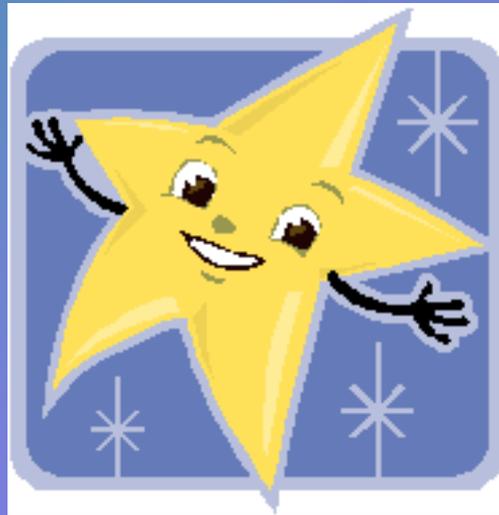


STARS



So, what is a Star?



A star is a really hot ball of gas, with hydrogen fusing into helium at its core. Fusion makes light and heat.

Are all stars the same?

No! they have many differences.....

1. Surface Temperature = color of star
2. Size
3. Magnitude = Brightness
4. Motion
5. Distance from earth
6. Composition= what elements the stars are made of

Surface Temperature & Color

A star's **SURFACE** temperature tells us what color it will be!

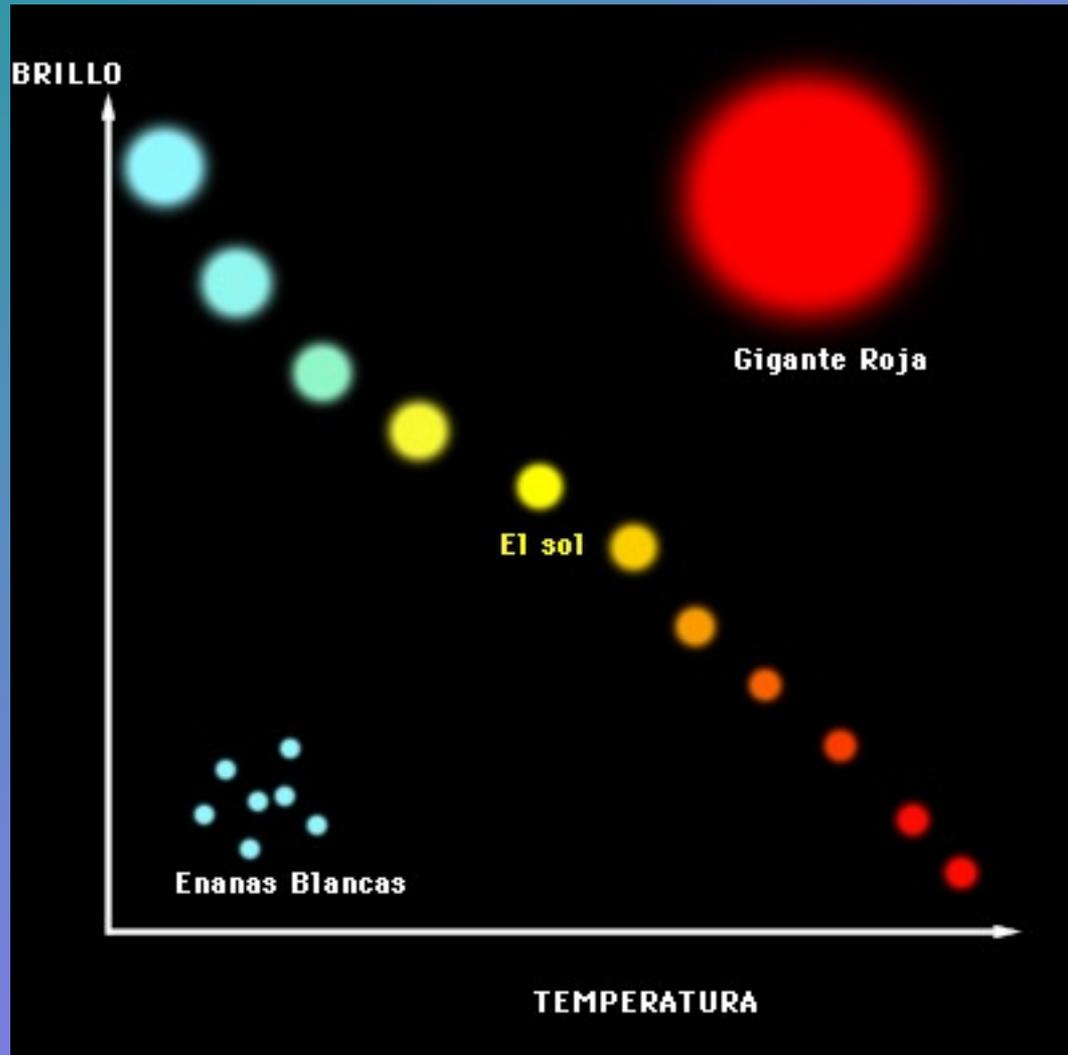
Red Stars - Avg. $3,000^{\circ}\text{C}$ ($5,400^{\circ}\text{F}$)- coolest temperature

Yellow Stars - Avg. $5,500^{\circ}\text{C}$ - intermediate temperature

White Stars - Avg. $10,000^{\circ}\text{C}$ - hot temperature

Blue Stars - Avg. $35,000^{\circ}\text{C}$ - hottest temperature

Size- stars can be all sizes!



Magnitude (brightness)

Apparent Magnitude = How bright a star appears from earth.

Positive #'s = dim star/planet (Pluto +15)

Negative #'s = bright star (Sun -26.8)

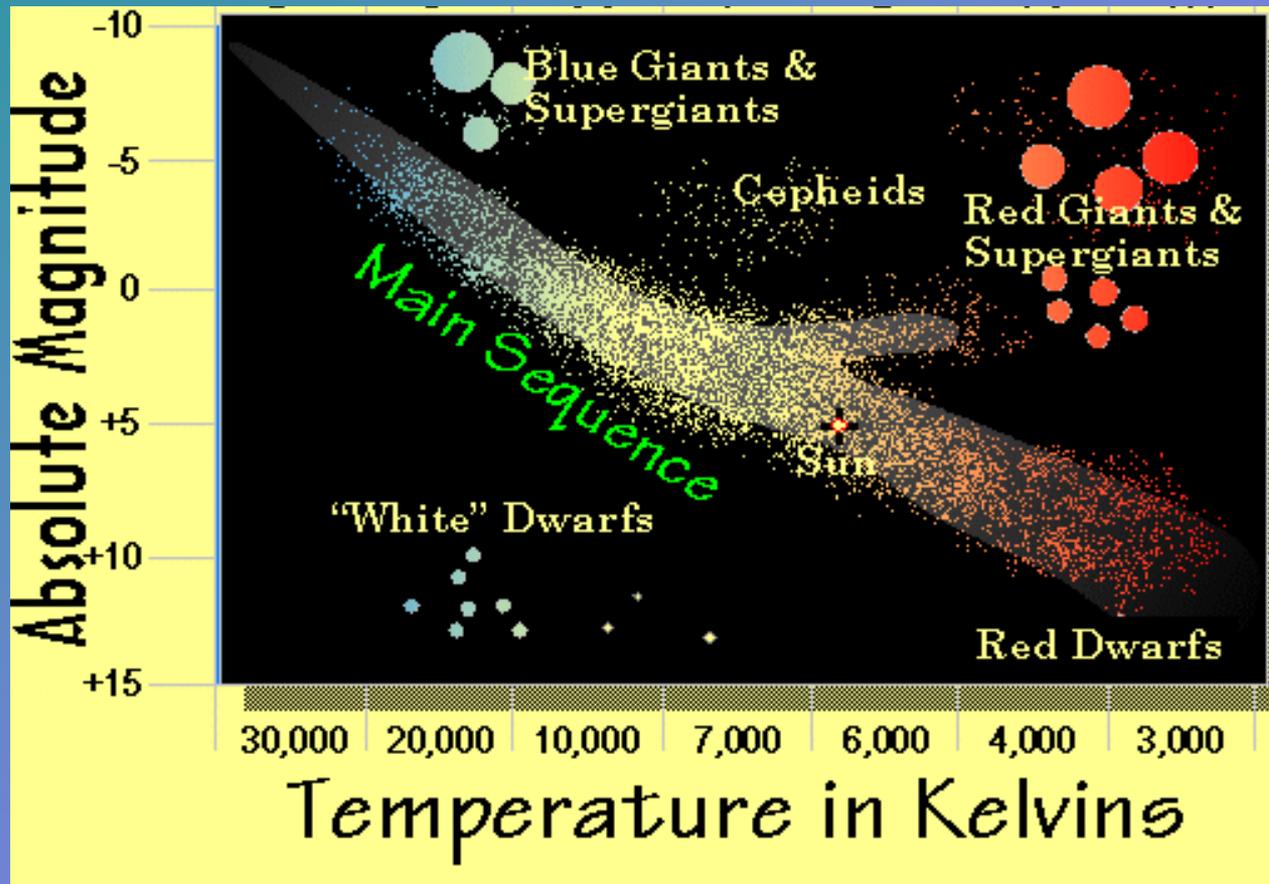
Absolute Magnitude = The true brightness of a star.□

This is figured out by moving all stars to a distance of 32.6 light years. When they are all at the same distance from earth then compare how bright they really are.

Example: The suns apparent magnitude is -26.5, but absolute magnitude is +5.

HR-Diagram

Plots a stars Temperature vs. Absolute Magnitude



Trends of the HR-Diagram

Main sequence stars: most stars are here, longest stage in a stars life.
Ranges from cool & dim to hot & bright. □

Giants, super giants: top right bright & cool.

White dwarf: end of a stars life, bottom left hot & dim.

