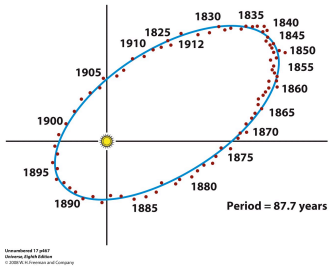
Card Activity: Homework, due Sep. 27

Today we talked about three types of binary stars:
1. visual – where you see the stars move back and forth
2. eclipsing – where the combined brightness shows "dips" when one star moves in front of the other, and
3. spectroscopic binaries – where the spectral lines shift back and forth in wavelength due to the Doppler effect

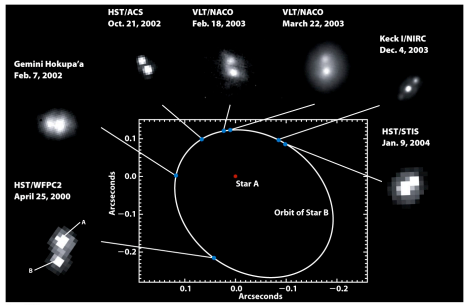
(a) What causes a particular binary star system to fall into one of these categories?
(b) Can a given binary star belong to more than one of these categories? Explain.

(**Hint**: Recall the activity of last Thursday, Sep. 20.)

Visual or Astrometric Binaries

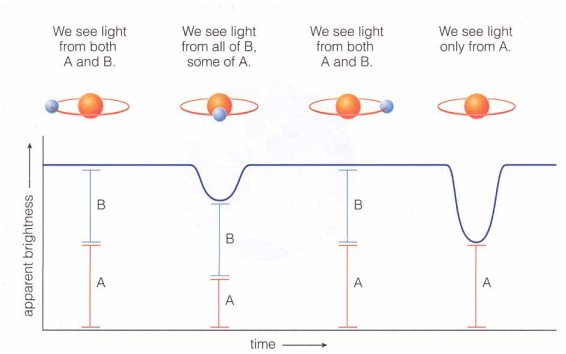


For a visual binary, you follow the positional changes of one or both stars over the orbit. Note: This can take a long time!



Eclipsing Binaries

- a binary whose orbital plane lies along our line of sight, thus causing "dips" in the light curve.



Spectroscopic Binaries

- Some binaries are not resolved as two images on the sky, but you see evidence of the orbit in their spectra
- "double-lined binary" - see two sets of spectral lines
- "single-lined binary" – see only one star's lines, infer the presence of the other star from the periodic Doppler shift