

Chapter 22

Use with Section 2

ENRICHMENT

● The Inner Planets

Astronomical Data

With each observation of celestial bodies, early astronomers contributed to a more complete understanding of the universe. For example, originally people thought Earth was the center of the universe. Then, in 1610, astronomers discovered that Venus has phases just like Earth's moon. This discovery supported the idea that Earth and other planets revolve around the sun. This inference was based on what astronomers already knew about the moon and its phases. They result from light from the sun and the relative positions of the sun, the moon, and Earth. If Venus had phases too, they had to result from the same relationships. That meant that the sun is at the center of the solar system.

Use the table below to answer additional questions about the inner planets.

Planetary Data

Planet	Period of rotation (daylength)	Period of revolution (orbit)	Distance from Earth (millions of km)	Distance from the sun (millions of km)
Mercury	58.64 days	116 days	93	46–70
Venus	243 days	584 days	42–257	108
Earth	23 h 56 min 4 s	365.26 days	—	150
Mars	24 h 37 min 22.3 s	780 days	56–400	206.6–249.2

1. Is Venus's orbital speed the same, slower, or faster than Earth's? Explain.

2. Compare the orbit shapes of Venus and Mars.

3. Approximately how many Earth sunrise-sunset cycles occur during one rotation of Venus?

4. What is the average distance of Mars from the sun?
