

1. In a geocentric system, Earth is at the center of the revolving planets and stars.
2. Around 140 AD the Greek astronomer, Ptolemy, further developed the geocentric model.
3. In a heliocentric system, Earth and the other planets revolve around the Sun.
4. Around 1543, the Polish astronomer, Copernicus further developed the heliocentric model.
5. Galileo used the newly invented telescope to make discoveries that supported the heliocentric model.
6. An ellipse is an oval shape, which may be elongated or nearly circular.
7. Kepler found that the orbit of each planet is an ellipse.
8. The Solar system consists of the Sun, the planets and their moons, and several kinds of smaller objects that revolve around the Sun.

Thought questions for this section:

9. Why did early civilizations think the planets were wandering stars? They could not feel Earth move and did not have any technology.
10. What caused most scientists to change their belief from geocentric to heliocentric? Galileo improved the telescope. He was able to see four moons revolving around Jupiter.

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11. Some galaxies appear to have a bulge in the middle and arms that spiral outward, like pinwheels are called spiral galaxies.
12. Some galaxies do not have regular shapes and are known as irregular galaxies.
13. Our solar system is located in a spiral galaxy called the milky way.
14. The universe exploded in what astronomers call the big bang theory.
15. Since the Big Bang theory, the size of the galaxy has been increasing steadily.
16. According to Hubble's Law, the farther away a galaxy is the farther it is moving away from us.
17. A giant cloud of gas and dust collapsed to form our solar system.
18. New observations lead many astronomers to conclude that the universe will likely expand forever.

Thought questions for this section:

19. Place the following in order as if you are on Earth: Solar System, Universe and Galaxy. Which one is the largest and why?
 - 1 Solar System
 - 2 Galaxy
 - 3 UniverseThe universe is the largest because it includes the solar system and the galaxy.
20. If the big bang theory is accurate, what evidence do you expect to find in today's universe?
Hubble's law shows that the universe is still expanding.