

Glossary

anemometer

Instrument for measuring the speed of the wind.

anticyclone

system of high pressure in which wind blows in a clockwise direction in the Northern Hemisphere and counterclockwise in the Southern Hemisphere.

atmosphere

Gases surrounding the surface of a planet, moon or star.

average

An arithmetic mean.

axis

An imaginary line that passes through the poles of a body, like the Earth, around which it spins or rotates.

barometer

Weather instrument for measuring atmospheric pressure.

Beaufort scale

A scale of wind force that includes a description of the wind, its range of velocity and a classification of the wind from force 0 to force 12.

Charles' Law

States that in relatively low pressure, the density of a gas at constant pressure varies inversely with the absolute temperature of the gas.

climate

The average weather conditions of an area over a long time period.

condensation

The process by which a gas turns into a liquid or solid.

condensation nuclei

Small particles on which molecules of water vapor may condense to form cloud droplets or ice particles.

contour line

A line on a map or chart that connects points of equal elevation. (c.f. isotherm or isobar on a weather map.)

Coriolis Force

A force resulting from the Earth's rotation that causes the motion of particles to deflect towards the right in the Northern Hemisphere and the left in the Southern Hemisphere. The force is weakest around the Equator and is important in the formation of cyclones.

current

The rate at which electric charges move through a given area.

cycle

A sequence of changing states that upon completion produces a final state that is identical to the original one.

cyclone

A disturbance in the atmosphere in which winds rotate around a low pressure center; the winds blow counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere; associated with stormy weather.

dew point

The temperature at which moist air becomes saturated and dew forms.

differential

Pertaining to the difference between two or more motions, forces, etc.

Doppler Effect

A change in the wavelength or frequency of electromagnetic radiation due to the relative motion between the observer and the emitting source.

Doppler radar

A weather radar that uses the Doppler Effect to determine whether a storm and/or its components are moving toward or away from the radar.

electromagnetic spectrum

The entire range of wavelengths of electromagnetic radiation; light (the visible spectrum) is one small segment of this much broader spectrum.

elliptical

Shaped like an ellipse or an oval.

El Niño

Unusual warming of the Eastern Pacific, disrupting fishing off the coast of Ecuador and Peru: noticed around Christmas and named El Niño, Spanish for "the Christ child," by local residents. Now known to impact global weather conditions.

equinox

The two days of the year (spring and fall) when day and night are equally long, with the Sun appearing over the equator.

evapotranspiration

The transfer of water from land surfaces into the atmosphere through the processes of evaporation and transpiration.

forecast

Prediction of the weather using principles of physics, computer models and statistical and empirical techniques.

front (warm, cold, stationary, occluded)

The transition zone between two distinct air masses.

Greenhouse Effect (GHE)

The process through which some of the heat radiated from the surface of the Earth is trapped by gases in the atmosphere and re-radiated back to Earth.

groundwater

Water that exists below the surface of the Earth as a result of rain percolating through the ground.

Gulf Stream

The warm, swift ocean current that flows along the East coast of the US.

humidity

A term that refers to the water vapor content in the air.

hydrologic cycle

The water cycle; the movement and exchange of water between the Earth, the oceans and the atmosphere.

hydrosphere

The water on or surrounding the Earth, including the oceans and water in the atmosphere.

hygrometer

An instrument that measures the water vapor content in the air.

infrared (IR)

Heat radiation with a wavelength that is longer than visible light and shorter than microwave and radio waves, in the range of about 0.75 to 1000 micrometers.

inversion

A condition in which air temperature increases with height.

isobar

line connecting points of equal pressure.

isotherm

A line connecting points of equal temperature.

jet stream

A narrow, band of strong westerly winds in the high troposphere that occurs in temperate latitudes; they form the dividing line between warm tropical air masses and cold polar air masses

latitude

The measurement of distance north or south of the Equator of a spherical body such as the Earth. Latitude is measured in degrees, minutes and seconds of arc.

longitude

The measurement of distance east or west of the prime meridian of a spherical body such as the Earth. Longitude is measured in degrees, minutes and seconds of arc.

mesocyclone

A vertical column of cyclonically rotating air within a thunderstorm.

microwave

A form of electromagnetic radiation with a high frequency and long wavelength.

molecules

A collection of atoms held together by chemical forces.

orbit

The path followed by a planet, satellite or star around a more massive body in its gravity induced motion.

poles of rotation

Rotation of a body around its axes, e.g. Earth rotates around the axis formed by its North and South poles.

precipitation

Any form of water particles that fall from the atmosphere and reaches the ground.

pressure

When a force is exerted on a surface, the ratio of this force to the area of the surface.

prism

A solid object made of glass or clear plastic with triangular ends that are equal and parallel that disperses white light into visible light (the colors of the rainbow).

psychrometer

An instrument consisting of a dry bulb and wet bulb thermometer that is used to measure the water vapor content of the air.

radiational

Relating to the transfer of energy in the form of electromagnetic radiation.

radome

A dome-shaped device that houses a radar antenna.

refraction

The bending of a light beam due to variations in atmospheric density.

relative humidity

The ratio of the amount of actual water vapor in the air at a given temperature relative to the maximum amount that could exist at that temperature.

respiration

The process by which living things take in oxygen and use it to produce energy.

revolution

The orbital motion of one object around another.

rotation

The spin of an object around its own axis.

saturation

Where the amount of actual water vapor is at the maximum theoretically possible at a given temperature and atmospheric pressure.

solstice

the longest and shortest days of the year when the Sun appears to “stand still” at its northernmost and southernmost positions as seen from Earth.

spectrum of visible light

The band of colors, in order of increasing wavelength from red to violet that can be seen when white light travels through a diffracting medium such as a prism.

static electricity

The accumulation of positive or negative charges on an object.

temperature

degree of hotness or coldness measured according to a scale on a thermometer.

thermal equilibrium

The state in which two bodies in physical contact with each other have identical temperatures.

topographical

Referring to the relief features or surface configurations of an area.

trace gases

Gases present in the atmosphere in small quantities (compared to nitrogen and oxygen) including water vapor, carbon dioxide, methane and ozone.

transpiration

The process by which moisture is released from leaves and other parts of plants into the atmosphere.

troposphere

The layer of atmosphere closest to Earth, where clouds and weather occur and temperature decreases with increasing altitude.

vortex/vorticity

In meteorology any rotating flow in the atmosphere.

water vapor

Water in its gaseous state.

wavelength

The distance between successive crests and troughs in a wave.

wet-bulb thermometer

A thermometer with a cloth-covered bulb that is used to evaluate relative humidity.

“warning” (as in hurricane or tornado warning, as used by NOAA/NWS)

Conditions are expected in the specified area, usually within 24 hours.

“watch” (as in hurricane or tornado watch, as used by NOAA/NWS) Conditions are possible in the specified area, usually within 36 hours.