

CH 6

Review Questions 1-3, 7, 10 (DUE 1/29)

1. Why would you not plot sound waves in the electromagnetic spectrum?
2. If you had limited funds to build a large telescope, which type would you choose, a refractor or a reflector? Why?
3. Why do nocturnal animals usually have large pupils in their eyes? How is that related to the way astronomical telescopes work? (Two questions.)
7. Why do single-dish radio telescopes have poor resolving power relative to optical telescopes?
10. What purpose do the colors in a representational-color image or map serve?

Problems 1-2, 7-8 (DUE 1/29)

1. The thickness of the plastic in plastic bags is about 0.001 mm. How many wavelengths of red light is that?
2. What is the wavelength of radio waves transmitted by a radio station with a frequency of 100 million cycles per second?
7. How does the resolving power of the Mount Palomar 5-m telescope compare with that of the 2.4-m *Hubble Space Telescope* (mathematically)? Why does *HST* generally still outperform the ground-based 5-m telescope? (Two problems.)
8. If you build a telescope with a focal length of 1.3 m, what focal length does the eyepiece need to give a magnification of 100 times?