1. Reading
   a) Take the time now to read any section in Chapters 1 and 2 of Sparke & Gallagher that you didn’t have time to read before.
   b) In your favorite classical mechanics textbook, review Newtonian gravity, including the two-body problem and Keplerian orbits.
   c) Read very carefully S&G Section 3.1 on Motion under gravity.

2. Problems
   Do S&G problems 3.2, 3.3, 3.4, 3.5, 3.6, 3.9, 3.11, 3.12.
   Note the typos in this section! In particular, the answer in the last part of Prob. 3.11 should be that the distance between stars increases by \((1 - f)/(1 - 2f)\).

3. Web Browsing
   The Astronomy Picture of the Day is a remarkable web site that will teach you something new about astronomy every time you visit it at http://antwrp.gsfc.nasa.gov/apod/astropix.html.
   From the archives, here are a few pictures relevant to this week’s topics:
   http://antwrp.gsfc.nasa.gov/apod/ap950710.html (gravitational lensing by a cluster of galaxies)
   http://antwrp.gsfc.nasa.gov/apod/ap020416.html (globular cluster ω Cen)
   http://antwrp.gsfc.nasa.gov/apod/ap990707.html (globular cluster M80)
   a) Would it be possible to observe gravitational microlensing by unseen objects (“dark matter”) in a globular cluster? Search the web to find out whether this has been attempted, and summarize what you found in a few sentences. Make sure to explain clearly what is the source and what is the lens in this case.
   b) Another important application of gravitational microlensing is the search for extrasolar planets. Again, find out from the web whether this has been attempted, and summarize the basic idea and current experimental status in a few sentences.