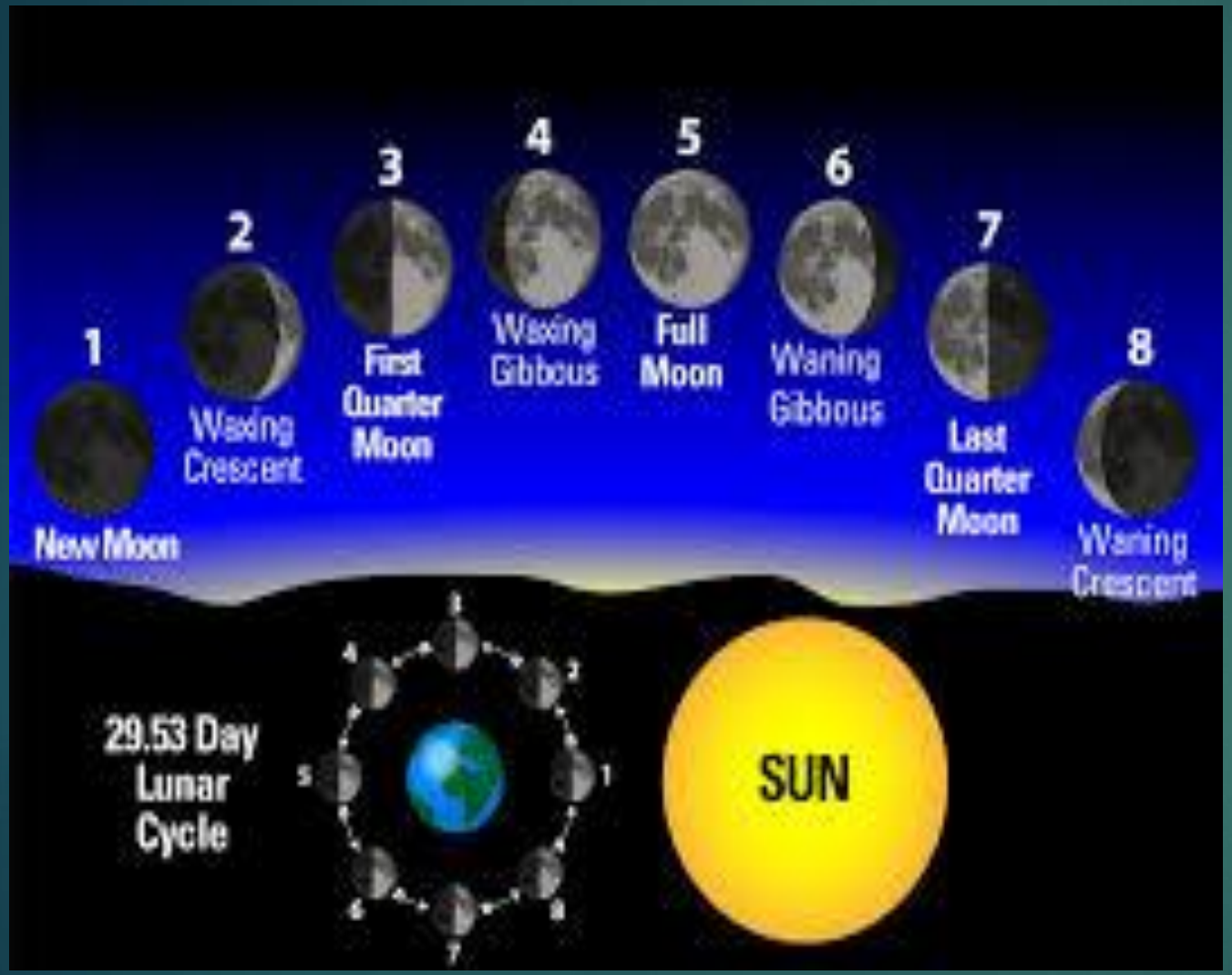


The 8 Phases of the Moon

RELATIVE POSITIONS OF THE SUN, EARTH, AND MOON

ASTRONOMY 7010

BY VALENA SPENCER

The New Moon

- The astronomical **New Moon** sometimes known as the **Dark Moon** occurs at the moment of conjunction in ecliptical longitude with the Sun, when the **Moon** is invisible from the Earth (www.space.com)

Waxing Crescent Moon

- The **waxing** (growing) **crescent Moon** rises before noon, transits the meridian before sunset and sets before midnight.
  The **waxing crescent** phase repeats every 29.531 days – one synodic month.
  The **Moon's** motion around the Earth, with the Sun illuminating only one side of the Earth and **Moon** (www.space.com)

First Quarter Moon

- **First quarter**: The **moon** is 90 degrees away from the sun in the sky and is half-illuminated from our point of view. We call it "**first quarter**" because the **moon** has traveled about a **quarter** of the way around Earth since the new **moon** (www.space.com)

Waxing Gibbous Moon

- A **waxing gibbous moon** appears more than half lighted, but less than full. It rises before sundown and sets somewhere between midnight and dawn (earthsky.org)

The Full Moon

- **The full moon** is **the** lunar phase when **the Moon** appears fully illuminated from Earth's perspective. This occurs when Earth is located between **the** Sun and **the Moon** (more exactly, when **the** ecliptic longitudes of **the** Sun and **Moon** differ by 180°) (www.accuweather.com)

The Waning Gibbous Moon

- The **waning** (shrinking) **gibbous** Moon rises after sunset, transits the meridian after midnight and sets after sunrise.
  The **waning gibbous** phase repeats every 29.531 days – one synodic month. The Moon's motion around the Earth, with the Sun illuminating only one side of the Earth and Moon (astronomy.swin.edu.au)

Third Quarter Moon

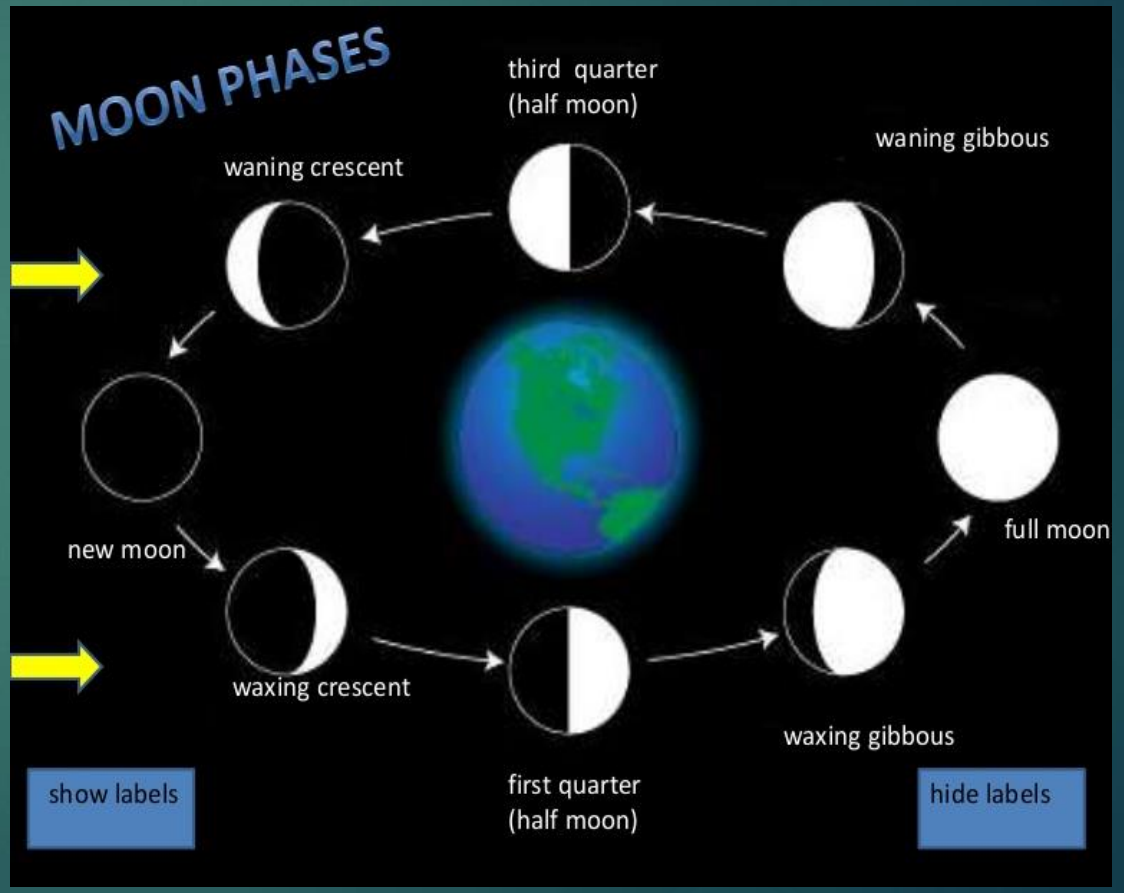
- **Third Quarter Moon** is the last primary phase when the **Moon** has reached the **third**, or last, **quarter** of its orbit around Earth, hence the name. The first primary **Moon** phase is New **Moon**, while the second is First **Quarter Moon**, and the **third** is called Full **Moon** (www.timeanddate.com)

The Waning Crescent Moon

- The **waning** (shrinking) **crescent Moon** rises after midnight, transits the meridian after sunrise and sets after noon.
  The **waning crescent** phase repeats every 29.531 days – one synodic month.
  The **Moon's** motion around the Earth, with the Sun illuminating only one side of the Earth and **Moon** (astronomy.swin.edu.au)

The Phases of the Moon

- Every month Earth's **moon** goes through its **phases**, waning and waxing in its constant transformation from new **moon** to full **moon** and back again. ... In essence, it takes roughly the same amount of time for the **moon** to spin once on its axis as it takes for our celestial companion to complete an orbit around Earth (www.nationalgeographic.com)



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- www.nationalgeographic.com
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- https://www.georgiastandards.org/Georgia-Standards/Documents/Science-Sixth-Grade-Georgia-Standards.pdf
- GPS- S6E2. Obtain, evaluate, and communicate information about the effects of the relative positions of the sun, Earth, and moon. a. Develop and use a model to demonstrate the phases of the moon by showing the relative positions of the sun, Earth, and moon.