

Star Life Planetarium Project

Our goal is to learn from each other what each stage is really like and where some examples of each stage are in the sky. You will choose one stage to research in depth and be given several objects that represent that stage in a star's life. Your job is to create a presentation in planetarium that shows us where that object is located and explains that object scientifically.

Due Date – Presentations will be May 18th & 19-20th.

Group Presentation

1. Where are the examples of your type of object?
 - a. What constellations are they in?
 - b. Where in the constellation are they located?
2. Find the constellation and location of objects in the planetarium.
3. Find out what the objects look like.
4. Learn about the science involved with that stage of a star's life. Is it burning Hydrogen or Helium for fuel? Is it collapsing or expanding? What is an average size of a star at this stage?
5. Find out where on the HR diagram this type of object would be.
6. What are the current questions astronomers are trying to answer about this type of object?
7. Create a study guide for fellow students about your type of object. Include where on the HR diagram you would find it and the major ideas related to your type of object.

Plan your presentation.

- a. Where is it in the planetarium?
- b. How will you show images of the object? Slides? PowerPoint? Web pages?
- c. What science do you have to talk about?
- d. What kind of study guide can you come up with to help us understand the science?

Individual Activities – you are responsible to complete the following activities during your work days

1. HOU Supernova Classification – create a light curve to determine what kind of supernova exploded in 1994
2. Age of Star Clusters – determine the age of a star cluster using the HR diagram
3. Visit the *Build your own star* website. Make several stars, keep a record
4. Request MicroObservatory images of at least 4 galaxies – use your account to request images of spiral galaxies that you can open up in HOU. Save these to a folder in your school server space. We will need them in the next unit.

Use your Work Days wisely.

1. Group - Practice finding your objects in the planetarium
2. Group - Research your life cycle stage & create a presentation
3. Group - Create a study guide; make enough copies for all students. If you give them to Ms. Barge **before 5/12-13/09** she will make copies for your group.
4. Individual - Complete 4 Individual Activities. These must be done by 5/11/09

Resources

Books – check the crates at the front of the room. There are some very good references The Sky or Stellarium – use the computer program to help you find where your objects are located
Internet – there are many great sites, check class web site for a list of links
Textbook – chp 12 (star birth, energy in stars, main sequence); chp 13 (death of stars); chp 14 (black holes)

Examples of each stage

Type	Common name	Scientific name	Constellation
Nebulae / Protostars	Lagoon nebula	M8	Sagittarius
	Trifid nebula	M20	Sagittarius
	Cocoon nebula	IC 5146	Cygnus
	Orion nebula	M4	Orion
	Rosette nebula	NGC 2237	Monoceros
	Eagle nebula	M16	Serpens
	Omega nebula (swan)	M17	Sagittarius

Type	Common Name	Scientific name	Constellation
Main sequence star	Sirius A	Alpha CMa	Canis Major
	Rigel	Beta Ori	Orion
	Spica	Alpha vir	Virgo
	Fomalhaut	Alpha PsA	Piscis Austrinus (Southern)
	Proxima Centauri	Alpha Cen	Centaurus
	Bernard's star		Ophiuchus
	Altair	Alpha Aql	Aquila
	Procyon A	Alpha CMi	Canis Minor
	Kapteyn's Star		Pictor (Southern)
	Sun		

Type	Common Name	Scientific name	Constellation
Red Giant	Pollux	Beta Gem	Gemini
	Arcturus	Alpha Boo	Bootes
	Aldebaran	Alpha Tau	Taurus

Type	Common Name	Scientific name	Constellation
Super Red Giant	Betelgeuse	Alpha Ori	Orion
	Antares	Alpha Sco	Scorpius
	Alnitak	Zeta Ori	Orion

Type	Common Name	Scientific Name	Constellation
Planetary nebulae	Dumbell nebula	M27	Vulpecula
	Ring nebula	M57	Lyra
	Cat's eye nebula	NGC 5463	Draco
	Helix nebula	NGC 7293	Aquarius (Southern)
	Little dumbbell nebula (cork nebula)	M76	Perseus
	Owl nebula	M97	Ursa Major
	Eskimo nebula	NGC 2932	Gemini
	Ghost of Jupiter	NGC 3242	Hydra

Type	Common Name	Scientific Name	Constellation
White Drawf / Black Drawf	Siruis B		Canis Major
	Procyon B		Canis Minor
	Van Biesbroeck's star (black drawf)		Aquila

Type	Common Name	Scientific Name	Constellation
Supernova	Crab nebula	M1	Taurus
	Veil nebula	NGC 6992 / 95	Cygnus
	Witch head nebula	IC 2118	Eridanus (Southern)
	1987A		Tarantula Nebula in the Large Magellanic Cloud in Dorado (Southern)

Type	Common Name	Scientific Name	Constellation
Neutron star / Pulsars	Crab nebula	M1	Taurus
	CP 1919		Vulpecula
	PSR B1257+12		Virgo

Type	Common Name	Scientific Name	Constellation
Blackhole	Cygnus X-1		Cygnus
	NGC 6240		Ophiuchus
	NGC 4261		Virgo
	NGC 4151		Canes Venatici
	A0620-00		Monoceros
	V404 cygni		Cygnus
	Andromeda Galaxy	M31	Andromeda