

Astronomy 3L

Vocabulary/Review for Quiz #1

Topics Covered: Using the star wheel (rise and set times; locating constellations, stars, and asterisms; looking up right ascension and declination), changes in the sky over one evening, changes in the sky over a year. Be able to explain both **how** and **why** the sky changes over a night or over a year.

Altitude – The angular distance of a celestial body above the horizon, measured in degrees. An object that is straight overhead (at the zenith) has an altitude of 90° . An object that is $1/2$ way between the horizon and the zenith has an altitude of 45° .

Annual motion – The apparent motion of the Sun relative to the stars over the course of one year, which is the result of the Earth's orbit around the Sun.

Asterism – A distinctive pattern of stars not identified as a constellation. Examples: the Summer Triangle (made up of three different constellations), the Pleiades (a star cluster within the constellation Taurus).

Circumpolar – A constellation that is always above the horizon is referred to as "circumpolar" (i.e. circles the pole). Which, if any, constellations are circumpolar depends on your latitude on Earth. (Ex: Ursa Minor is circumpolar as viewed from CA).

Constellation – 1. A group of stars, sometimes making a distinctive pattern, usually named after an object, animal, or mythical person. 2. One of 88 officially recognized regions, which cover the entire sky. Referring to an object as being "in" a given constellation means that its direction puts it within the boundaries of that region. The object may be at any distance (e.g. much nearer or much farther away than the bright stars that make up the constellation).

Daily ("diurnal") motion – The daily apparent motion of the Sun (e.g. rising in the East and setting in the West), that is the result of the Earth's eastward spin on its axis.

Degree – A unit of angular measure. There are 360 degrees in a circle.

Ecliptic – 1. The plane defined by Earth's orbit as seen from the Sun. 2. The apparent path of the Sun against the background of stars over the course of one year.

Horizon – A large circle surrounding an observer that is 90 degrees below the zenith, and which can sometimes be seen where flat land or ocean meets the sky in the distance. In the city, hills or buildings often block the horizon but it can be estimated by holding out your arm horizontally.

Meridian – An imaginary line in the sky, it is the half-circle that runs from the horizon in the south up through the zenith and back down to the horizon in the north. In the planetarium, a meridian line with a scale in degrees can be projected on the dome. When a star is on the meridian, it will be due south, and will be at its highest altitude (the highest point it reaches in the sky, which is usually NOT the zenith).

North Star (“Polaris”) – The star at the end of the handle of the Little Dipper (Ursa Minor) that is very close to the point about which all other stars appear to rotate, i.e. the North Celestial Pole.

Precession – A phenomenon in which the spin axis of a body wobbles.

Revolution – A word used to describe one body orbiting another body, e.g. the Earth revolves around the Sun. One revolution of the Earth around the Sun takes one year.

Rotation – The spinning of a body (e.g., Earth) on its axis. The Sun also rotates on an axis.

Zenith – The point directly above an observer’s head (i.e. 90 degrees above the horizon). In the planetarium, the zenith is the highest point on the dome.

Zodiac – The set of constellations through which the ecliptic passes. Historically there were 12 such constellations. In the system of 88 constellations defined by the International Astronomical Union in the 20’s, there are 13 (Ophiuchus being the 13th).