

Astronomy 350: Lab 1

- 0. If the following call for observing, either with the naked eye or with a telescope, give the date and time of the observations (separate observations must be with a different date/time), the "conditions" (eg. how cloudy it is, "the seeing" etc).
- 1. Make sure you are familiar with alt/az, ra/dec.
- 2. Make sure you are familiar with basic aspects of a reflecting telescope including the different types.
- 3. Make sure you know the terms on p. 7 of the Ferguson book and what they mean.
- 4. Make sure you know how to set up the 3 different types of telescopes.
- 5. Make sure you know how to set up the camera and attach it to one of the telescopes.
- 6. Do the lab on pages 7-11 of the Ferguson book.
- 7. The Star Map says the Moon is at perigee at 4h UT (Universal Time - Conversion at EDT given on skymap). Can you see it in the sky? Write a paragraph or two describing why we see phases of the Moon.
- 8. Use the given star map to try and find Jupiter in the sky. Draw a picture including any features you can see on the disk of the planet (if you use the scope). If its clear take a look through the telescopes and draw a picture/describe what you see. Can you see any moons. How is the sky: clear or cloudy? Observe Jupiter at the beginning and end of a one hour period – make drawings, has it "moved?" How can you tell?
- 9. If its clear can you observe the Andromeda Galaxy (M31)?
- 10. Observe delta Cep. This is a type of variable star called a Cepheid. Research this using google and describe what these stars are "used for."
- 11. Find and observe epsilon Lyrae - which star is it close to? Draw a picture of what you see. Epsilon Lyrae is a "double double." Epsilon 1 and epsilon 2. Research these stars and write a short paragraph or two about them.
- 12. Observe the summer triangle (see star chart). How do the brightnesses and color of the 3 stars of the summer triangle compare?

- 13. Make sure you know 5 constellations and 5 stars in the fall sky in Oswego and 5 constellations in August/September in the Southern hemisphere. For example, you should know how to find the Polaris, what's the summer triangle.
- 14. Write about 1 page explaining why firstly the positions of stars changes during the night, secondly why the positions of stars seen at 9pm at Oswego changes during the course of a year and thirdly why the positions of stars changes with position on Earth.
- 15. Find out some constellations that can be seen from a latitude of 70° at about this time (9pm, late August).
- 16. Find out from the web where Mars and Venus are in the sky in August/September. Can they be observed during class time?
- 17. Extra-Credit: Prepare a presentation on the Starry Night program (in windows) or the K-stars program (in Linux).