1. What is the smallest angle (in arcseconds) that could theoretically be resolved by the 10-m Keck telescope at a wavelength of 500 nm?

2. How big would a radio telescope observing at 20 cm wavelength have to be in order to resolve the same angle as the Keck telescope in the last problem?

3. The Sun orbits the center of the Galaxy at a speed of 220 km/s, 8500 pc from the center. What is the mass of the Galaxy enclosed by the Sun’s orbit?

4. The rotation curve for the Sa galaxy NGC 4378 is shown in Figure 26-28 in your book. Using the data from that graph, calculate the orbital period of stars 20 kpc from the galaxy’s center. What is the mass of the galaxy out to 20 kpc from its center?

5. What types of galaxies are most likely to have new stars forming? List observational evidence to support your answer.

6. Freedman & Kaufmann Chap. 26, Problem 28, pg. 605

7. Freedman & Kaufmann Chap. 26, Problem 29, pg. 605

8. Freedman & Kaufmann Chap. 26, Problem 30, pg. 605

Please attach extra sheets of paper with your answers as necessary...