

## Flashcards for Astronomy

Day	A single rotation on Earth's axis, one sunrise until the next, the Sun rises in the East and sets in the west. 24 hours= one rotation in a solar day
Month	A complete cycle of lunar phases
Year	A single revolution around the Sun, the time it takes to go through all 4 seasons
Season	A change in the amount of solar radiation due to our axis tilt
Aphelion	The point when Earth is at its farthest point from the Sun, opposite of farthest point from the Sun=Perihelion
Perigee	The closest point in the Moon's orbit around the Earth, opposite of the farthest point from the Earth=Apogee
ellipsoid	The actual shape of the Earth (oblate sphere)
Synchronous	We always see the same side of the Moon due to _____ rotation, literally rotating at the same rate.
Centrifugal	The force acting away from the center of a circle. The bulge in Earth's equator is caused by the centrifugal force and the Earth's rotation
Neap Tide	Lower than normal Tide that occurs when the Sun, Moon and Earth are at right angle to each other (first and 3 <sup>rd</sup> Quarter Lunar phases)
Spring Tide	Much Higher than normal tides that occur during the New and Full Moon or Lunar Phases. The Sun and Moon combine their gravitational pull on the world's oceans
Equinox	Literally means "equal night", occur when the Sun's rays fall directly on the Equator during the Vernal Equinox (March 22) and Autumnal Equinox (Sept 22)
Winter	The Northern Hemisphere is tilted away from the Sun with the LEAST amount of incoming solar radiation or minimum hours of daylight. The Sun's rays are vertical to the Tropic of Capricorn. The Winter Solstice is Dec 22 <sup>nd</sup> . The North Pole has 24 hours of darkness and the South Pole has 24 hours of daylight.
Summer	The Northern Hemisphere is tilted towards the Sun. The Sun is at its highest altitude in the sky giving us the maximum hours of daylight. Rays from the Sun fall directly on the Tropic of Cancer. The Summer Solstice is June 21 <sup>st</sup> . The North Pole has 24 hours of daylight while the South Pole has 24 hours of darkness.
Ecliptic	The plane of Earth's orbit around the Sun
Vernal Equinox	March 22 <sup>nd</sup> , Sun's rays fall directly on the equator
Autumnal Equinox	Sept 22 <sup>nd</sup> , Sun's rays fall directly on the equator
Nutation	The small nodding oscillation in Earth's precessional wobble. Takes 19 years for one cycle of nutation
Precession	The wobble of Earth's axis of rotation. Takes 26,000 years to go through one period of precession
Earth's axis tilt	is 23 and ½ degrees and the reason Earth has seasons
Gamma Waves	The shortest wavelength, highest frequency, and the most penetrating form of radiation
Radio waves	The longest wavelength and lowest frequency radiation. These wavelengths are as large as a house!
Ultraviolet waves	Slightly shorter wavelength than VIOLET visible light, it has a high enough frequency to penetrate the top layer of human skin (which causes sunburn or skin cancer)
Steady State Theory	The idea that the universe looks the same now as it always has
Big Bang Theory	In science, it is the model of the universe that says the universe began with a singularity and has been expanding ever since that time.
The Inflationary Model	This model of the formation of the universe says that the universe began as a fluctuation and expanded very rapidly for a fraction of a second. After that rapid expansion it settled into a more ordered rate of expansion.

Doppler shift	Most astronomers believe that the observation of nearby galaxies show that the universe is expanding. The wavelengths of light are RED-shifted and this means they are moving away from us.
$F = G \frac{m_1 m_2}{r^2}$	Newton's Law of Universal Gravitation. It states that the force of gravity between 2 celestial bodies is proportional to the product of the masses of the bodies divided by the square of the radius between them.
$p^2 = a^3$	Kepler's third Law. It states that the square of the orbital period of any celestial object is equal to the cube of the length of the orbital axis
Kepler's First law	Celestial objects orbit in a shape that is an ellipse. For our solar system, the SUN is at one of the foci of the elliptical orbit.
Kepler's Second law	States that planets sweep out equal areas in equal time. That means that planets will move faster when they are closer to the Sun (perihelion) and slower when they are farther from the Sun (aphelion). The orbital speed is faster at perihelion.
Barycenter	For any planet and our Sun, the center of mass, or barycenter, is always closer to the Sun because it is SO much more massive than any planet in our solar system.
An astronomical unit	Established as the distance from Earth to the Sun. abbreviated as AU
Cosmic background radiation	Weak radiation left over from the big bang that was discovered, in 1965, to be travelling in all directions in space.
Fusion	The process of combining atomic nuclei, this generates the energy in all stars like the Sun. Fission is the opposite of the this in that the heavy atoms are SPLIT as in a nuclear reactor to generate heat to make electricity.
Radiation from the Sun	Is filtered, absorbed and reflected by Earth's atmosphere. Harmful cosmic radiation is deflected around planet Earth by the <b>magnetosphere</b> (this is our magnetic field defined by the Van Allen Radiation belts).
Review our galactic address	We are the 3rd planet orbiting our star, the Sun, that is located in the spiral arm of the Orion Star Cluster in the Milky Way galaxy.

Please see the link to the document for our [Astronomy Test Diagrams](#) also located on this web page