

Notetaking Sheet Astronomy Book Chapter 2 The Sun-Earth-Moon System

Section 1 Earth

- A. Properties of Earth – people used to think that Earth was flat and at the center of the universe.
 - 1. Earth is now known to be a round, three dimensional sphere.
 - a. Axis – imaginary vertical line around which Earth spins
 - b. Rotation – the spinning of Earth around its axis that causes day and night
 - 2. Earth has a magnetic field with north and south poles.
 - 3. Magnetic axis – imaginary line joining Earth's magnetic poles
 - a. Earth's magnetic axis does not align with its rotational axis
 - b. The location of magnetic poles slowly changes over time.
- B. Causes of seasons
 - 1. Revolution – Earth's yearly orbit around the Sun
 - a. Earth's orbit is an ellipse, or elongated, closed curve
 - b. Because the Sun is not centered in the ellipse, the distance between Earth and the Sun changes during the year.
 - 2. Earth's tilt causes seasons
 - a. The hemisphere tilted toward the Sun receives more daylight hours than the hemisphere tilted away from the Sun
 - b. The longer period of sunlight is one reason summer is warmer than winter
 - 3. Earth's tilt causes the Sun's radiation to strike the hemispheres at different angles.
 - a. The hemisphere tilted toward the Sun, the Sun appears high in the sky and the radiation strikes Earth more directly.
- C. Solstice – the day when the Sun reaches its greatest distance north or south of the equator
 - 1. Summer solstice occurs June 21 or 22 in the northern hemisphere.
 - 2. Winter solstice occurs December 21 or 22 in the northern hemisphere.
- D. Equinox – the day when the Sun is directly over Earth's equator
 - 1. Daylight and nighttime hours are equal all over the world
 - 2. Spring equinox occurs on March 20 or 21 in the northern hemisphere.
 - 3. Fall equinox occurs on September 22 or 23 in the northern hemisphere.

Section 2 The Moon – Earth's Satellite

- A. Motions of the Moon
 - 1. The Moon rotates on its axis.
 - 2. The Moon's rotation takes 27.3 days with the same side always facing Earth.
 - 3. The Moon seems to shine because it reflects sunlight.
- B. Moon phases – the different forms the Moon takes in its appearance from Earth
 - 1. New moon – when the Moon is between Earth and the Sun and cannot be seen
 - 2. Waxing phase – more of the illuminated half of the Moon that can be seen each night after the new moon
 - a. First visible thin slice of the moon is a waxing crescent.
 - b. First quarter phase – half the lighted side of the Moon is visible.
 - c. Waxing gibbous – more than one quarter is visible.
 - d. All of the Moon's lighted side is visible during a full moon.