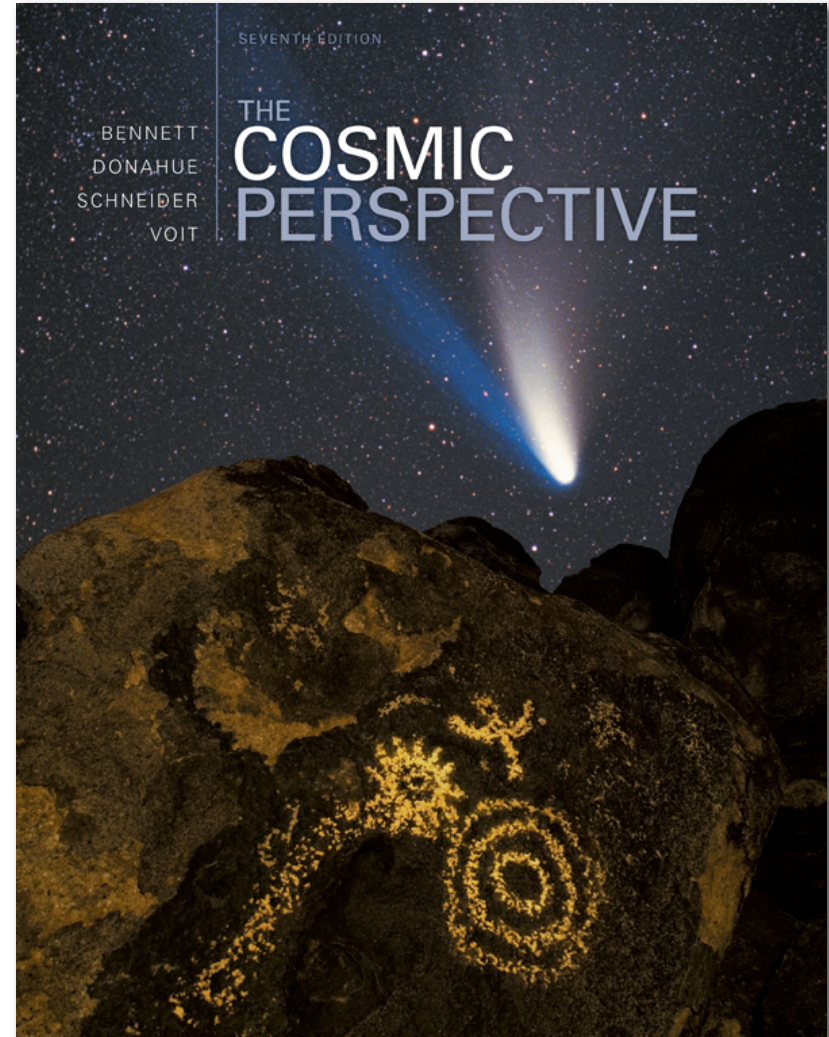


The Cosmic Perspective

Seventh Edition

Our Planetary System



7.1 Studying the Solar System

- What does the solar system look like?
- What can we learn by comparing the planets to one another?

What would we see if we could look at our solar system, without a telescope, from a spaceship beyond Neptune's orbit?

- a) We would see the Sun, but nothing else.
- b) We would see the Sun and the largest planets as pinpoints of light, but nothing else.
- c) We would see the Sun, all the planets, and their moons, but nothing else.
- d) We would see the Sun, all the planets and moons, and the largest asteroids and comets.

Chapter 7

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Chapter 7

Which lists the planets in order of increasing size (radius)?

- a) Mercury, Earth, Mars, Venus, Jupiter, Saturn, Uranus, Neptune
- b) Mercury, Venus, Mars, Earth, Neptune, Uranus, Jupiter, Saturn
- c) Earth, Mercury, Venus, Mars, Saturn, Jupiter, Neptune, Uranus
- d) Mercury, Mars, Venus, Earth, Neptune, Uranus, Saturn, Jupiter
- e) Mars, Earth, Mercury, Venus, Saturn, Uranus, Neptune, Jupiter

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- e) Mars, Earth, Mercury, Venus, Saturn, Uranus, Neptune, Jupiter

How does the size of the Sun compare to the size of Earth?

- a) The Sun is about 3 times larger than Earth.
- b) The Sun is about 10 times larger than Earth.
- c) The Sun is about 100 times larger than Earth.
- d) The Sun is about 1000 times larger than Earth.
- e) The Sun is about 300,000 times larger than Earth.

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- c) The Sun is about 100 times larger than Earth.**
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Which of the following planets has the most dense atmosphere?

- a) Mercury
- b) Venus
- c) Earth
- d) Mars

Which of the following planets has the most dense atmosphere?

- a) Mercury
- b) Venus**
- c) Earth
- d) Mars

Which of the following planets has polar ice caps?

- a) Earth
- b) Mars
- c) Mercury
- d) all of the above
- e) A and B

Which of the following planets has polar ice caps?

- a) Earth
- b) Mars
- c) Mercury
- d) all of the above
- e) A and B**

Which of the following planets has the most oxygen in its atmosphere?

- a) Earth
- b) Mars
- c) Venus
- d) Mercury

Which of the following planets has the most oxygen in its atmosphere?

- a) Earth**
- b) Mars
- c) Venus
- d) Mercury

Which planet has the most moons?

- a) Mercury
- b) Mars
- c) Venus
- d) Earth
- e) B and D

Which planet has the most moons?

- a) Mercury
- b) Mars**
- c) Venus
- d) Earth
- e) B and D

Which planet has a volcanically active moon?

- a) Earth
- b) Jupiter
- c) Saturn
- d) Uranus
- e) Neptune

Which planet has a volcanically active moon?

- a) Earth
- b) Jupiter**
- c) Saturn
- d) Uranus
- e) Neptune

Which of the following planets has rings?

- a) Jupiter
- b) Saturn
- c) Uranus
- d) Neptune
- e) all of the above

Which of the following planets has rings?

- a) Jupiter
- b) Saturn
- c) Uranus
- d) Neptune
- e) all of the above**

Which planet has the largest tilt to its rotation axis?

- a) Jupiter
- b) Saturn
- c) Uranus
- d) Neptune
- e) They all have similar tilts.

Which planet has the largest tilt to its rotation axis?

- a) Jupiter
- b) Saturn
- c) Uranus**
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Which planet has a large moon that orbits in the opposite direction of the planet's rotation?

- a) Earth
- b) Jupiter
- c) Saturn
- d) Uranus
- e) Neptune

Which planet has a large moon that orbits in the opposite direction of the planet's rotation?

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- b) Jupiter
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Which of the following is a characteristic of a dwarf planet?

- a) A dwarf planet must be in the Kuiper Belt.
- b) A dwarf planet cannot have any moons.
- c) A dwarf planet must be round.
- d) all of the above

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Which of the following planets has the coldest nighttime temperature?

- a) Mercury
- b) Venus
- c) Earth
- d) Mars

Which of the following planets has the coldest nighttime temperature?

- a) Mercury**
- b) Venus
- c) Earth
- d) Mars

Which of the following is *not* a characteristic of jovian planets?

- a) They all have many moons.
- b) They have a higher density than terrestrial planets.
- c) They are larger than terrestrial planets.
- d) They are farther from the Sun and farther apart from each other than the terrestrial planets.
- e) They have deep atmospheres made of hydrogen, helium, and hydrogen compounds.

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What is the value of comparative planetology?

- a) It helps us learn about a planet by studying processes that affect all planets.
- b) It helps us understand planets around other stars that can be studied individually in great detail.
- c) It helps us develop a theory for the formation of the solar system.
- d) all of the above
- e) A and B

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- d) all of the above**
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What characteristic of the planets is nearly the same for all planets?

- a) composition
- b) orbit shape and orientation
- c) rotation period (length of day)
- d) size
- e) temperature

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7.2 Patterns in the Solar System

- What features of our solar system provide clues to how it formed?

Which of the following is *not* a clue to the formation of the solar system?

- a) The number of small rocky planets is equal to the number of large gas-rich planets.
- b) There are a large number of small rocky and icy objects in different regions of the solar system.
- c) The planets and moons generally orbit in the same plane.
- d) The Earth has an unusually large moon.
- e) Uranus has a large tilt to its rotation axis.

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7.3 Spacecraft Exploration of the Solar System

- How do robotic spacecraft work?

What spacecraft flew by Jupiter, Saturn, Uranus and Neptune?

- a) Galileo
- b) Cassini
- c) Voyager 1
- d) Voyager 2
- e) none of the above

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Why do orbiters typically cost more than flyby missions?

- a) They typically carry more scientific instruments.
- b) They need expensive protection from the charged particles in a planet's magnetosphere.
- c) They must carry extra fuel so that they can go into orbit.
- d) They require more powerful radio systems to transmit data to Earth.
- e) all of the above

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