Discussion questions

Q1: Why are astronomers interested in studying the 30 Doradus region?

Answer: Astronomers are interested in studying the 30 Doradus region because it is a rich star-forming region in the Large Magellanic Cloud, a small, satellite galaxy of our Milky Way. Also, they can see individual stars which allows astronomers to study the evolution of these stars.

Q2: Identify at least three historical events that happened here on Earth since Hubble’s launch in 1990.

Answer: Your answer will depend on which historical events you choose. Your answer may include events such as the outcome of the current political race, the demise of the Soviet Union, the discovery of the oldest human remains, or the introduction of the World Wide Web.

Q3: What country would you like to travel to in order to see this nebula, and why?

Answer: Your answer will depend on which Southern Hemisphere country you choose. There are countries in Africa and South America from which you could view the nebula through a telescope. Australia, New Zealand, Papua New Guinea, and parts of Indonesia also make good viewing sites for observation of 30 Doradus with a telescope.
Q4: Compare and contrast the four star clusters (labeled A, B, C, and D) highlighted on the 30 Doradus image. How are they similar and how are they different?

Answer:
The star clusters are bright areas in the nebula where stars tend to be close to one another. Some of the clusters are brighter than others and some contain more stars than others. The spacing between the stars is not the same from one cluster to another. According to the text, the ages of the star clusters vary from about 2 million to about 25 million years old.

Vocabulary words

Astronomer(s)
A scientist who studies the universe and the celestial bodies residing in it, including their composition, history, location, and motion. Many of the scientists at the Space Telescope Science Institute are astronomers. Astronomers from all over the world use the Hubble Space Telescope.

Hubble Space Telescope
An orbiting telescope that collects light from celestial objects in visible, near-ultraviolet, and near-infrared wavelengths. The telescope's primary mirror is 2.4 m (8 ft.) wide. It orbits Earth about every 96 minutes and is powered by sunlight collected with its two solar arrays.

Light-year
The distance light will travel in a year — about 10 trillion kilometers or 6 trillion miles.

Milky Way Galaxy
The Milky Way, a spiral galaxy, is the home of Earth. The Milky Way contains more than 100 billion stars and has a diameter of 100,000 light-years.

Observation
The act of noticing or perceiving something. In science, an observation is a fact or occurrence that is noted and recorded. The Hubble Space Telescope is a tool astronomers use to make observations of celestial objects.

Observatory
A structure designed and equipped for making astronomical observations. Observatories are located on Earth and in space.