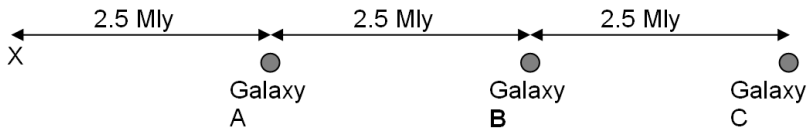
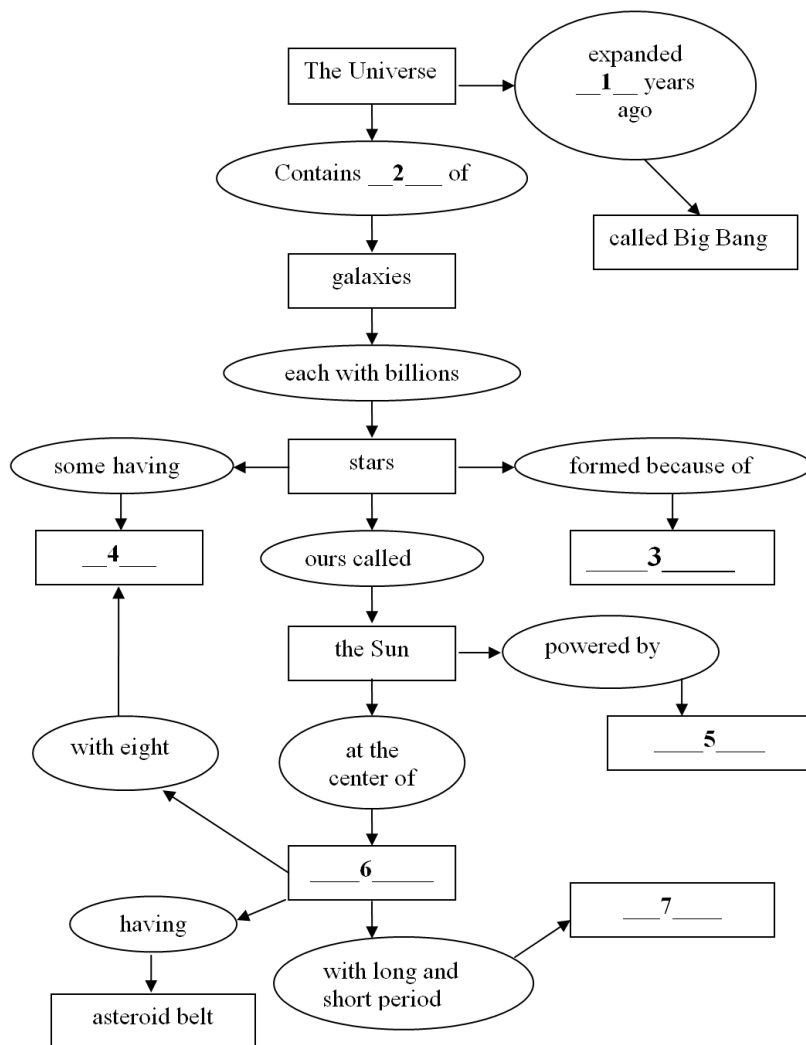


The following diagram shows the relative position of some galaxies (2.5 Mly = 2.5 million light years). The location labeled "X" is the observation point.



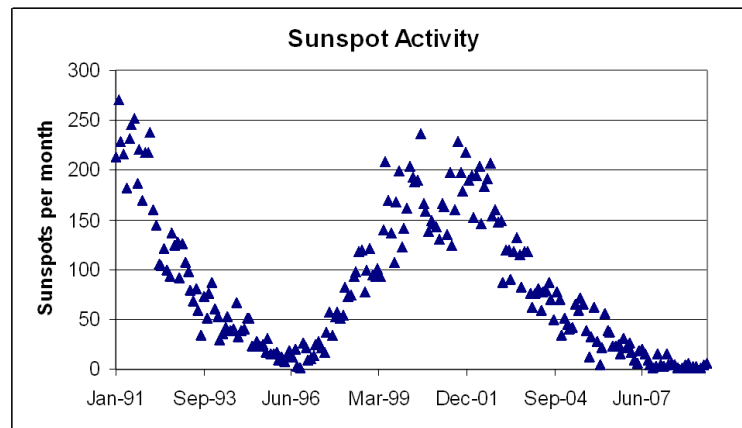
1. Suppose these galaxies were observed at location X using the Hubble telescope. Place them in order from **most red shift to least red shift**.
 - A. A, B, C
 - B. C, B, A
 - C. B, A, C
 - D. C, A, B
2. Predict what happens to the brightness of a star with an orbiting extra-solar planet.
 - A. It brightens when the planet is between its star and us.
 - B. It dims when the planet is between its star and us.
 - C. Brightness is not affected by the orbit.

Analyze the map and select the proper response for each missing term or phrase.



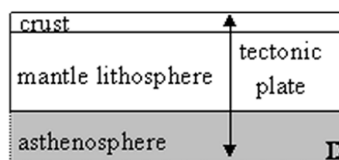
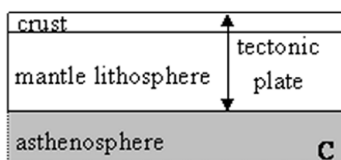
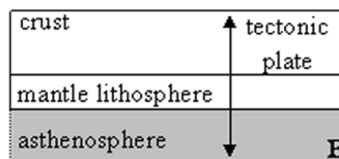
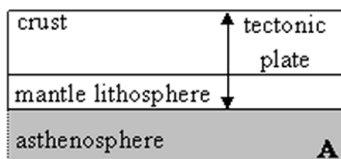
3. Analyze the map and select the proper response for missing term or phrase for number 1.
 - A. 150,000
 - B. 15 million
 - C. 15 billion
 - D. 15 trillion
4. Analyze the map and select the proper response for missing term or phrase for number 2.
 - A. Hundreds
 - B. Thousands
 - C. Millions
 - D. Billions
5. Analyze the map and select the proper response for missing term or phrase for number 3.
 - A. Fusion
 - B. Gravity
 - C. Heliosphere
6. Analyze the map and select the proper response for missing term or phrase for number 4.
 - A. Asteroids
 - B. Comets
 - C. Planets

7. Analyze the map and select the proper response for missing term or phrase for number 5.
 - A. Gravity
 - B. Fusion
 - C. Helioshere
8. Analyze the map and select the proper response for missing term or phrase for number 6.
 - A. Solar system
 - B. Universe
 - C. Galaxy
9. Analyze the map and select the proper response for missing term or phrase for number 7.
 - A. Planets
 - B. Moons
 - C. Comets
10. Based on this graph of the number of sunspots per month data from the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center (SWPC), when can we expect the next significant disruption to



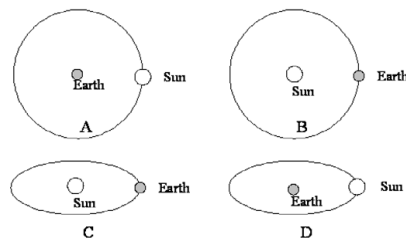
electronic communications?

- A. 2008 (just happened)
 - B. 2012
 - C. 2018
 - D. 2023
11. Which diagram best summarizes the structure of a tectonic plate?



- A. A
- B. B
- C. C
- D. D

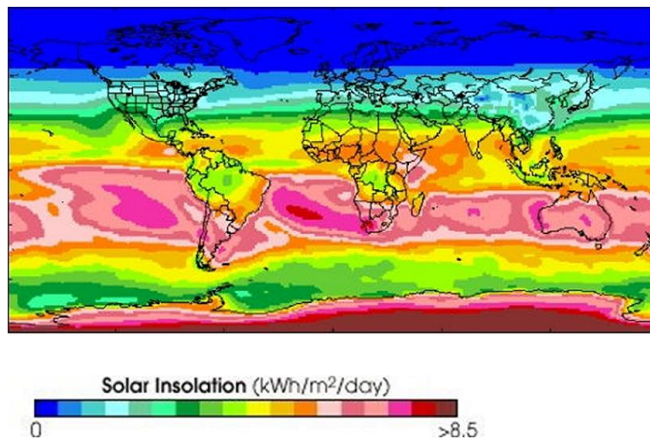
12. Which of these diagrams best illustrates the Earth's orbit around the Sun as viewed looking directly down



on the orbit?

- A. A
- B. B
- C. C
- D. D

13. What time of year is represented by the global insolation data shown in the diagram below?

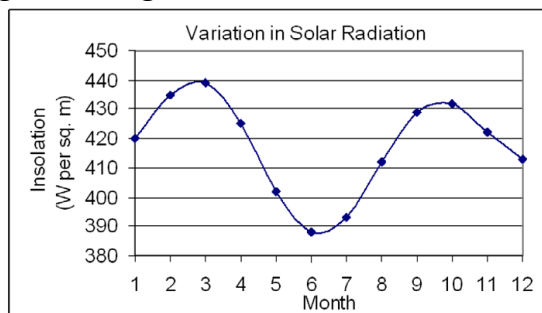


- A. January
- B. July
- C. No way to tell

14. How would an increase in rotational tilt angle change the locations of the Tropics of Cancer and Capricorn?

- A. Both would move toward the poles
- B. Both would move toward the equator
- C. Both would move north of their present locations
- D. Both would move south of their present locations

15. According to the diagram below, what location on Earth most likely experienced this isolation pattern in



2006?

- A. Equator
- B. Tropic of Cancer
- C. Tropic of Capricorn

16. What would happen to the seasons if the tilt of the axis was opposite to what it is now?

- A. All seasons would reverse
- B. Only winter and summer would reverse
- C. Only fall and spring reverse
- D. None reverse

17. According to the diagram below, which statement best reflects the relative positions of the Sun, Earth, the



moon, and Mars in our solar system?

- A. A represents the Sun, B is the moon, and C is the Earth.
 - B. A represents the Earth, B is the moon, and C is Mars.
 - C. D represents the Sun, E is the Earth, and F is the moon.
 - D. D is the Earth, E is the Sun, and F is Mars.
18. How do scientists estimate the age of the Universe?
- A. By measuring the age of the oldest known asteroids
 - B. By measuring the relative motion of other galaxies
 - C. By measuring speed of light from distant stars
19. How old is the Universe?
- A. 10-20 thousand years
 - B. 10-29 million years
 - C. 10-20 billion years
20. What process formed heavy elements, such as iron, found in your body?
- A. They formed in the Earth's core during its early stages.
 - B. They formed during supernovae of ancient stars.
 - C. They formed during the Big Bang.
21. How does "space weather" affect you?
- A. It causes moving air and clouds on Earth that causes weather systems.
 - B. It causes the Earth's magnetic field to form and permits navigation.
 - C. It causes electrical surges that can disrupt power systems.
22. Which type of planet is most likely to have volcanoes?
- A. Terrestrial or rocky
 - B. Jovian or gaseous
 - C. Icy
23. Which statement comparing terrestrial and jovian planets in our solar system is most accurate?
- A. Jovian planets are smaller and more dense than terrestrial planets.
 - B. Jovian planets are larger and more dense than terrestrial planets.
 - C. Jovian planets are smaller and less than terrestrial planets.
 - D. Jovian planets are larger and less dense than terrestrial planets.
24. How did scientists initially deduce part of the Earth's core is molten?
- A. Because certain vibrations do not pass through it.
 - B. Because it is the source of molten material for active volcanoes.
 - C. Because the Earth has a magnetic field that requires this.
25. What type of cooling mechanism relies on movement of material?
- A. Convection
 - B. Conduction
 - C. Radiative
26. Why are there seasons?
- A. Earth gets closer and farther away from the Sun as it orbits annually.
 - B. Insolation varies annually because of the Earth's rotational tilt.
 - C. The Sun increases and decreases solar output annually based on the orbit.

27. Why does Earth have a magnetic field?
- A. Due to content of atmospheric gases
 - B. Due to the types of rocks found in the lithosphere
 - C. Due to the Earth's liquid outer core
 - D. Due to the proximity to the Sun
28. The Earth is closer to the Sun during summer in the northern hemisphere than it is during winter.
True False
29. If the Earth were smaller it would have a less dense atmosphere.
True False
30. Life on Earth would most likely be less advanced if there were no magnetic field.
True False
31. Temperatures on Earth would be lower if there were less carbon dioxide in the atmosphere.
True False
32. Earth's orbit around the Sun is highly elliptical.
True False
33. If Earth did not have an atmosphere, its surface would have more craters formed by meteorite impacts.
True False
34. If Earth was smaller it would have a warmer interior.
True False

ch02 Key

1. B
2. B
3. C
4. D
5. B
6. C
7. B
8. A
9. C
10. B
11. C
12. B
13. A
14. A
15. A
16. A
17. C
18. B
19. C
20. B
21. C
22. A
23. D
24. A
25. A
26. B
27. C
28. FALSE
29. TRUE
30. TRUE
31. TRUE
32. FALSE
33. TRUE
34. FALSE

ch02 Summary

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