About The Geosphere

This image represents the **geosphere** throughout the My NASA data website.

What is the Geosphere?

The Geosphere is associated with solid portions of the Earth. It includes the continental and oceanic crust and all other layers of the Earth's interior. This includes all rocks, sediments and soils, surface landforms and the processes that shape the Earth's surface. 94% of the solid Earth is made up of the following elements: oxygen, iron, silicon, and magnesium. Despite its solid nature, the geosphere is a dynamic sphere where the surface is in constant motion. This movement creates continents, oceans, and their landforms through a process called Plate Tectonics.

Features associated with this system can be broken down into a variety of different processes which will be featured in My NASA Data and include:

- Fluvial and Alluvial Processes: Deltas, river channels/canyons, alluvial fans
- Aeolian Processes: Sand dunes and other wind-related landforms
- Tectonic Processes: Folds, faults, mountains
- Volcanic Processes: Volcanoes, lava flows, calderas, volcanic deposits
- Other Processes: Pedosphere (Soil-related), landslides, erosion

The Earth System interacts with the Geosphere in the following ways:

Atmosphere: Dissolved gases from the Atmosphere affect the chemistry of the Geosphere. For example, carbon dioxide dissolved in rainwater produces a weak acid that weathers rock at Earth's surface.

Biosphere: Organisms help form and weather rocks. Organisms in the ocean provide the material that form carbonate rocks at the bottom of the ocean. The roots of plants break up rocks to increase their weathering rates.

Hydrosphere: Water, the universal solvent, is a key agent of change causing chemical and mechanical erosion of the Earth's Geosphere. Eroded materials move down the watershed as water makes its way to the ocean.

Cryosphere: The Cryosphere's glaciers and ice sheets erode the Geosphere's surface as the ice moves slowly across the land, eroding the surface, and then depositing the sediments in other places.