you saw when looking yourself; do not make notes on what any camera shows. You will take photos, but because the camera may compensate for changes, or not catch the changes well, you need to record in your notes what you saw when looking in the telescope yourself.

   Take photos of the view through the eyepiece in each case (no mask, small mask, large mask).

2. Use your telescope to observe the moon (any phase is fine except for full or nearly full) at low magnification (20x - 50x) first with no aperture mask, then with the large aperture mask, and then with the small aperture mask.

   Again take notes on what changes you saw when you put on the aperture masks. Note what you saw when looking yourself; do not make notes on what any camera shows. You will take photos, but because the camera may compensate for changes, or not catch the changes well, you need to record in your notes what you saw when looking in the telescope yourself.

   Take photos of the view through the eyepiece in each case (no mask, small mask, large mask).

Answer the following questions in short typed paragraphs:

A) What changes did you observe when you used the aperture masks on your sign?

B) What changes did you observe when you used the aperture masks on the moon?

C) The aperture masks give you an idea of what Galileo saw with his telescopes. Discuss overall how your telescope compares to Galileo's.

Turn in your photos (there should be six -- make sure each photo is identified) and your answers to A, B, and C. Make sure your name is on your work.