ASTRO 1020 Lab

L3: Binary Stars

Grading

- All labs are scaled to be graded out of **10 points***

Points per question	Description
1.0	A correct answer with units and work shown. Answers that don't require work will be graded on completion
0.8	A correct answer without units or work shown
0.6	An incorrect answer with units and work shown
0.4	An incorrect answer without units or work shown
0.2	Some work shown without an answer
0.0	Not Attempted

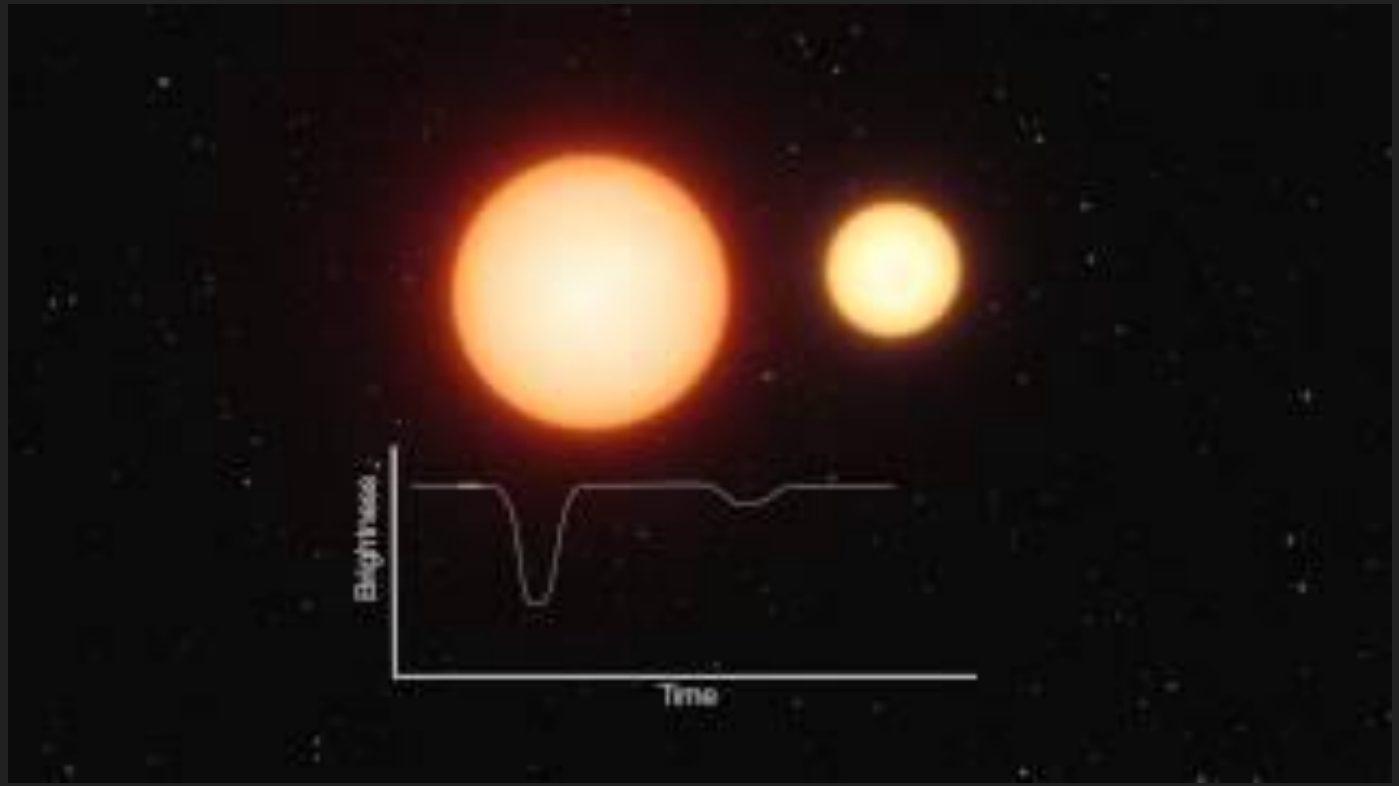
Lab Schedule

Lab	Dates	Topic
~~LAB 1~~	~~Sept 9 – 13~~	~~Sun~~
~~LAB 2~~	~~Sept 16 – 20~~	~~Spectra~~
LAB 3	Sept 23 – 27	Binary Stars
LAB 4	Sept 30 – Oct 4	Period-Luminosity
LAB 5	Oct 7 – 11	Hubble's Law
LAB 6	Oct 14 – 18	Galaxy Classification
LAB 7	Oct 21 – 25	Tully-Fisher Relation
LAB 8	Oct 28 – Nov 1	Star Clusters & Supernovae
LAB 9	Nov 4 – 8	Black Holes
Semester Project	Nov 18 – 22	

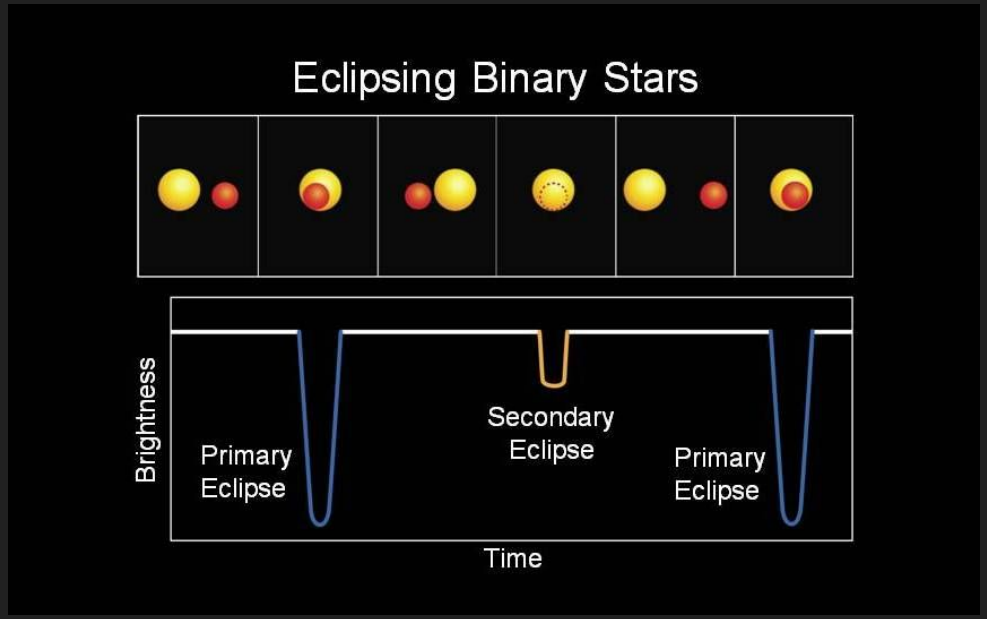
Things you need to know for Lab 3

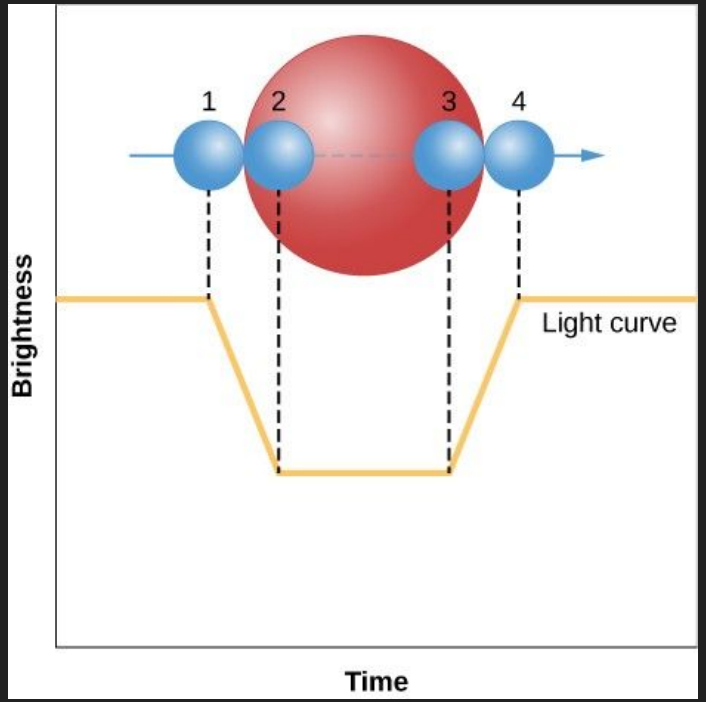
- Eclipsing binary stars
- Eclipse contacts
- Reading light curves
- Reading radial velocity curves
- Relative and absolute radii & masses
- Solving systems of equations

Eclipsing Binary Stars

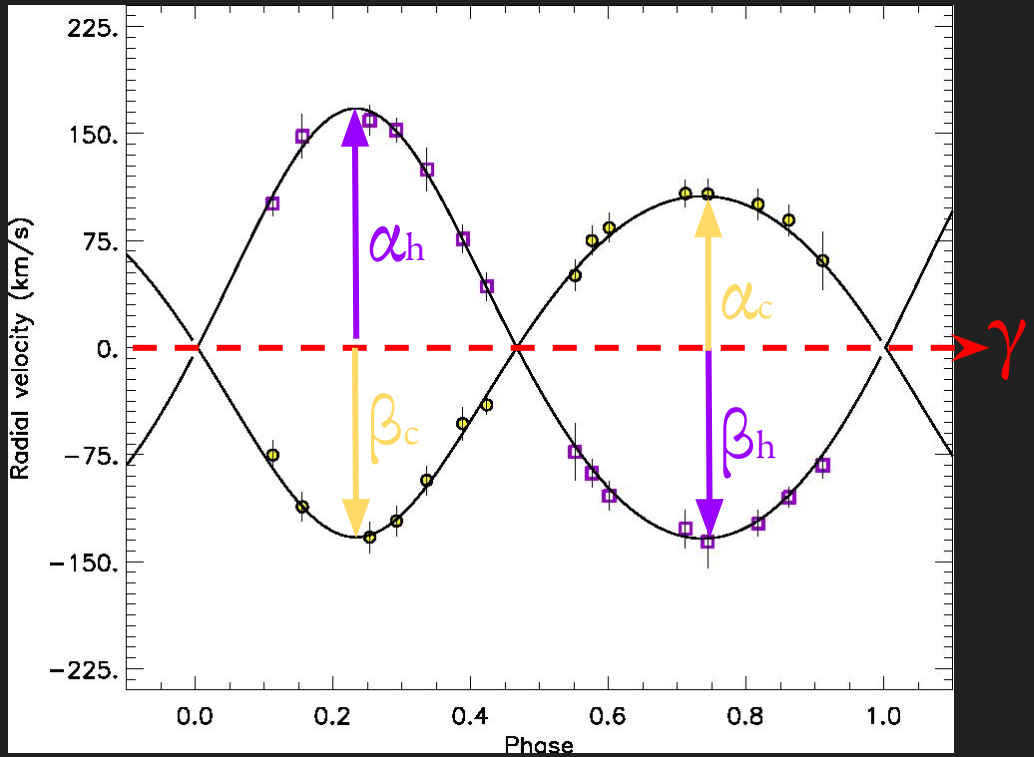


Eclipse Contacts & Light Curves





Reading radial velocity curves



Relative and Absolute Radii & Masses

$$Mass\ Ratio = \frac{M_h}{M_c} = \frac{\alpha_c + \beta_c}{\alpha_h + \beta_h}$$

$$M_h + M_c = \frac{a^3}{(P/365.25)^2}$$

Solving systems of equations

$$A+B=5 \qquad A/B=4$$

$$\Rightarrow A=4B \Rightarrow 4B+B=5 \Rightarrow B=1$$

$$A=4,\ B=1$$

Questions?