Astronomy 101
Some Definitions

Time

Day — Time between successive risings or settings of the Sun or a star.
Month — Time for the Moon to go through its phases or move around the sky once.
Year — Time for the seasons to repeat or for the Sun to move around the sky once.

Note: Each of these time definitions is actually for (at least) two distinct periods. (See Sidereal and synodic periods in the planets section below.)

Motion

Daily motion — Motion of celestial objects relative to the horizon.
Annual motion — Motion of the Sun, Moon, and planets relative to the stars.
Direct motion — The usual annual motion from west to east.
Retrograde motion — Annual motion east to west.

Celestial positions

Altitude — The angle between a celestial object and the horizon.
Azimuth — The direction of the horizon directly below a celestial object.
North celestial pole — (NCP) The point in the northern sky about which all stars revolve. It’s an extension of the Earth’s rotation axis.
Meridian — The curve running from the northern horizon through the zenith to the southern horizon. It divides the sky into eastern and western halves.
Transit — When an object in the sky crosses the meridian.
Celestial equator — The curve through all the stars in the sky which rise exactly in the east and set exactly in the west. It’s an extension of the Earth’s equator.

Ecliptic — The path of the Sun's annual motion through the stars.
Summer solstice — The location of the Sun furthest north on the ecliptic.
Winter solstice — The location of the Sun furthest south on the ecliptic.
Equinox — The location of the Sun when it rises exactly in the east and sets exactly in the west; where the ecliptic crosses the celestial equator.

Stars

Circumpolar stars — The stars which are always above the horizon and never set.
Heliacal rising — The first visible rising of a star after it has disappeared behind the Sun.
Constellations — Arbitrary groupings of stars.
Zodiac — The band of stars along the ecliptic through which the planets move.
Planets

**Conjunction** — When a planet is closest to the Sun in the sky.

**Opposition** — When a planet is opposite to the Sun in the sky.

**Inferior planets** — The planets which stay close to the Sun.

**Superior planets** — The planets which can be at opposition.

**Sidereal period** — The period as measured with respect to the stars.

**Synodic period** — The period between successive oppositions, conjunctions, etc.

Finally ...

**Precession** — The slow motion of the NCP and celestial equator with respect to the ecliptic and stars.