

AST195 PROJECT (Meade 70)

SOME OBSERVING EQUIPMENT

This is a very simple, very easy, but very important project for doing night-time observations.

If you want to observe anything other than the moon, you need your eyes to become and stay *adapted to the dark*. The human eye adapts to the dark in two ways -- it opens the pupil wider, and it produces chemicals that enhance light sensitivity. The pupil widens quickly, but the chemicals take a while (as much as half an hour) to make, and are destroyed by light. If you use a flashlight to take notes or make drawings, you will hurt your dark adaptation every time you turn the light on, and it will be hard to see much through the telescope.

However, the dark adaptation of your eye is not destroyed by **red** light. So, to take notes in the dark without ruining your vision, you need something to make notes on (a clipboard), and a **red** flashlight. All the cool astronomers have a red flashlight and a clipboard, you know!

So, your assignment is first to get a red light and clipboard, and turn them in to the professor for inspection. The light must be **sturdy** -- you don't want the red part falling off in the dark. A common means of making a sturdy red flashlight is to take an ordinary flashlight and paint the lens with red (not pink) nail polish or with a deep red Sharpie or other permanent marker. However, there are plenty of other methods as well.

You also need some help in finding things in the dark. So the next thing to do is to get some equipment for your *phone*. I recommend downloading a star-finder app for your phone, such as Google Sky (freely available but perhaps not the best -- the really fancy ones have "augmented reality" in which the app shows the sky as seen by the camera on your phone, and then adds identifying information to it). Some are free; those that are not free are generally inexpensive. Choose one that works on your phone and your budget. You can also declare that you are going to be "old school" and just use the finder charts that I provide. That is OK, but here is one place where a little tech is a nice thing.

And one final item regarding observing equipment: All students in my AST 195 classes have the same telescope, which raises the possibility of students

getting their equipment mixed up with that belonging to someone else. I encourage you to label *all* your equipment. However, it is a requirement of this project for you to indelibly label the *two largest* pieces of equipment -- the telescope tube and the tripod. For example, use a pointed metal object to scratch your initials into the tube and into the tripod at the locations shown in the photos below and on the next page (I used a paper clip to do this). No, this will do no harm to the scope. Mark your tube and tripod, and turn in photos of these to your professor.

Show your sturdy (not flimsy), red (not pink, not brown, not orange) light and clipboard to the professor for approval, along with your finder app and your photos, and get an easy 100% on this project. Turn in the attached sheet for credit.



TUBE -- mark your initials just to the right of the Meade logo, as shown.



TRIPOD -- mark your initials on the main support, as shown.

Observing Equipment

Name: _____

Instructor initials:

____ Red light

____ Clipboard

____ Star finder app

Which app? _____
(if opting for the “old school” method, write “old school”)

____ Tube & Tripod indelibly labelled with initials

Project completed (instructor' s signature): _____

Do not turn this in without first getting the instructor' s initials and signature.