



Aeolian: Pertaining to wind.

Albedo: The ratio of the radiation reflected by a body to the amount incident upon it, often expressed as a percentage, as, the albedo of the Earth is 34%.

Angle of illumination: The angle that a ray of electromagnetic energy makes with the plane of a surface (light from directly overhead is at 90°).

Atmosphere: The body of gases surrounding or comprising any planet or other celestial body, held there by gravity.

Caldera: Large, circular to subcircular depression associated with a volcanic vent. Calderas result from collapse, explosion, or erosion.

Cinder cone: A volcanic, conical hill formed by the accumulation of cinders and other pyroclastic materials; slopes are usually greater than 10°.

Contact: A plane or irregular surface between two types or ages of rock.

Coriolis effect: The acceleration which a body in motion experiences when observed in a rotating frame. This force acts at right angles to the direction of the angular velocity.

Corona: Elliptical, tectonically deformed terrains found on Venus and Miranda.

Crater: Circular depression on a surface.

Cyclonic storm: Atmospheric disturbance with circulation of winds in a counterclockwise direction in the northern hemisphere and in a clockwise direction in the southern hemisphere.

Datum plane: A surface of widespread extent used as a reference for stratigraphic determinations.

Density: Measure of the concentration of matter in a substance; mass per unit volume.

Deposition: The accumulation of material by physical or chemical sedimentation.

Dip: The angle that a surface makes with the horizontal (measured perpendicular to the strike of the surface).

Dune: Mound of fine-grained material formed by wind or water

Eddy: A temporary current, usually formed at a point at which a current passes some obstruction, or between two adjacent currents flowing in opposite directions, or at the edge of a permanent current.

Ejecta: The deposit surrounding an impact crater composed of material (rock fragments, glass) thrown from the crater during its formation.

Electromagnetic spectrum: Energy in the form of radiation, all sharing the same speed of propagation (c - speed of light) but varying in frequency and wavelength.

Embayment: A low area containing rocks that extend into the terrain of other rocks (lap over or up against other rock units).

Equilibrium (cratered surface): A state of "balance", in which craters of a given size are formed and obliterated at the same rate.



Erosion: Process whereby materials are loosened, dissolved, or worn away, and moved from one place to another by natural agencies. Includes weathering, solution, corrosion, and transportation.

Fault: A fracture or zone of fractures along which the sides are displaced relative to one another.

Fault, normal: Fault in which the rocks have been shifted vertically by extensional forces.

Fault, reverse: Fault in which the rocks have been shifted vertically by compressional forces.

Fault, strike-slip: Fault in which the rocks have been shifted horizontally past each other along the strike of the fault.

Force: That which tends to put a stationary body in motion or to change the direction or speed of a moving body.

Fracture: General term for any break in a rock or rock unit due to mechanical failure by stress (includes cracks and joints).

Front (storm): The contact at a planet's surface between two different air masses, commonly cold and warm.

Geologic map: A graphic record of the distribution, nature, and age relations of rock units and structural features (such as faults) in an area.

Geomorphic: Pertaining to the surface morphology (landforms) of a planet.

Graben: An elongate crustal depression bounded by normal faults on its long sides.

Gradation: Geological process involving the weathering, erosion, transportation, and deposition of planetary materials by the agents of wind, water, ice, and gravity.

Hadley cell: A thermally driven unit of atmospheric circulation that extends in both directions from the equator. Air rises at the equator, flows poleward, descends, and then flows back toward the equator.

Ice: Solid formed of volatile materials, particularly water, methane, ammonia, and nitrogen.

Impact: In planetology, the collision of objects ranging in size from tiny micrometeoroids to planetesimals.

Impact cratering: Process involving impact of objects with a planetary surface.

Kinetic energy: Energy of motion; $KE = 1/2 (\text{mass}) (\text{velocity})^2$

Landform: Any feature of a surface having a distinct shape and origin.

Lava: Magma (molten rock or liquid material) that reaches the surface of a planet or satellite.

Leeward: The side located away from the wind; the sheltered side.

Limb: The edge of the apparent disk of a planetary body.

Linea: Elongate markings on a planetary surface.

Lithosphere: The stiff upper layer of a planetary body; the solid outer part of a planet; on Earth, it includes the crust and the upper part of the mantle and is about 100 km thick.

Macula: A dark spot.

Magma: Melted or fluid rock material.

Mare (pl., maria): An area on the moon that appears darker and smoother than its surroundings; composed primarily of basaltic lava flows.

Mass wasting: The movement of rock and soil downslope caused by gravity.

Meteor: A "shooting star" – the streak of light in the sky produced by the transit of a meteoroid through the Earth's atmosphere; also the glowing meteoroid itself. The term "fireball" is sometimes used for a very bright meteor.

Meteorite: Extraterrestrial material which survives to a planetary surface as a recoverable object.



Meteoroid: A small particle in space.

Morphology: The external structure, form, and arrangement of rocks and solid materials in relation to the development of landforms.

Periglacial: Processes, areas, and climates at the immediate margins of former and existing glaciers and ice sheets, and influenced by the cold temperature of the ice.

Pit crater: An impact crater containing a central depression.

Plate tectonics: The theory of planetary dynamics in which the lithosphere is broken into individual plates that are moved by convection of the upper mantle.

Radar: (1) A method, system, or technique of using beamed, reflected, and timed radio waves for detecting, locating, or tracking objects (such as rockets) , for measuring altitude, etc., in any of various activities, such as air traffic control or guidance. (2) The electronic equipment or apparatus used to generate, transmit, receive, and , usually, to display radio scanning or locating waves; a radar set.

Rays: Long, thin deposits of ejecta thrown out radial to young impact craters.

Regio: A large area on a planetary surface having distinctive albedo markings.

Rift zone: A belt of strike-slip or normal faults in close proximity to each other.

Rille: Trench or crack-like valleys, up to several hundred kilometers long and 1 to 2 kilometers wide. May be sinuous in form.

Rotation: Turning of a body about an internal axis, as a rotation of Earth.

Saltation: A mode of sediment transport in which the particles are moved progressively forward in a series of short intermittent leaps, jumps, hops, or bounces.

Satellite: An attendant body that revolves about another body, the primary.

Scarp: Cliff produced by tectonic, impact, or erosion processes.

Secondary crater: Crater formed by ejecta thrown from a "primary" crater.

Shield volcano: A volcanic mountain in the shape of a broad, flattened dome.

Sinuuous rille: see *Rille*

Slip face: The steeply sloping surface on the lee side of a dune, standing at or near the angle of repose of loose sand, and advancing downwind by a succession of slides wherever that angle is exceeded.

Strata: layers of rock (singular = stratum)

Stratigraphic column: Diagram that shows the relative ages of units within an area (oldest at the bottom, youngest at the top)

Stratigraphic relations: see *Stratigraphy*

Stratigraphy: Science of rock strata; concerned with the original succession and age relations of rock strata as well as their form, distribution and composition.

Strike: The azimuth or trend taken by a rock layer or structural surface.

Superposition (principle of): The principle that, in a series of strata that has not been overturned, the oldest rocks are at the bottom and the youngest are at the top.

Suspension: A mode of sediment transport in which the upward currents in eddies of turbulent flow are capable of supporting the weight of sediment particles and keeping them indefinitely held in the surrounding fluid (air or water).

Tectonic: Refers to deformation of planetary materials, as in faulting of Earth's crust.

Tectonism: Process involving movement of the lithosphere.

Terminator: The line of sunrise or sunset on a planet or satellite.



- Terrain:** A region of a surface sharing common characteristics (as in “mountainous terrain”).
- Terrestrial:** Of or pertaining to Earth or earthlike.
- Tidal heating:** The process of frictional heating of a planetary object by the alternate growth and decay of a tide in its lithosphere.
- Topography:** The general configuration of a surface, including its relief and the position of features.
- Traction:** A mode of sediment transport in which the particles are swept along, on, near, or immediately above and parallel to a bottom surface by rolling, sliding, pushing, or impact of saltating grains.
- Unit:** Three-dimensional body of rock with uniform characteristics and formed within a specific period of time.
- Vertical exaggeration:** The apparent increase in relief as seen in a stereoscopic image.
- Volcanism:** The process by which magma and its associated gases rise into the crust, and are extruded onto the surface and into the atmosphere.
- Vortices:** Revolving motions within fluid flow.
- Wavelength:** The distance between successive wavecrests, or other equivalent points, in a series of harmonic waves.
- Weathering:** Chemical and physical alteration of materials exposed to the environment on or near the surface of a planetary object.
- Wind streak:** Zone where sediments have been preferentially deposited, eroded, or protected from wind erosion. Often form “tails” on the lee side of obstacles.
- Windward:** The side located toward the direction from which the wind is blowing; facing the wind.

