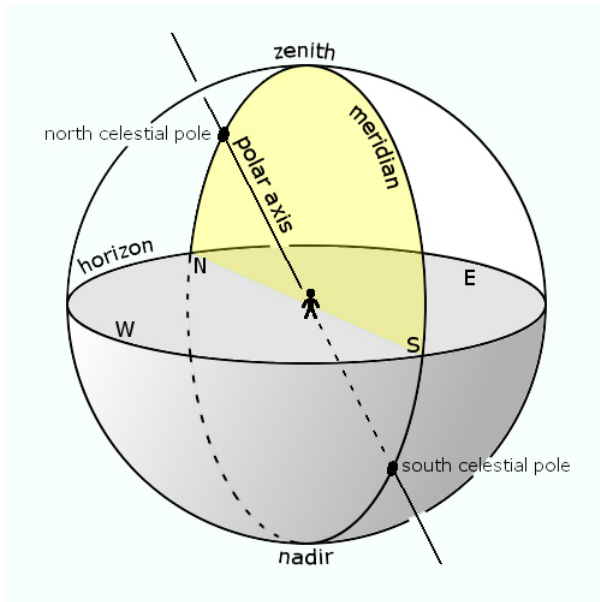


3.3: Our Night Sky



CC BY-SA 3.0 | Image courtesy of Wikimedia Author, Tfr000.

The Celestial Sphere is an imaginary sphere on which all the objects in the sky appear when observed from a specific place, which also appears to move. This sphere appears to surround the Earth. The Sun and Moon, as well as the bright planets, also appear on the Celestial Sphere, moving independently from the background of stars.

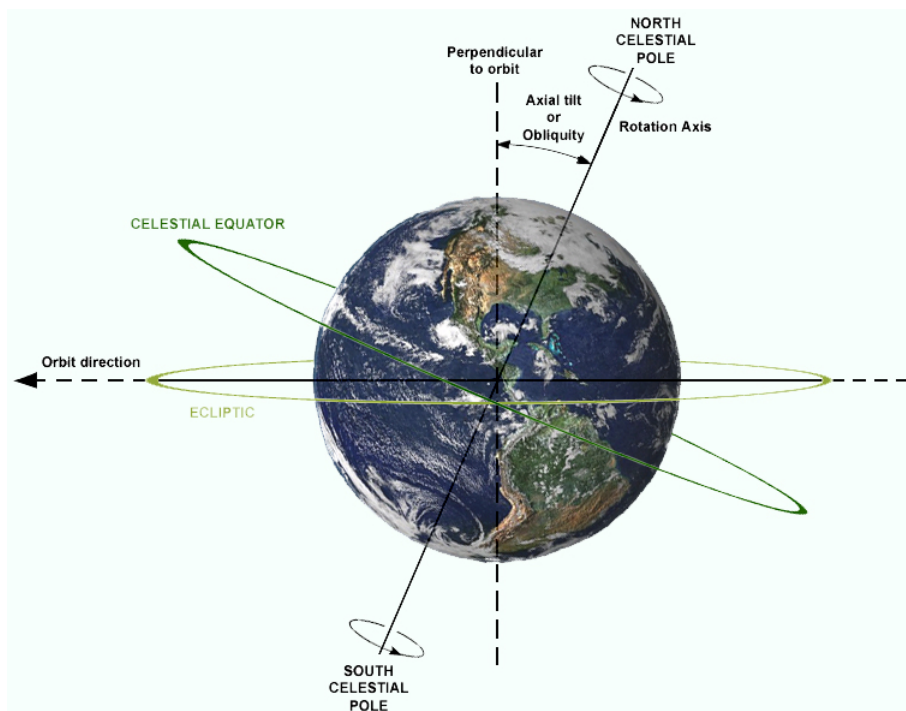
Directions on Earth, in the Universe

On the Earth we use several directional indicators. We use North, East, South, and West. North is 0°, East is 90°, South is 180°, and West is 270°. We use latitude and longitude. Latitude is an imaginary line that runs north or south from the Earth's equator, and longitude runs east or west from the Earth's meridian. We use similar directional and positional indicators for other Solar System bodies.

There are also Celestial Sphere directions. The North and South Celestial Poles are the points at which the Celestial Sphere appears to turn or rotate. This is an extension of the Earth's axis; the stars rotate about these points. Astronomers use Celestial Pole shorthand for these locations

- NCP is North Celestial Pole
- SCP is South Celestial Pole

Points on the Celestial Sphere



CC BY 3.0 | Image courtesy of Author: I, Dennis Nilsson.

There are other points on the Celestial Sphere we see when looking up to the sky. The Local Sky is the sky we see from where we stand. It is called local sky because what one would see in Jacksonville, Florida is different than what one would see in Seattle, Washington and what one would see in Brisbane, Australia.

The Celestial Equator is a projection of Earth's equator onto the Celestial Sphere. The Ecliptic is the Sun's annual path across the Celestial Sphere. Note that the Ecliptic is not the same location as the Celestial Equator due to Earth's tilt of approximately 23.4° . The Zenith is the point directly overhead. And the Meridian is an imaginary line from due north to the zenith to due south. The Meridian divides the sky into halves and can be considered a division between rising objects – those to the east of the meridian, and setting objects – those to the west of the meridian.

Let's go back to the North, East, South, and West system. Generally speaking, objects rise in the East and set in the West. This depends on the object's location on the Celestial Sphere and the observer's location on Earth. For example, if you live at the North or South Poles, the stars will simply circle, neither rising nor setting.

This page titled [3.3: Our Night Sky](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by [Lumen Learning](#) via [source content](#) that was edited to the style and standards of the LibreTexts platform.