

1. Describe the major levels of structure in the universe. Hint: think of our universal address, and the objects or structures that make up each level.
2. What do we mean when we say that the universe is *expanding*? Why does an expanding universe suggest a beginning in what we call the *Big Bang*?
3. Describe the cause of the Earth's seasons, and explain why the seasons are opposite in the Northern and Southern Hemispheres.
4. What is the *ecliptic plane*?
5. Explain what Carl Sagan meant when he said that we are "star stuff."
6. Explain the statement, "*The farther away we look in distance, the further back we look in time.*"
7. How big is the observable universe? How many galaxies are in the observable universe? How many stars are in the observable universe? Put these numbers in perspective.
8. What is a *constellation*? How is a constellation related to a pattern of stars in the sky?
9. Why does the local sky look like a dome? Define *horizon*, *zenith*, and *meridian*. Describe how you can locate an object in the local sky by its altitude and its direction along the horizon.
10. What is the *Milky Way* in our sky, and how is it related to the Milky Way Galaxy?
11. Describe the Moon's cycle of *phases* and explain why we see phases of the Moon.
12. What is the *apparent retrograde motion* of the planets? Why was it difficult for ancient astronomers to explain but easy for us to explain?
13. What is *stellar parallax*? Describe the role it played in making ancient astronomers believe in an Earth-centered universe.
14. Suppose you are standing at the North Pole. Where is the celestial equator in your sky? Where is the north celestial pole? Describe the daily motion of the sky.