

Chapter 30: Section 1: Directed Reading Pages 775-779

Section: Characteristics of Stars (page 775)

1. What is a star?
2. How does the color of stars seen from Earth differ from their actual color?

ANALYZING STARLIGHT (page 775)

- _____ 3. How do astronomers learn about stars?
 - a. by analyzing the sounds that stars absorb
 - b. by analyzing the light that stars emit
 - c. by analyzing the sounds that stars emit
 - d. by analyzing the light that stars absorb
- _____ 4. What are spectrographs?
 - a. devices that separate light into different colors
 - b. devices that separate light into different gases
 - c. graphs that separate light into different spectra
 - d. devices that gather light into different spectra
- _____ 5. What are the three types of spectra?
 - a. remission, bright-line, and contiguous
 - b. emission, absorption, and composite
 - c. emission, absorption, and continuous
 - d. transmission, abduction, and continuous
- _____ 6. What does a star's dark-line spectrum reveal?
 - a. the star's distance and size
 - b. the star's composition and magnitude
 - c. the star's texture and temperature
 - d. the star's composition and temperature
- _____ 7. What is true of the layers of a star?
 - a. the inner layers are very cool, the outer layers are somewhat cool
 - b. the outer layers are very hot, the inner layers are somewhat cooler
 - c. the inner layers are very hot, the outer layers are somewhat cooler
 - d. the outer layers are very hot, the inner layers are somewhat hot

THE COMPOSITIONS OF STARS (page 776)

8. What do the colors and lines in the spectrum of a star indicate?
9. What is the most common element in stars? What is the second most common element?

THE TEMPERATURES OF STARS (page 776)

10. What is indicated by a star's color?
11. What color are the coolest stars?
12. What color are the hottest stars?
13. What temperature is our star (the Sun)?

THE SIZES AND MASSES OF STARS (page 776)

- _____ 14. What is the diameter of the sun?
a. 1,390,000 km b. 11,390,000 km c. 1,390,000 miles d. 390,000 km
- _____ 15. Stars that are very dense may have
a. greater temperature than the sun and still be much larger.
b. less mass than the sun and still be much smaller than the sun.
c. more mass than the sun and still be much smaller than the sun.
d. lower temperature than the sun and still be much larger.

STELLAR MOTION (page 777)

- _____ 16. What two kinds of motion are associated with stars?
a. inferred motion and actual motion b. actual motion and apparent motion
c. actual motion and imagined motion d. inferred motion and apparent motion
- _____ 17. What causes the apparent motion of the stars, which we can see with the unaided eye?
a. the actual movement of the stars b. the movement of the skies
c. the movement of the sun d. the movement of the Earth
- _____ 18. What causes the circular trails of light seen in long-exposure photographs of the stars?
a. the revolution of the stars around the North Pole b. the rotation of Earth on its axis
c. the revolution of Earth around the sun d. the rotation of the stars on their axes
- _____ 19. In the Northern Hemisphere, the movement of stars called circumpolar stars makes them appear
a. to be extremely distant. b. to circle the sun.
c. to circle Polaris, the North Star. d. to circle Mars and Venus.
20. What are three types of actual motion that stars may have?
21. What is the Doppler Effect?
22. What does the fact that most distant galaxies have red-shifted spectra indicate?

DISTANCES TO STARS

- _____ 23. What is a light-year?
a. the distance that light travels in one year b. the same as the speed of light
c. the amount of time it takes light to travel one mile d. the distance that light travels in one second
- _____ 24. How many kilometers does light travel in one year?
a. 300,000 km b. 9.46 billion km c. 700 trillion km d. 9.46 trillion km
- _____ 25. When we witness an event on the sun, when did it actually take place?
a. about 8 minutes before we saw it b. about 80 years ago
c. about 8 light-years before we saw it d. about 8 years before we saw it