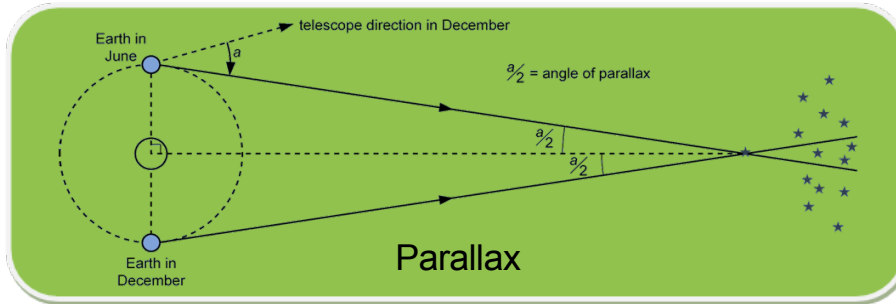
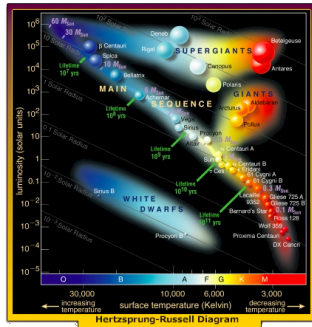


## How can we measure the distance of stars?

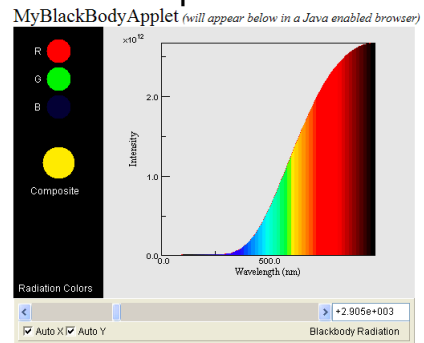


Limited to 300 parsecs

### Luminosity



### Temperature



Affected by atmospheric conditions

## Surely there must be another way?



## Goodricke and Leavitt

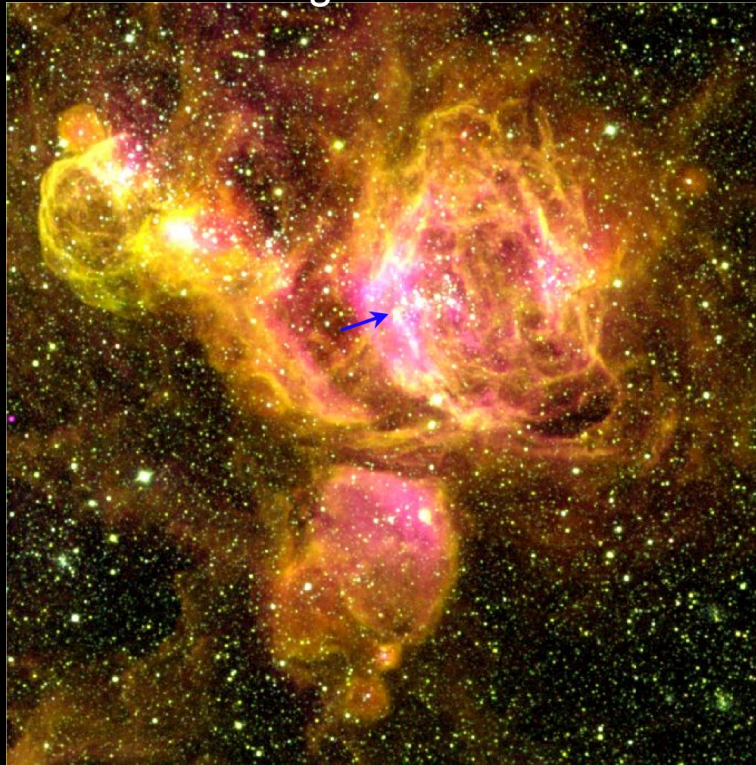


Click to play

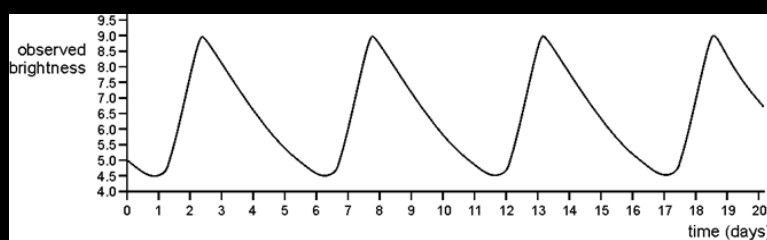
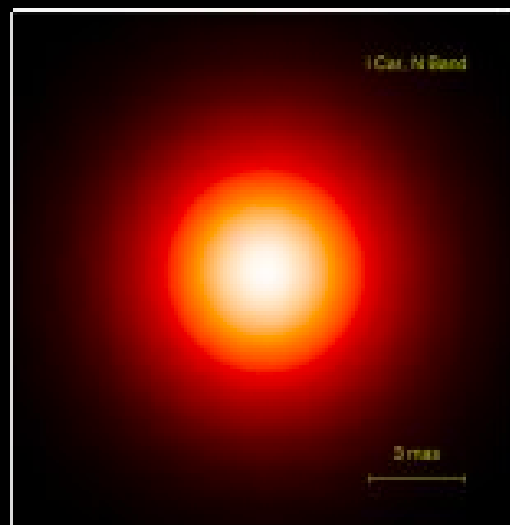
## The story of Henrietta Leavitt



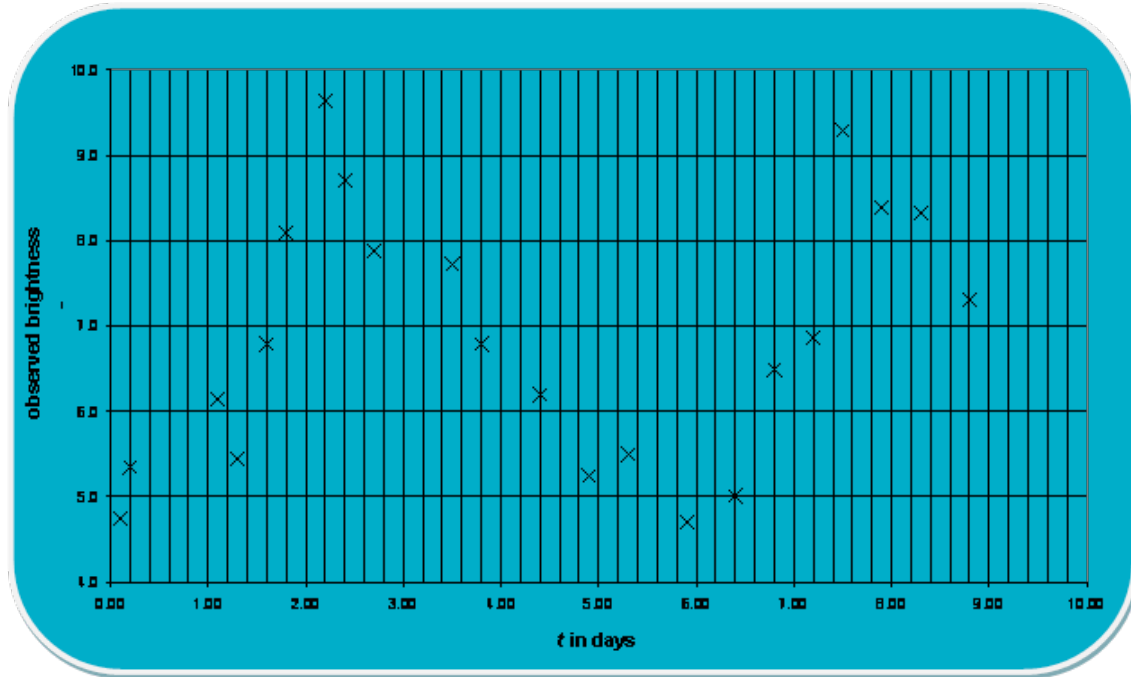
# The Magellanic Clouds



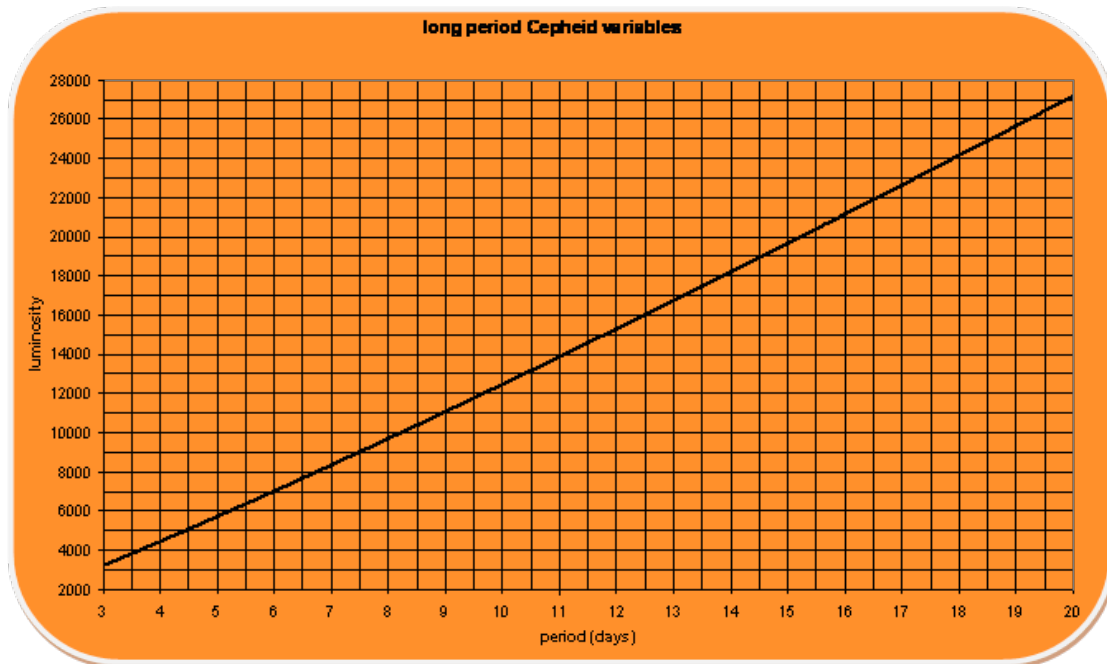
# Cepheid stars



Plot to the graph and find the cycle period



Find the luminosity of the star

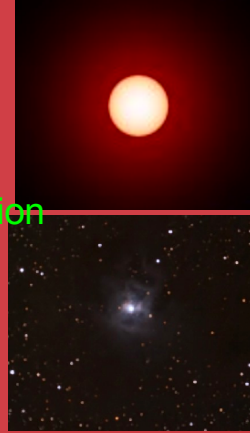


## Finding the distance of the star

What we know:

The true  
luminosity of the  
star

Measured by Blackbody radiation  
The observed  
brightness on the  
Earth



This equation was devised using a cepheid for which we knew the distances by parallax

$$\text{Star distance} = 10 \text{ parsecs} \times \sqrt{\frac{\text{luminosity}}{\text{observed brightness}}}$$