

13. Exploring Starlight (Part 2 - Light curves, binary stars, Cepheid variables and clusters)

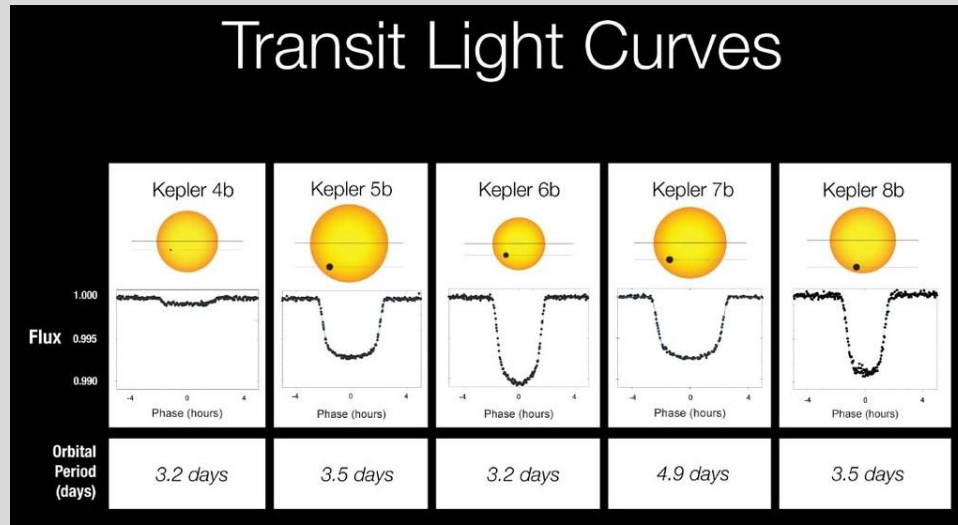
Edexcel GCSE Astronomy Course

13.14 Understand the light curves of the following variable stars: a short/long period b eclipsing binary c Cepheid d novae and supernovae

13.15 Understand the causes of variability in the light curve of eclipsing binary stars

This link explains each of the variable star light curves in turn - make notes of what they are and what causes their light curves to vary as they do;

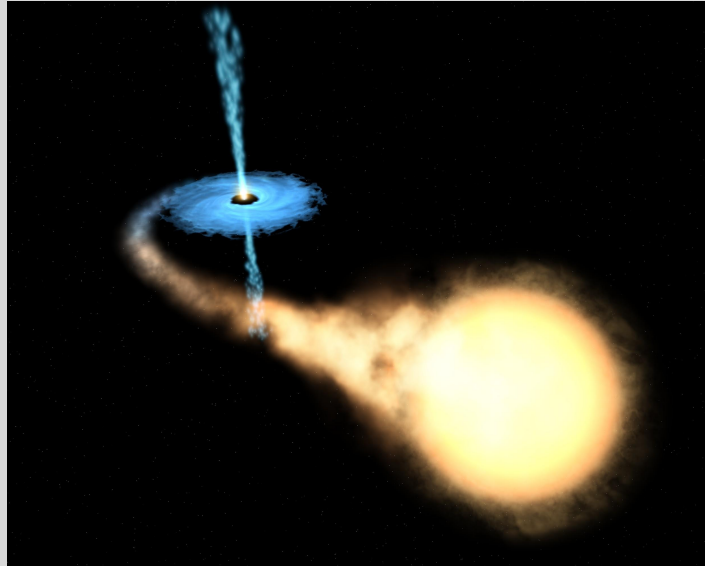
<https://www.space.fm/astronomy/starsgalaxies/lightcurves.html>



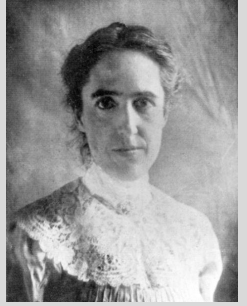
13.18 Understand how the period of an eclipsing binary star can be deduced from its light curve

Watch and listen to an X ray binary and plot your own light curve from real NASA data here - you will need some graph paper or a spreadsheet app:

<https://imagine.gsfc.nasa.gov/science/toolbox/timing1.html>



13.16 Understand how Cepheid variables can be used to determine distances



You can't discuss Cepheids without discussing Henrietta Swan Leavitt

<https://scientificwomen.net/women/leavitt-henrietta-55>

Variables in M33

https://www.astro.princeton.edu/~jhartman/M33_Movies_new.html

Animation of a Cepheid

https://www.youtube.com/watch?v=caYeTinG2GM&ab_channel=djxatlanta

Fab graphs and simple explanation

<https://starchild.gsfc.nasa.gov/docs/StarChild/questions/cepheids.html>

13.17 Understand the structure of gravitationally bound stellar groupings such as binary stars and clusters

Write a short definition of each of the five types of binary star described in detail here:

https://www.atnf.csiro.au/outreach/education/senior/astrophysics/binary_types.html

Make sure you know what a double star is - look for Mizar and Alcor in this example:

<https://earthsky.org/astronomy-essentials/double-stars-observing-guide/>

Find out about open and globular clusters here:

https://www.atnf.csiro.au/outreach/education/senior/astrophysics/stellarevolution_clusters.html