Topics for this week

To order-of-magnitude accuracy, know the relative sizes of Earth, Sun, Solar System, Milky Way Galaxy, Universe Understand the meaning of scientific notation and how to add, subtract, multiply, and divide numbers in scientific notation Know how rotation of the Earth makes the stars appear to move across the sky during a night Reading for this week Ch. 1 and Appendix A Reading for next week

Ch. 2 and Ch. 3

Scale model of the Universe

Sun: capitol dome, 100 ft. diameter Earth: 1 ft. diameter Astronomical Unit: 10,000 ft. = 2 mi. Jupiter: 10 ft. diameter 5 A.U. (10 mi.) from Sun α Cen: 280,000 (2.8 x 10⁵) AU = 1.33 parsecs from Sun 2-3 times farther than the Moon when scaled Andromeda galaxy: 800,000 pc = 8x10⁵ pc away most distant known galaxy: 3,000,000,000 pc = 3x10⁹ pc

Definitions

Solar System: The Sun, Earth, planets, and moons size: about 100 AU or 15 billion km
Milky Way Galaxy: A group of about 100 billion stars including the Sun that orbit around their center size: about 50,000 pc or 10 billion AU
Observable Universe: Everything that we can see size: about 3 billion pc

Star: an object like the Sun; a ball of glowing gas Planet: an object like the Earth or Jupiter a solid or gaseous ball orbiting a star typically 10-100 times smaller than a star

The Moon and planets this semester

- New moon is toward the end of each month this semester, so the Moon is up in the evening for the first half of each month. We will watch the Moon to see how its position in the sky changes as it goes through its phases.
- The first two weeks of the semester will be a great time to see several of the planets.
- Venus is low in the west after sunset, and Mercury and Mars are close to it for the next two weeks.
- Find a place where you have a clear view of the western horizon and look for them about ½ hour after sunset.
- Then turn to the southeast. Jupiter is the brightest object in that part of the sky.





East

SE

South

Assignments for Friday

Read Chapter 1 and Appendix A (p. 477, the words, not the tables).

Make a list of topics you want to learn about in this course. Hand it in on Friday.

Find a place where you can see the western horizon and start looking for Venus, Mercury, and Mars.