

Astronomy Today Volume 1 The Solar System Unit 1 Chapters 1-4
Concepts and Objectives

Be able to define or explain any of the following:

Chapter 1: Astronomy and the Universe: Universe, astronomy, light-year, scientific method, hypothesis, theory, celestial sphere, celestial poles, celestial equator, constellation, ecliptic, declination, right ascension, diurnal motion, meridian, time zones, summer solstice, winter solstice, autumnal equinox, vernal equinox, zodiac, sidereal day and month, synodic day and month, leap year, tropical year, rotation, revolution, lunar phases, lunar eclipse, solar eclipse, precession, triangulation, parallax.

Chapter 2: The Copernican Revolution: Ancient astronomy (Stonehenge, Mayans, Chinese, Islamic), Aristotle, Erathosthenes, retrograde motion, Ptolemy, epicycle, Copernicus, Galileo, Tycho Brahe, Johannes Kepler (3 laws), Isaac Newton (Laws of Motion, Law of Universal Gravitation), astronomical unit, inertia, weight, force, mass, acceleration, escape speed.

Chapter 3: Radiation: Electromagnetic radiation (visible light, radio, infrared, ultraviolet, x-rays, gamma rays), wave, wavelength, period, amplitude, frequency, nanometer, electron, proton, electromagnetism, speed of light, temperature, blackbody curve, Planck curve, temperature scales (Fahrenheit, Celsius, Kelvin), Stefan's law, Wien's law, Doppler effect, transverse motion, relative motion.

Chapter 4: Spectroscopy: spectroscopy, Kirchhoff's laws, atoms, nucleus, neutrons, element, ground state, ionized, quantized, Bohr's formula, photons, molecules, fluorescence, rotational broadening, Zeeman effect.