

STAR CLUSTERS

--one of the nice things about studying star clusters is that all of the stars in the cluster are formed at about the same time, and all are made up of the same interstellar stuff--this means the only difference between stars is their mass

--the most massive stars--the blue, supergiant, “O” type stars--will form first and will burn brightly and quickly for no longer than 10 million years before dying via supernova

--at around the 10 million year mark, the interstellar stuff making up with the medium sized stars will have finally collapsed to the point of igniting fusion, and these stars will have entered the main sequence phase of their life

--after 100 million years, most of the “M” type stars (stars like our sun) will have reached the *main sequence*

--as hotter, larger stars burn faster than cooler stars, the upper part of the main sequence begins to depopulate, populating the red giant and red supergiant stages, first

--after a billion years, “A” type stars will leave the main sequence--by this time, white dwarf will have begun appearing

--at 10 billion years, stars like our sun will leave the *main sequence*

--by observing the H-R diagram of star clusters and galaxies, we can determine how old those clusters are

--the oldest cluster we have observed have been around 12 billion years old