

Assignment 10

Remember to number your answers 1a, 1b., etc. so I know which questions you're answering. Be sure to show your work and reasoning for full credit.

1. (10 points) Name and give an example of five different forms of energy.
2. (8 points) Briefly describe two theories that were offered for the source heat of the Sun, and explain the accepted theory for the source of the heat of the Sun.
3. (7 points) Define the atomic binding energy. Why is it a negative number? What atom has the highest (most negative) binding energy?
4. (9 points) Name and define the three celestial units of distance in increasing length, and give an example of a distance for which each unit would be appropriate.
5. (12 points) Suppose a star were observed at both ends of Earth's orbit to have moved an angle of .05 arcsec. How far away is it?

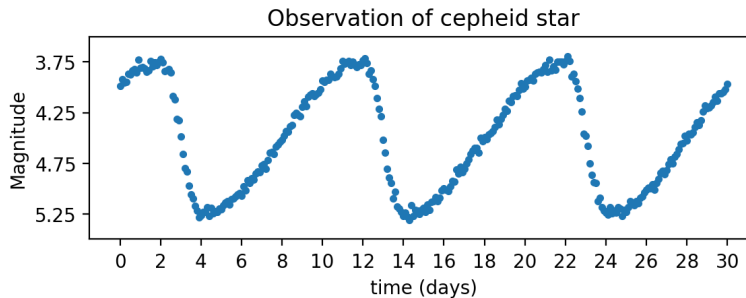


Figure 1: Light curve of a cepheid star.

6. (9 points) You calculate and plot the magnitudes of a cepheid over a month to obtain Figure 1,
 - (a) (4 points) Find the average, maximum, and minimum magnitude, along with the period.
 - (b) (5 points) By what factor does the brightness increase between the minimum and maximum brightness?