Outline of Course Material: Test 2 (Keyed to the Textbook)

Chapter 5  
**Astronomical Instrumentation**  
5-1 Telescopes: Read carefully and know all bold face terms. What are the advantages of a reflecting telescope vs. a refracting telescope? What is resolution and how does it depend on the aperture?  
5-2 Detectors and Instruments: Read for information.  
5-3 Optical and Infrared Observatories: The main thing here is the selection criteria for an observatory site and some idea of the size of modern telescopes.  
5-4 Radio Telescopes: Read carefully and know boldface terms. The class notes have more on the resolution problems of radio telescopes. How does resolution depend on the wavelength and aperture of the telescope? Why does interferometry help solve this problem?  
5-5 Observations Outside the Earth's Atmosphere: Read for information.

Chapter 6/13  
**Formation of the Solar System**  
6-1 Overview of Our Planetary System: Read the section called "The Inventory" carefully and know all boldface terms. Table 6.2 is worth studying for the mass and density patterns of the terrestrial vs. the giant planets.  
6-2 Composition and Structure of Planets: Read for more information about the terrestrial vs. the giant planets.  
6-3 Omit  
6-4 Origin of the Solar System: Read carefully and know the boldface and italicized terms.  
13-3 Formation of the Solar System: Read carefully and know boldface and italicized terms. Figures 13.9 and 13.10 are important. What is the connection between the chemical condensation sequence and the composition of the different planets in the solar system?

Chapter 14  
**The Sun: A Garden-Varity Star**  
14-1 Outer Layers of the Sun: Read carefully and know the boldface and italicized terms. Know the three layers of the Sun's atmosphere and their different properties. Figure 14.4 is important. Where does the solar wind originate on the Sun's surface? How is this connected with the magnetic field?  
14-2 The Active Sun Introduced: Read carefully and know the boldface and italicized terms.  
14-3 The Sunspot Cycle: Read carefully and know all the italicized terms. How are sunspots related to the magnetic field of the Sun?  
14-4 Activity Above the Photosphere: Read carefully and know the boldface and italicized terms.  
14-5 Is the Sun a Variable Star: Read carefully and know the boldface and italicized terms. What is the Maunder Minimum?

Chapter 15  
**The Sun: A Nuclear Powerhouse**  
15-1 Read carefully and know the boldface terms. What are Watts?  
15-2 Read carefully and know the boldface terms. The number of protons and neutrons in H and He nuclei should be known. What is binding energy and how does the mass changes in a nuclear reaction release energy? What is Einstein's formula relating mass and energy?  
15-3 Read for in formation about structure of sun.  
15-4 Omit
Chapter 16  Analyzing Starlight
   16-1 Read carefully and know the boldface terms. What is the difference between absolute and apparent magnitude? What do larger numbers for the magnitude indicate about the brightness?
   16-2 Read carefully and know the boldface terms. What is color index? What does it tell you about temperature?
   16-3 Read carefully and know the boldface terms. Omit discussion of radial motion and proper motion for now. Know the 7 spectral classes. See notes for more detailed information. How do giant stars differ from Main Sequence stars?

Chapter 17  The Stars: A Celestial Census
   17-1 Read for information. Know definition of the luminosity function.
   17-2 Read for information. The main points to study are the mass distribution of stars and the Mass-Luminosity relationship. More information is in the class notes.
   17-3 Read for information.
   17-4 Read carefully and know all boldface and italicized terms. This is a very important section. What does the position of a star on the H-R diagram tell you about its temperature and radius? More information is in the lecture notes than the book.

Chapter 18  Celestial Distances
   18-1 Read for information. Main point is the definition of light year.
   18-2 Read for information. We will go over this in more detail later. The main point is the size of a parsec.
   18-3 Omit for now.
   18-4 More on H-R diagrams. Read carefully and know luminosity classes.

- Test 2 - Friday, February 12