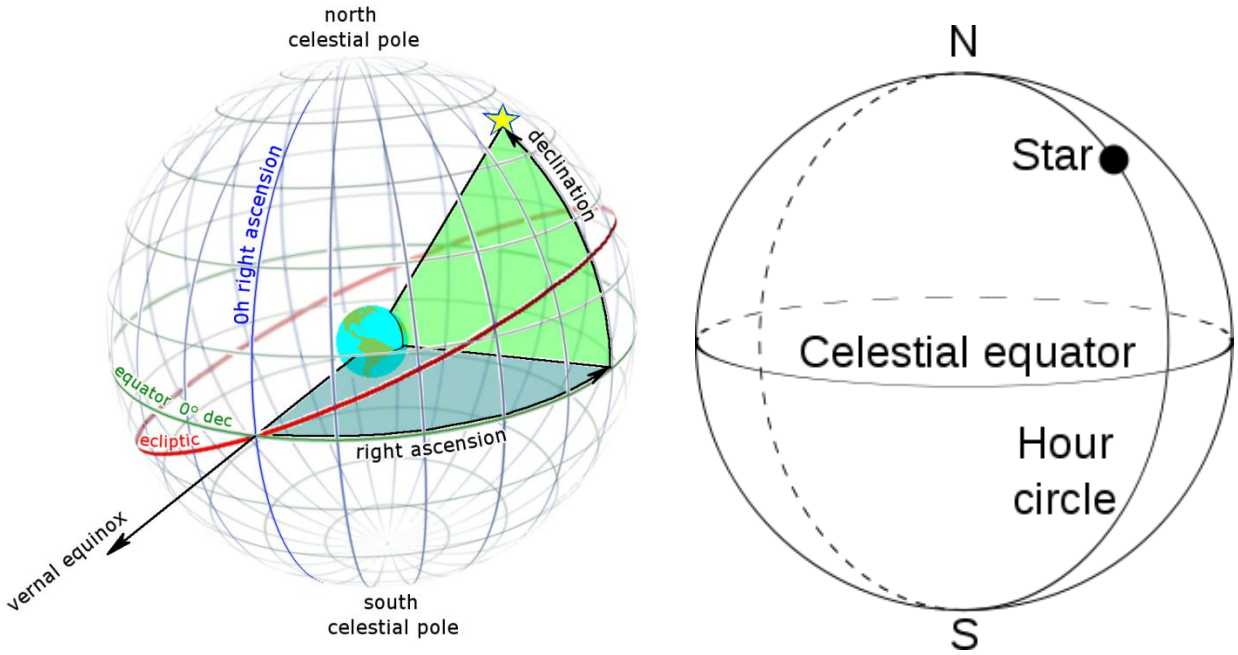
# Right Ascension and Declination

Declination and right ascension are coordinates resembling latitude and longitude, but instead of giving the position of location on Earth, they give a position of an object, like a star, on the sphere of the sky. Together, they make up the **equatorial coordinate system**, also called the celestial coordinate system, for identifying the location of a celestial object relative to the Earth's equator. It is based on projecting the Earth's equator infinitely into space.




*Images courtesy of Wikimedia Commons*

**Declination** is the astronomical equivalent of latitude. Declination is an angular distance of a point north or south of the **Celestial Equator**, a projection of the Earth's equator into space. Declination is measured in degrees from -90° to +90°.

- Celestial South Pole = -90° declination
- Celestial Equator = 0° declination
- Celestial North Pole = +90° declination

**Right Ascension** is the astronomical equivalent of longitude. Right ascension is the angular distance of an object measured eastward from the **First Point of Aries**, also called the **Vernal Equinox** (see above). The First Point of Aries is named after the Aries constellation. Unlike longitude, right ascension is usually measured in hours, minutes, and seconds with 24 hours being a full circle (24 hours = 360°). This means each hour is 15 degrees (1 hour = 15°).

Taken together, a celestial object's right ascension and declination gives its location on the sky.