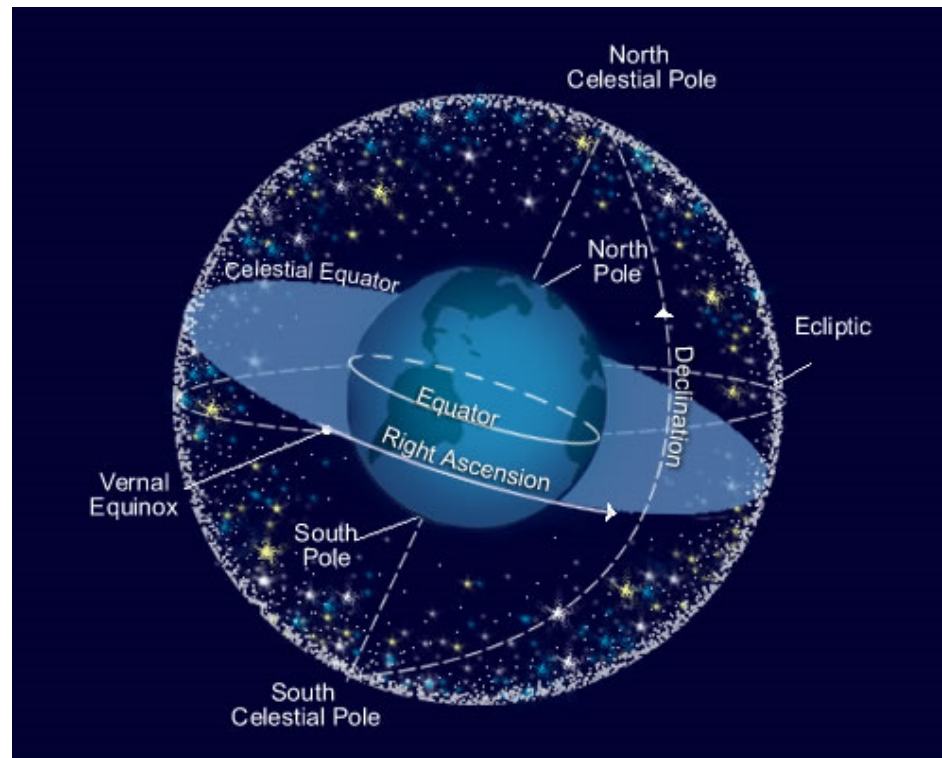


Celestial Sphere

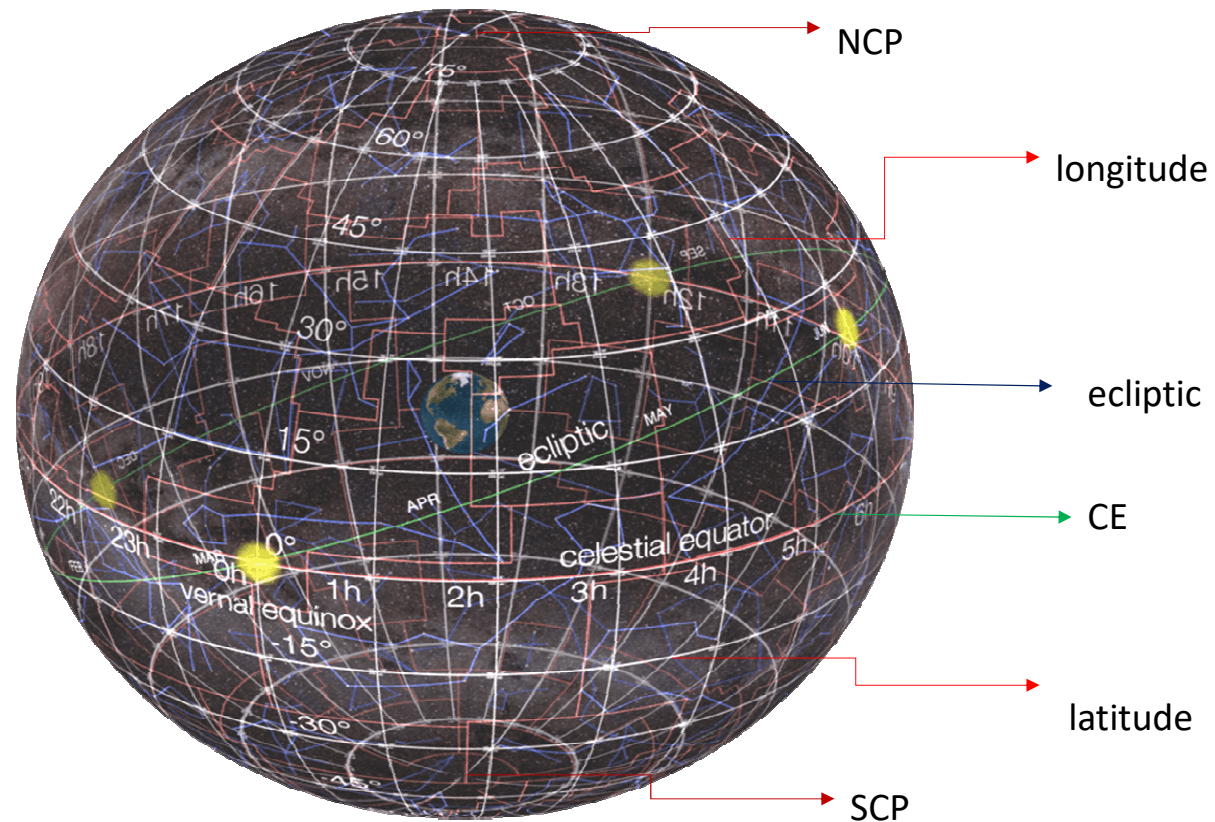
Dandeswar Deka
Assistant Professor
Department of Physics
B. H. College, Howly.
E-mail: d.deka2010@rediffmail.com

An useful construction for describing locations of objects in the sky is the **celestial sphere(CS)**, which is considered to have an infinite radius. The center of the earth is the center of the celestial sphere and the sphere's pole and equatorial plane are coincident with those of the earth.



Why is it called a celestial sphere?

It is used to describe the position of objects in the sky, the celestial sphere is a fictitious sphere centred on the Earth upon which all celestial bodies can be projected. At any one time, an observer on the Earth's surface can only see half of the celestial sphere since the other half lies below the horizon.



Some basic definitions

Celestial Sphere :

The imaginary sphere of infinite radius within which celestial bodies appear to lie is called celestial sphere. The earth and the observer are visualized as being at the centre of the sphere, and the sphere as rotating once every sidereal day (4.09 min shorter than solar day). The sphere is used to describe the position of celestial bodies with respect to the earth.

Celestial equator :

Celestial equator is the great circle in which the plane of the terrestrial equator intersects the celestial sphere and it is equidistant from the celestial poles.

Horizon :

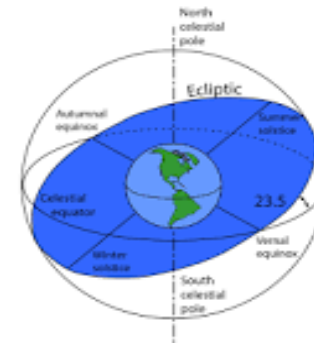
The horizon is the line that separates the Earth from the sky. There two main types of horizons—Earth-sky horizons and celestial horizons. Both Earth-sky and celestial horizons have different sub-types of horizons. The local horizon, geographic horizon, and sea-level horizon are all Earth-sky horizons.

Zenith and Nadir :

Nadir, a term used in astronomy for the point in the heavens exactly opposite to the zenith, the zenith and nadir being the two poles of the horizon. That is, the zenith is directly overhead, the nadir directly underfoot.

Ecliptic

Ecliptic, in astronomy, is the great circle that is the apparent path of the Sun among the constellations in the course of a year. From another viewpoint, the projection on the celestial sphere of the orbit of Earth around the Sun. The constellations of the zodiac are arranged along the ecliptic.



Thank You