

# Astronomy 201/211 Lab Exercise

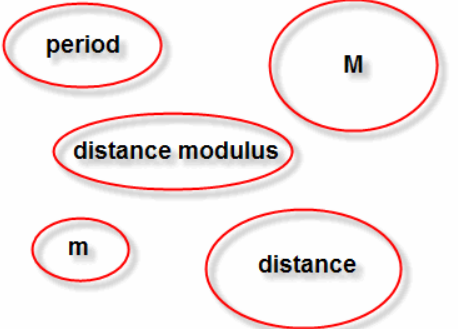
## Cepheid Variables

Purpose:

- To use the period-luminosity relation for Cepheid Variable stars
- To show how the PL relation can be used to find stellar distance

Estimated Completion Time: 45 minutes

### Concept Map

<p>1. Draw a concept map that explains how the ideas circled in the diagram on the right can be related to one another. Each line that you draw connecting one circle to another should be numbered "1", "2" etc and have a brief description explaining how the ideas relate to each other.</p>	
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### Periods of Cepheid Variable Stars

2. Look-it-up: Define the term "period" as it applies to a Cepheid variable star. You may either consult your text or use an on-line source.
3. On page 2 are light curves for 4 Cepheid variables. A light curve is just a graph that shows how the brightness of a star changes over time. Measure the period for each to the stars and record the periods (in days) in the following chart:

Star Name	Period (d)	Absolute Mag. M	Apparent Mag m	Distance Modulus	Distance (pcs)
HV 837					
HV 1967					
HV 843					
HV 2063					

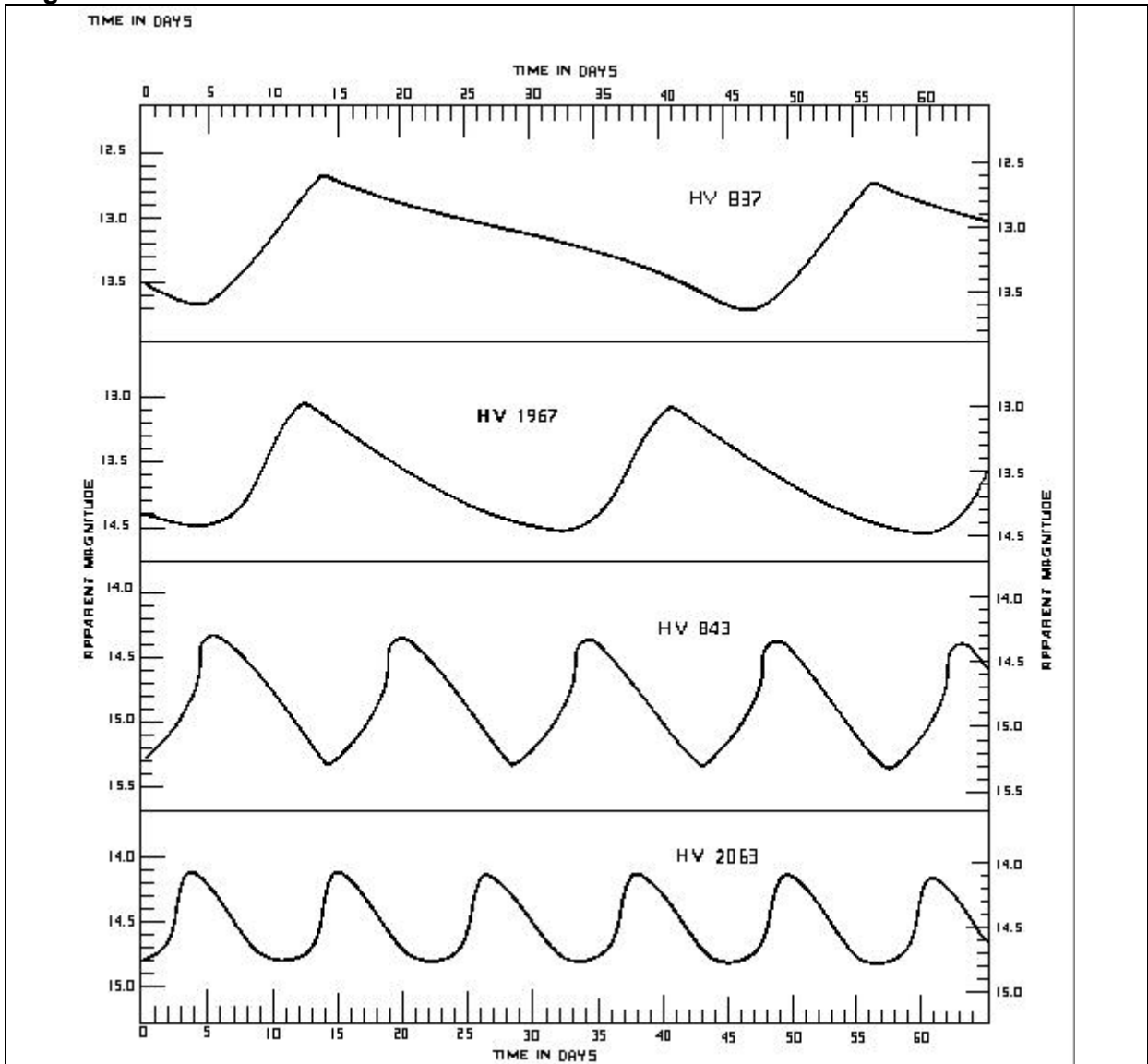
**NOTE: explain how you determined the apparent magnitude for each star.**

### Using the Period-Luminosity Relation

4. Consult the graph shown on page 3 to determine the absolute magnitude for each of the 4 Cepheids. Use what you learned in the previous lab exercise to complete the rest of this chart.

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## Light Curves:



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Cepheid Period-Luminosity Relation

