

# Earth, Moon, and Sun

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# Glossary

A page number in boldface type indicates the page on which the word is defined in the text.

**asteroid** rocky space object that revolves around the Sun, mostly in a region between Mars and Jupiter (3, 13)

**atmosphere** layer of gases surrounding a planet (2, 3, 6, 7, 13, 14)

**axial tilt** angle at which a planet's axis tilts (11)

**axis** imaginary line that runs from a planet's north pole to its south pole on which the planet rotates (8, 10–14, 16)

**chromosphere** part of the Sun's atmosphere that is above the photosphere (6)

**comet** chunk of ice, rock, and frozen gases (3)

**convection zone** area of the Sun where energy is transferred by flowing gases (7)

**core** center part of the Sun that is the source of the Sun's energy (6, 7)

**corona** outer layer of the Sun's atmosphere (6, 19)

**crater** depression on the surface of a planet or moon caused by a meteorite impact (14, 21)

**day** length of time it takes for a planet to rotate once on its axis (3, 7, 8–12, 14–16, 20)

**eclipse** when one object in space moves into the shadow cast by another object (18, 19)

**electromagnetic spectrum** all of the types of electromagnetic radiation (7)

**ellipse** an elongated circle; oval (10, 11)

**equinox** when the Sun's rays directly strike the equator and both hemispheres have 12 hours of daylight and 12 hours of darkness (12)

**galaxy** system of stars, dust, and gases held together by gravity (4, 6)

**gravity** universal force that attracts, or pulls, all objects that have mass toward one another (5, 16, 17)

**highlands** hilly areas of the Moon that appear as light patches (13, 14)

**hydrosphere** all of Earth's water (2)

**International Date Line** imaginary line passing through the western Pacific Ocean that marks the start of a new day (9)

**latitude** distance north or south of the equator, expressed in degrees (12)

**law of universal gravitation** gravity exists between any two objects with mass, and the strength of gravity depends on the mass of the objects and the distance between them (5)

**light-year** distance that light can travel in one year (4)

**lithosphere** Earth's rigid outer layer (2)

**lunar eclipse** when the Moon moves into Earth's shadow (18, 19)

**maria** smooth, flat plains on the Moon that appear as dark patches (13, 14)

**meteoroid** space rock smaller than an asteroid (3)

**moon** natural satellite that revolves around a planet (3, 13, 20); Earth's Moon (13–20)

**neap tides** high tides that are lower than normal and low tides that are higher than normal due to the Sun and Moon being at a right angle to Earth (17)

**nuclear fusion** reaction in the Sun when four hydrogen atoms fuse together, or combine, to form helium, producing huge amounts of energy (6)

**orbit** path an object takes when revolving around another object (3, 5, 7, 10–19, 21)

**penumbra** lighter part of the shadow cast by Earth or the Moon during an eclipse (18, 19)

**phases** changes in the appearance of the Moon as it orbits Earth (15)

**photosphere** lowest layer of the Sun's atmosphere that gives off light (6)

**planet** large sphere in space that revolves around a star and does not produce its own light (2, 3, 5, 8, 10, 20, 21)

**prominence** huge loop of glowing gas that extends out from the Sun (6)

**radiation zone** area of the Sun where energy is transferred by electromagnetic waves (7)

**revolution** act of moving in a curved path or orbit around another object (3, 10, 11, 14, 15, 17, 20)

**rotation** act of turning or spinning on an axis (7, 8–10, 14, 16)

**satellite** object that revolves around another object (3, 5, 7, 10, 13, 14, 21)

**season** periodic change in climate caused by the change in solar energy due to the axial tilt of Earth as Earth orbits the Sun (11, 12, 17, 20)

**solar eclipse** when Earth moves into the Moon's shadow (19)

**solar energy** energy from the Sun (6, 11)

**solar flare** intense bursts of energy on the Sun that occur when built-up electromagnetic energy is released (7)

**solar system** a star and the planets, moons, and other objects that revolve around it (3–6, 14, 20)

**solar wind** charged particles that escape from the Sun's corona and travel through space (6)

**solstice** two times of year when the Sun's direct rays strike Earth the farthest north or south of the equator (12)

**spectrometer** instrument that splits a star's visible light into a band of colors, used to determine a star's composition (7)

**spring tides** high tides that are higher than normal and low tides that are lower than normal due to the Sun and Moon lining up with Earth (17)

**star** enormous sphere of glowing gases that gives off heat and light (4, 6, 7, 10, 12, 19, 21)

**Sun** name for the star at the center of our solar system (2, 3–12, 14, 15, 17–21)

**sunspot** cooler regions in the Sun's photosphere (7)

**telescope** instrument used to study distant objects; it creates larger images of distant objects (7, 14, 20, 21)

**tidal range** difference between the level of the ocean at high tide and at low tide (16, 17)

**tide** regular rise and fall of the ocean's surface (16, 17)

**time zone** one of the 24 standard zones into which Earth is divided, corresponding to the 24 hours in a day (9)

**umbra** darkest part of the shadow cast by Earth or the Moon during an eclipse (18, 19)

**universe** all of space, including all of the matter and energy within it (4, 5, 21)

**waning** growing smaller in appearance (15)

**waxing** growing larger in appearance (15)

**weight** measurement of the pull of gravity on an object (5)

**year** length of time it takes for a planet to make one complete revolution around the Sun (3, 4, 6, 10–12, 14, 19)