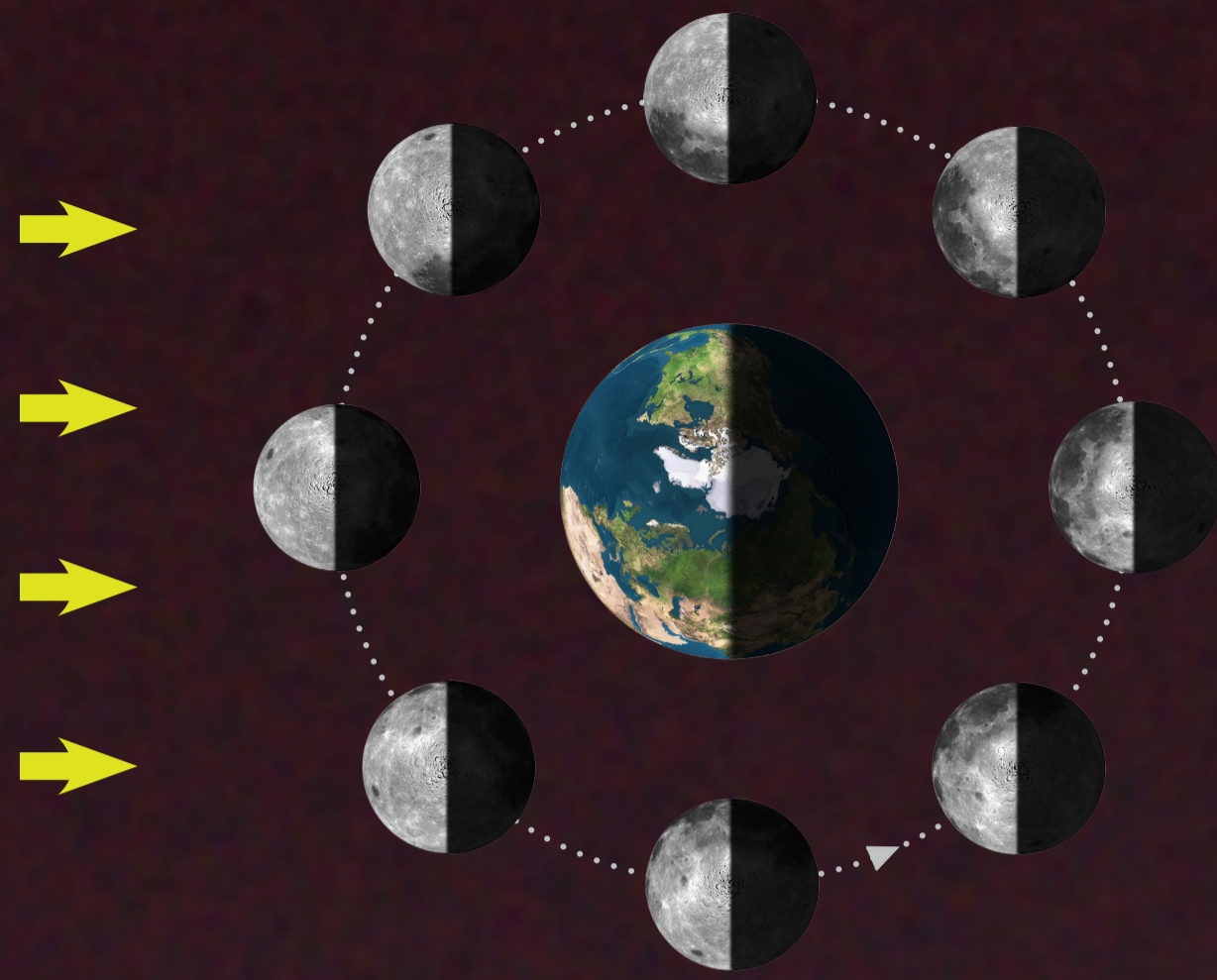


We managed to shoot the Moon



Moon and Earth from space
 imaged by the Mariner 9 spacecraft, showing the daylit sides facing our Sun and night sides on both planetary bodies.

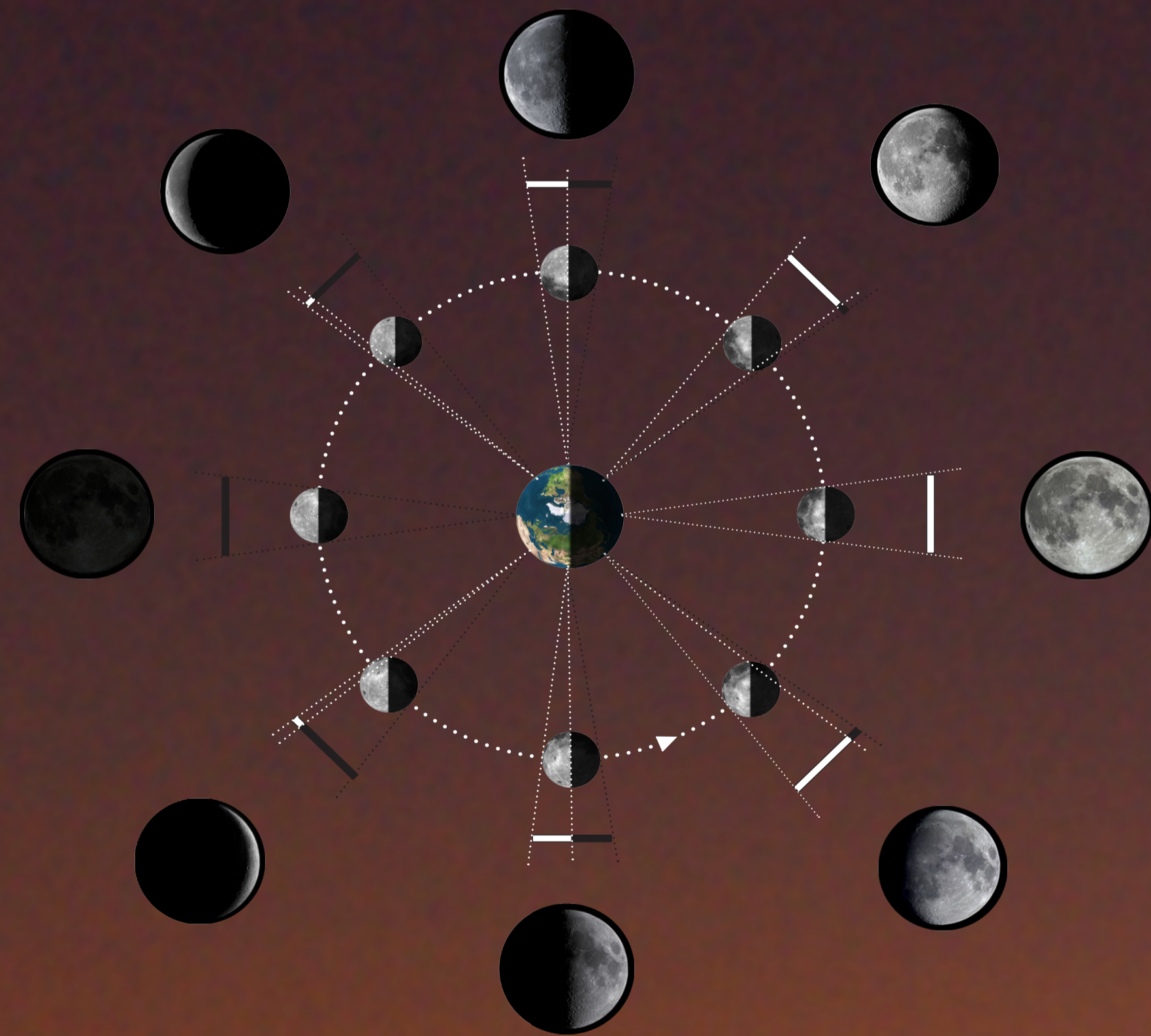
The figure above illustrates the Moon and Earth illuminated by the Sun and represents one trip of the Moon around Earth. The Moon's orbit is seen from far above the North poles.

around Earth. That is why we Earthlings always see the same face of the Moon.

Note the Moon's dark and bright surface features. Our Moon rotates once on its own axis the same time it takes one full orbit

Seen from above onto the North poles, Earth and Moon rotate counterclockwise on their own axes. They also orbit in the same direction.

Figures are not to scale.



Phases

Half of the Moon's body is always bathed in sunlight while it orbits around the Earth. For the above figure, the Sun would be far away to the left. Looking from Earth's surface we can see different parts of the dark and the day side of our Moon, depending on the position in its orbit.

With the Moon positioned exactly between the Sun and Earth, we look directly at the dark side of the Moon. For us, this is New Moon (*most left moon figure*).

Half an orbit later, it is Earth sitting between the Sun and the Moon. Looking at the Moon will show the whole surface bathed in sunlight, it is time for Full Moon (*most right moon figure*).

Between these two extremes, we can see the waxing moon phases, which are easily observed shortly after sunset (between New Moon and Full Moon). The waning phases from Full Moon to New Moon are visible during night times and early in the morning before sunrise.

The illustration above shows the sunlit Moon during a few key positions on its orbit around Earth. The dotted lines follow our line of sight to the Moon and help clarify what parts and how much of the sunlit and night side of the Moon's surface is facing us.

It takes 29.53 days from one New Moon to the next New Moon. Ancient calendars were based on this lunar cycle. Our month's length is a remnant of this division of time.