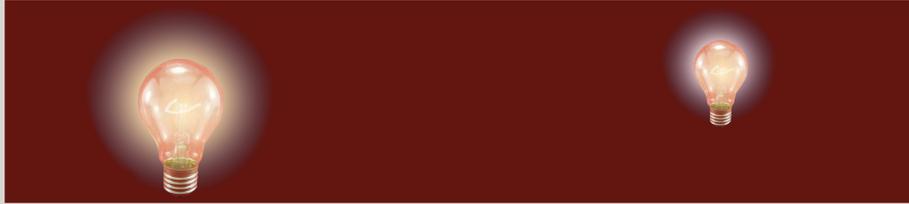


Stars are the building blocks of galaxies

Stars, from the youngest to the oldest, are one of the most important components of galaxies.

How do we find out their brightness?

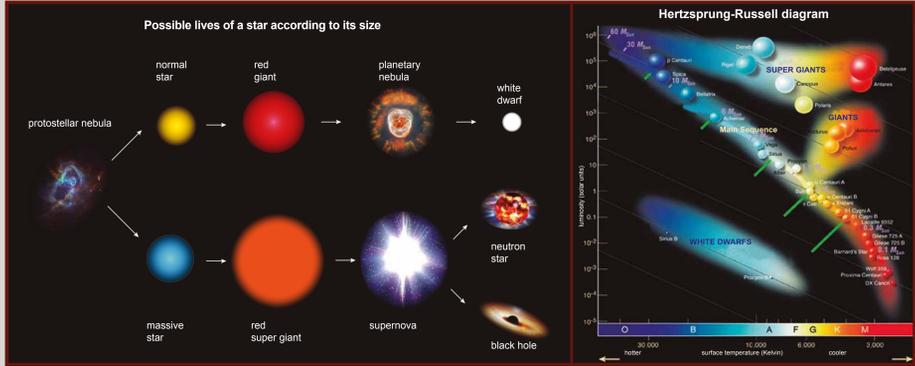
Knowing the distance to the star (from its parallax) and measuring their apparent brightness (the observed light intensity) we can infer the real brightness of the star.



A star closer than another but with the same intrinsic luminosity looks brighter.

Did you know that Gaia will provide the age, mass and chemical composition of 0.1% of the stars in our Milky Way?

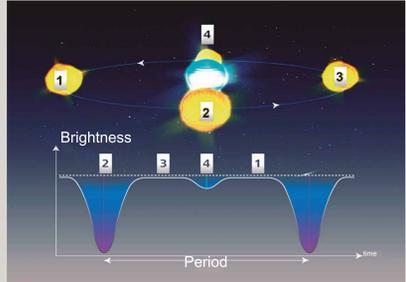
The evolution of stars



A Hertzsprung-Russell diagram relates the intrinsic brightness of stars to their spectral type which is connected to their temperature and colours. It can be seen as a family picture for stars. The position of a particular star in the diagram tells us about its age and its past and future evolution.

Binary stars

Gaia can 'weigh' stars which live in pairs. Gravity that keeps them together defines the orbit that we observe. If mutual eclipses occur, their durations help us to additionally deduce the size of the stars.



NASA, ESA, Hubble Space Telescope, (STScI/AURA), C. Bailly, (Le), W. Lewin (MIT), A. Sarajedini (Florida), and W. van Alena (Yale)

Globular cluster M13