



**NOAA Satellite and Information Service
Deep Space Climate Observatory (DSCOVR)
GLOSSARY**

Corona: The outermost layer of the solar atmosphere

Coronal Holes: Variable solar features that can last for weeks to months; they are large, dark areas when the Sun is viewed in X-ray wavelengths, sometimes as large as a quarter of the Sun's surface

Coronal Mass Ejection: An outflow of plasma and particles from or through the outermost layer of the solar atmosphere; CMEs are often, but not always, associated with erupting prominences, disappearing solar filaments, and/or flares

EPIC: Earth Polychromatic Imaging Camera is an imager on DSCOVR that provides global spectral images of the entire sunlit face of Earth.

Faraday Cup: A metal cup designed to catch charged particles; part of the PlasMag instrument on DSCOVR

Geomagnetic Field: The magnetic field in and around the Earth, extending to where it meets the solar wind; this field is important because it deflects most of the solar wind, the charged particles from which would otherwise strip away the ozone layer that protects Earth from harmful ultraviolet radiation

Geomagnetic Storm: Often caused by solar wind shock waves or magnetic field, a geomagnetic storm is a worldwide disturbance of Earth's magnetic field. Geomagnetic storms are a natural hazard forecast by NOAA's Space Weather Prediction Center that can cause communications problems, abruptly increase drag on spacecraft, and cause electric utility blackouts over a wide area.

L1: Lagrangian Point 1 (Lagrange Point 1 or L1) is a neutral gravity point between the sun and Earth, about one million miles from Earth, where DSCOVR is located. At this point, about a hundredth of the distance to the Sun, DSCOVR can maintain its position between the sun and Earth. L1 is a good position from which to monitor the sun, because the constant stream of particles from the sun (the solar wind) reaches L1 about an hour before reaching Earth.

Magnetosphere: The magnetic cavity surrounding a magnetized body, carved out of the passing solar wind by virtue of the magnetic field, which prevents, or at least impedes, the direct entry of the solar wind plasma into the cavity

NISTAR: National Institute of Standards and Technology Advanced Radiometer (NISTAR) is a cavity radiometer on board DSCOVR that measures the absolute spectral irradiance reflected and emitted from the sunlit face of the Earth.

Plasma: A gas that is ionized sufficiently to be a good electrical conductor and be affected by magnetic fields

PlasMag: A comprehensive space weather suite consisting of three parts: (1) a fluxgate vector Magnetometer, (2) a Faraday Cup solar wind positive ion detector and (3) a top-hat electron electrostatic analyzer; the parts work together to measure solar wind velocity distribution and the magnitude and direction of Earth's geomagnetic field

Solar Arrays: Panels that capture and transform sunlight into some other form of energy

Solar Flare: A sudden eruption of energy in the solar atmosphere lasting minutes to hours, from which radiation and particles are emitted

Solar Irradiance: The power of electromagnetic radiation from the sun that reaches Earth's surface

Solar Maximum: The month(s) during a sunspot cycle when the smoothed sunspot number reaches a maximum

Solar Minimum: The month(s) during a sunspot cycle when the smoothed sunspot number reaches a minimum

Solar Storm: Can refer to a solar flare, coronal mass ejection, or geomagnetic storm

Solar Wind: The stream of charged particles and magnetic fields emitted from the sun; solar wind carries with it a sheet of plasma surrounding a stretched, distorted magnetic fold that generates, roughly, from the sun's magnetic equator

Space Weather: Distinct from the terrestrial weather in Earth's atmosphere, space weather refers to conditions, like solar wind, in the solar system and particularly in near-Earth space. Space weather events can cause geomagnetic storms that may cause damage to power grids and satellites, and impact GPS and communications on Earth.

Sunspot Cycle: The approximately 11 year quasi-periodic variation in the sunspot number; the polarity pattern of the magnetic field reverses with each cycle