Assignment 9

Please type your responses into a word document, and submit that on UNM Learn. Show your work for all questions. You can take scans/pictures of your work if you put them in the word document, but don't submit them as images. Be sure to number your responses 1, 2(a), etc. so I know which question you're answering. If you get stuck, post a question on the forums. Chances are you're not the only one!

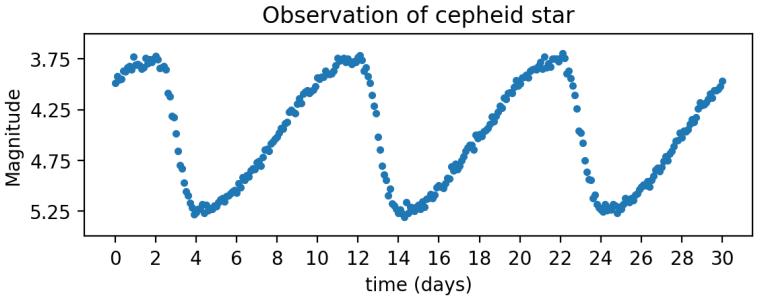

Figure 1: Light curve of a cepheid star.

1. *(20 points) You observe and plot the magnitudes of a cepheid over a month to obtain Figure 1,*

   (a) *(5 points) Find the average, maximum, and minimum magnitude, along with the period.*

   (b) *(15 points) By what factor does the brightness increase between the minimum and maximum brightness?*

2. *(18 points) Name and briefly describe the three types of binary stars, what information can be found from each, and the method through which this information is found.*

3. *(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.*

4. *(12 points) Suppose a star were observed at both ends of Earth's orbit to have moved an angle of .05 arcsec (parallax of .025 arcsec). How far away is it?*

5. *(10 points) A star is observed through a telescope behind a filter. Through a UV-filter, it measures a magnitude of 20. Through a blue filter, 25, and through a yellow filter, 18 (all in arbitrary units). What is the star's B-V color index?*