

1.2: Daytime, Nighttime

Sunrise, Sunset — Moonrise, Moonset

Daytime, Nighttime

One of the obvious motions of the heavens is our day and night cycle. Earth turns on its axis in approximately 24 hours. This brings our planet into continuous day and night cycles, where half of Earth is always exposed to sunlight and the other half of Earth is in nighttime, with no sunlight. Note that there are other luminous objects in the heavens, such as the Moon. Yet, by far, the vast majority of our natural lighting comes from the Sun. Even when it is cloudy, we know when it is daytime and likewise nighttime.



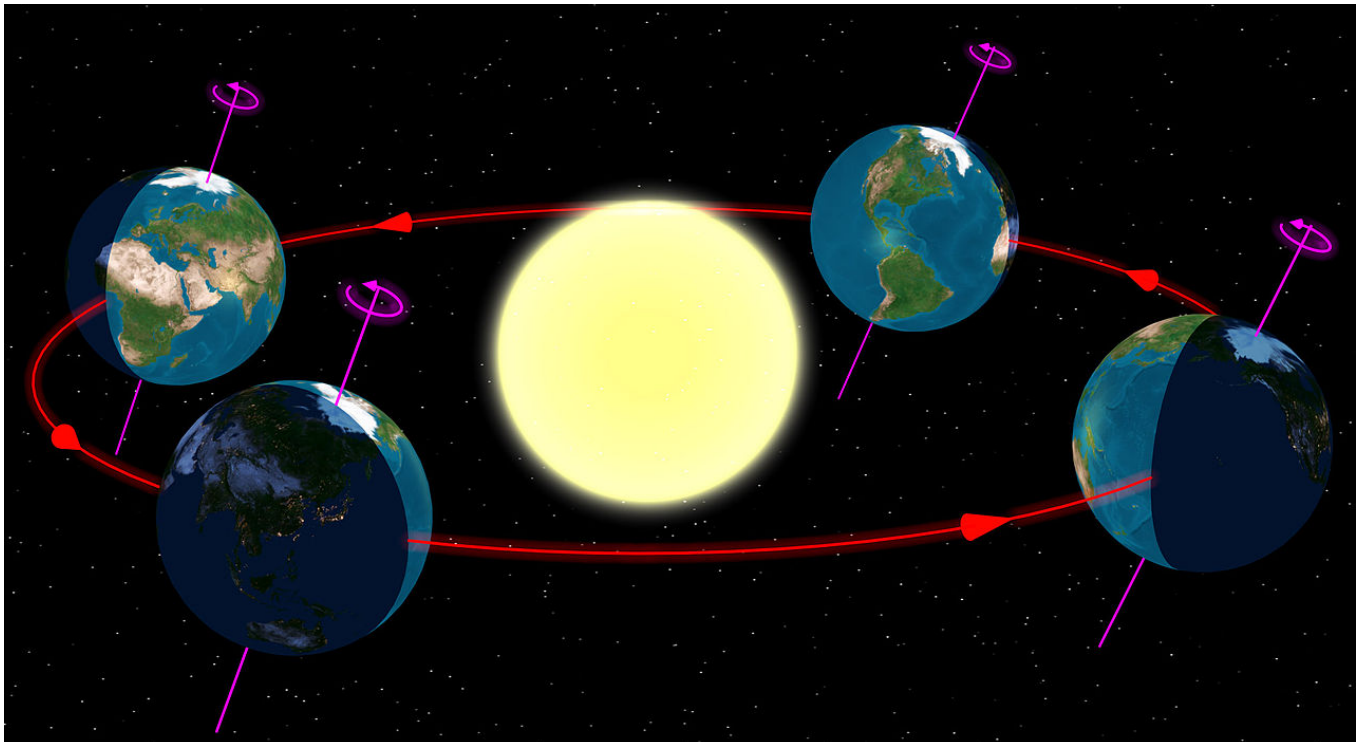
Dayside of Earth, including North America. [” [Dayside Earth](#) ” by [NASA](#) is in the [Public Domain](#)]



A view of Earth shows part of it is in daylight, part in nighttime; Apollo 8. NASA. [” [Half-full Earth](#) ” by NASA is in the [Public Domain](#)]

Understanding the day-night cycle was essential to ancient civilizations as well as indirectly our modern society. The planting of crops or best time to hunt – survival with plenty to eat – was foremost. Today, we take this for granted since the vast majority of us go to a grocery store to choose the already-cultivated food we want, or go to a restaurant to enjoy an already-prepared meal. ⁽¹⁾

Earth's Motions

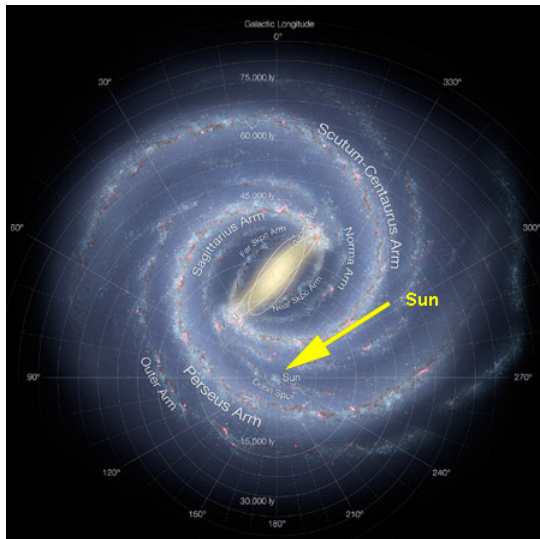


Earth's orbit or revolution around the Sun. ["North season" by Tau'olunga , Wikimedia Commons is in the [Public Domain, CC0](#)]

Our Universe is a Universe of motion. We see and experience evidence of some of the motions, from sunrise to sunset, moonrise and moonset, the seasons, bright planets moving against the background of stars, and even shooting stars — meteors. Earth spins, or rotates, on its axis and it orbits or revolves around the Sun.

Other bodies in our Solar System and other stellar systems undergo such motions. Earth rotates once every 24 hours and revolves around the Sun once every 365.24 days. Mars rotates once every 24 hours 39.5 minutes and revolves around the Sun once every 687 earth days. Jupiter rotates once every 9 hours 48 minutes and revolves around the Sun once every 11.86 earth years.

The Sun is also moving along with the rotating Milky Way galaxy. What is more, the Milky Way is not static; besides rotating, it is also moving through space. It all seems to be a dizzying dance. ⁽¹⁾



An artist's concept of our Milky Way Galaxy, from a bird's-eye view. Note the location of the Sun. ["Milky Way" by NASA/JPL-Caltech/ESO/R. Hurt, Wikimedia Commons is in the [Public Domain](#)]
CC licensed content, Original

- **Authored by:** Florida State College at Jacksonville. **License:** [CC BY: Attribution](#)

This page titled [1.2: Daytime, Nighttime](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by [Lumen Learning](#).