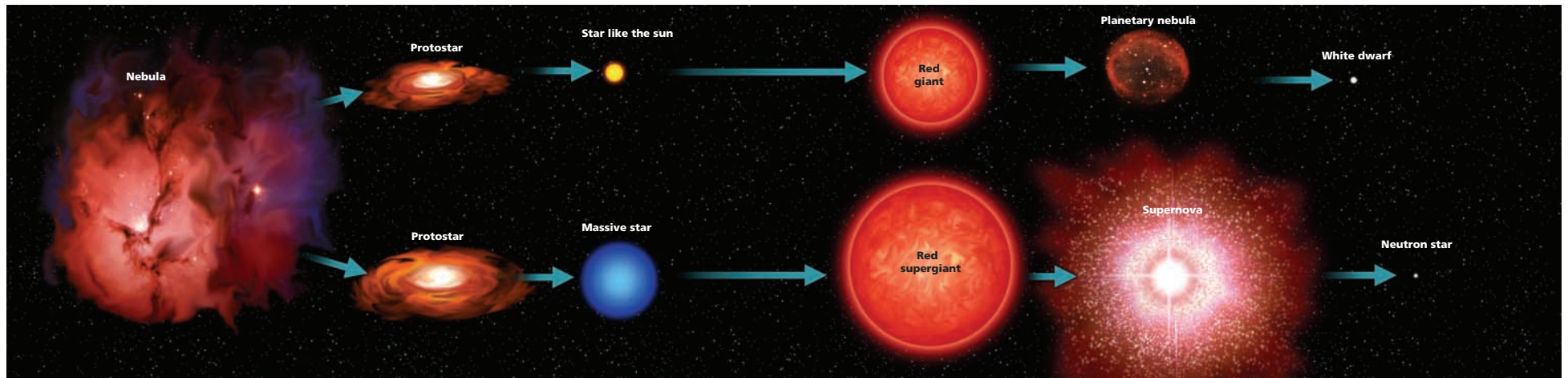


The Life Cycle of Stars



Transparency Worksheet

The Life Cycle of Stars

1. In what cosmic object does a star begin its life? What does this object consist of?

2. What force causes protostars to form?

3. How does a supernova form?

4. What is the last stage in the life cycle of a supernova or a very massive star?

- 30° north latitude and -15° west longitude
- The lines of longitude appear to be closer together at the right and left sides of the map because of distortion produced by projecting a curved surface onto a flat map.
- 0° to about -25° longitude
- at locations that have the color yellow

149 The Doppler Effect

- the apparent shift in the wavelength of light emitted by a light source moving toward or away from an observer
- longer
- It would appear extremely red-shifted, probably to the point of infrared, at which time it would no longer be visible to humans.
- On Earth, objects don't normally travel at speeds high enough for red- or blue-shifting to be observed.
- at the top, where an object is stationary in relation to Earth

150 Apparent Magnitude

- the brightness of a star as seen from Earth
- Venus
- Sirius
- + 30
- + 6

151 The Hertzsprung-Russell Diagram

- It describes the life cycle of stars.
- its temperature and luminosity
- The sun is cooler than most main-sequence stars, which are clustered to the left of the diagram, indicating the hottest stars.
- They are dim due to their small size.
- red supergiants

152 The Life Cycle of Stars

- a nebula, which is a cloud of gas and dust
- gravity
- It forms when a white dwarf in a binary system explodes with tremendous force.
- It becomes an extremely small, dense neutron star.

153 The Constellation of Orion

- patterns of stars and the region of space around the stars
- Because they are all extremely distant from Earth, we can't distinguish their actual distance.
- about 220 light years away from Earth
- about 1,200 light years

154 Timeline of the Big Bang

- one second
- It contained all the matter and energy in the universe.
- it expanded
- Scientists hypothesize that matter was clumped or clustered together because the force of gravity caused matter to form into galaxies and stars.
- 13.7 billion years old

155 The Milky Way

- 90,000 to 100,000 ly
- 15,000 to 20,000 ly
- The Perseus and Cignus arms branch off from the Norma arm.
- They spread out and become less dense than the center. Single arms tend to branch into multiple arms.
- The clusters on the map are not close to the point of view of the observer but are above or below the plane of galaxy disc. This distant perspective and the fact that the globular clusters are much smaller than the Milky Way account for why they appear to be small on the map.