

Stars, Galaxies, and the Universe ▪ *Reading/Notetaking Guide***Star Systems and Galaxies** (pp. 614–621)

This section explains what a star system is, describes the three major types of galaxies, and describes the scale of the universe.

Use Target Reading Skills

The first column in the chart lists key terms in this section. As you read the section, write a definition of the key term in your own words in the second column.

Underline the most important feature or function in each definition. An example is done for you.

Key Term	Definition
Binary star	Star system with <u>two stars</u> .
Eclipsing binary	
Open cluster	
Globular cluster	
Galaxy	
Spiral galaxy	
Elliptical galaxy	
Irregular galaxy	
Quasar	
Universe	
Scientific notation	

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Star Systems and Clusters (pp. 615–616)

1. What are star systems?

2. Star systems with two stars are called double stars or _____.
3. How can astronomers tell whether there is an unseen second star in a system?
 - a. They observe the effects of its gravity on the brighter star.
 - b. They measure the parallax of the second star.
 - c. They send a probe to the second star.
 - d. They observe regular changes in the brightness of the star system.
4. A star system in which one star periodically blocks the light from another star is a(n) _____.
5. How did astronomers first discover a planet revolving around another star?

6. Why have most new planets discovered around other stars been very large?

7. A grouping of stars that has a loose, disorganized appearance and contains no more than a few thousand stars is called a(n) _____.
8. A large grouping of stars that contains mostly older stars is called a(n) _____.

Galaxies (p. 617)

9. What is a galaxy?

10. What is the Local Group?

11. What is a quasar?

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Star Systems and Galaxies *(continued)*

Types of Galaxies (p. 618)

Match the type of galaxy with its shape.

- | Type of Galaxy | Description of Shape |
|-----------------------------|---|
| _____ 12. Spiral galaxy | a. Bulge in middle and arms that spiral outward |
| _____ 13. Elliptical galaxy | b. Does not have a regular shape |
| _____ 14. Irregular galaxy | c. Looks like round or flattened ball |
15. Circle the letter of each sentence that is true about galaxies.
- a. Elliptical galaxies contain only new stars.
 - b. Irregular galaxies usually have many bright, young stars.
 - c. In spiral galaxies, most new stars form in the spiral arms.
 - d. All galaxies have huge bar-shaped regions of stars that pass through their center.

The Milky Way (p. 619)

16. The galaxy in which our solar system is located is called the _____.
17. What type of galaxy is the Milky Way?

The Scale of the Universe (pp. 620–621)

18. Why do astronomers often use scientific notation?
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19. Suppose a star is about 38,000,000,000,000 kilometers away from Earth. How do you write this number in scientific notation?
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-
20. How large is the observable universe? _____