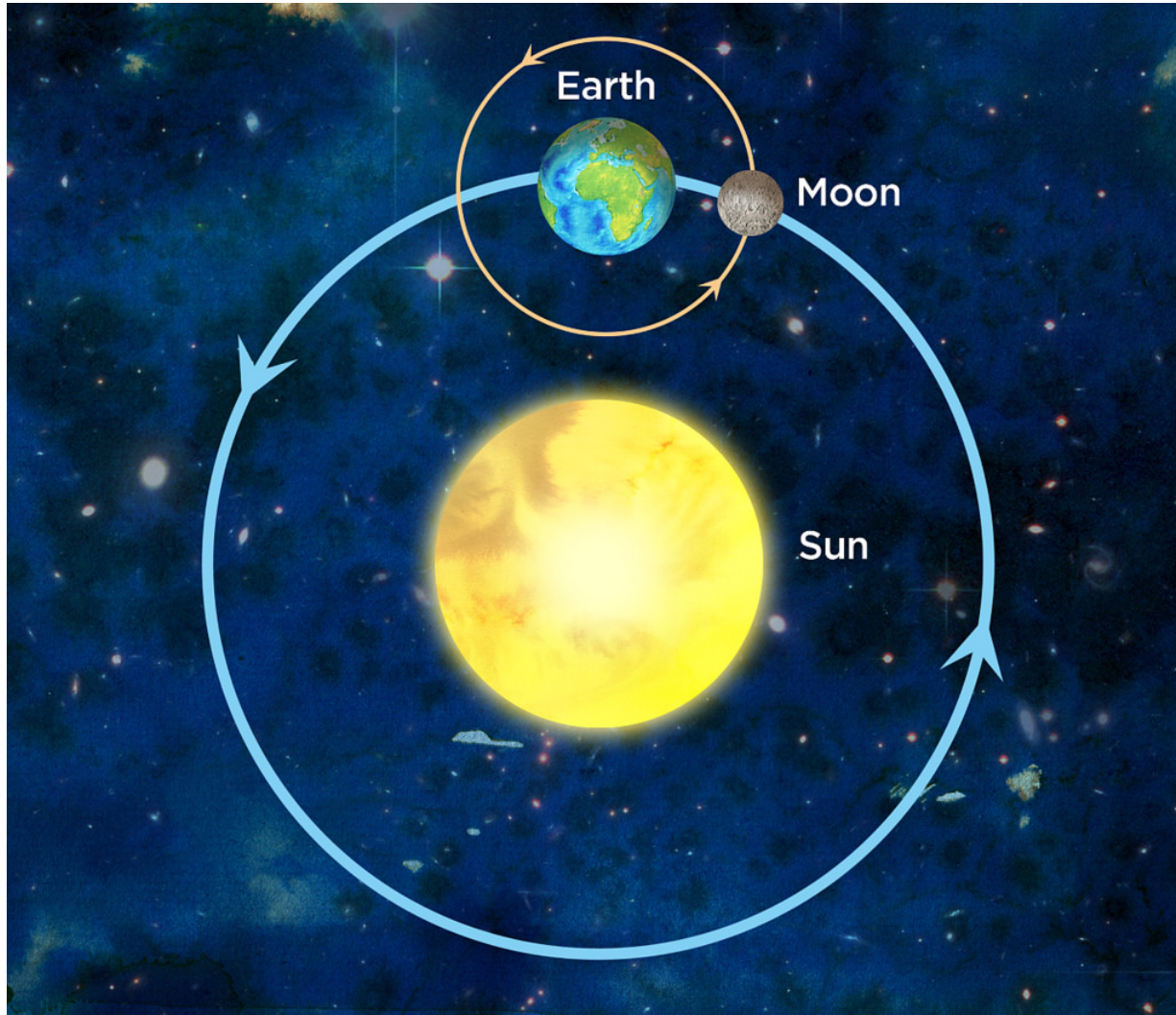


1.4: Moonrise, Moonset

Moonrise, Moonset



As Earth orbits the Sun, the Moon orbits Earth. [“Earth, Moon and Sun system” by [Siyavula Education](#) , flickr commons is licensed under [CC BY 2.0](#)]




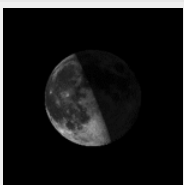
As Earth orbits the Sun, the Moon orbits Earth. It takes about 30 days for one complete phase change (actually $29 \frac{1}{2}$ days). Compare this to how long it takes Earth to orbit the Sun one time: 365.24 days. Consider our word, “month”, with its roots from the term moon. As the Moon orbits Earth, its moonrise and moonset times change each day, as does the phase of the Moon we see.

When you check moonrise time over several days or a period of time, you will notice that the Moon rises later each day. That is because the Moon is orbiting Earth. The difference each day is fairly consistent, but has several variables like your latitude. The time of day that the Moon rises or sets depends on its phase.

If you consider why we see the Moon go through its phases, the time of day when the Moon rises or sets should make sense. The phase of the Moon we see depends on the positions of the Earth, Moon, and Sun relative to each other. So, when the Moon is full, the Earth is between the Moon and Sun; the Sun is setting and the Full Moon is rising. ⁽¹⁾

Moon Phase versus Moonrise and Moonset Times

Moon Phase	USNO Image	Moonrise, occurs at	Moonset, occurs at

Moon Phase	USNO Image	Moonrise, occurs at	Moonset, occurs at
New Moon		Sunrise	Sunset
1 st Quarter Moon		Local Noon	Local Midnight
Full Moon		Sunset	Sunrise
3 rd Quarter Moon		Local Midnight	Local Noon

Moon images from the United States Naval Observatory (USNO) “Complete Sun and Moon Data for One Day” website. **Local Noon** refers to when the Sun crosses the meridian at your location. **Local Midnight** is exactly 12 hours after Local Noon[“Moon images” by United States Naval Observatory are in the [Public Domain](#)]

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