ASTR 10, Vista College, Spring 2004 - Instructor: Dr. Korpela

HW #3 for Chapters 6, 7, and 8 -- Due March 11, 2004

Explain ALL answers.

1.

Determining Properties of Stars

(20 points) In each of the following cases, **explain** whether we can determine the stated property of a star simply by analyzing its spectrum. If so, how?

a) temperature
b) radial velocity
c) radius
d) mass

2.

(Blackbody Radiation (20 points)

Use the Figure below to answer the following questions. Wavelength increases towards the right. **Explain your answers!**
[IMAGE]

a) Which light curve has a lower surface temperature (A, C, or same temp) How can you tell?
b) Which light curve has greater energy output (A, C, or same) and why?

3.

Spectral Lines (20 points)

What two pieces of information can be gained from observing spectral lines in a star? Are there any other means of getting this information?

4.

Formation of the Solar System (20 points)

How does the Solar Nebula theory of planetary formation explain the planets orbiting in the same plane and the same direction. If you found a solar system with planets orbiting in random directions, would the nebular theory be a good explanation for how it formed? Can you think of any theory that would explain random orbits?

5.

Planetary surfaces (20 points)

What processes shape the appearance of the surfaces of the terrestrial planets? Name at least two properties of the Earth that make its surface significantly different from those of the other terrestrial planets.