



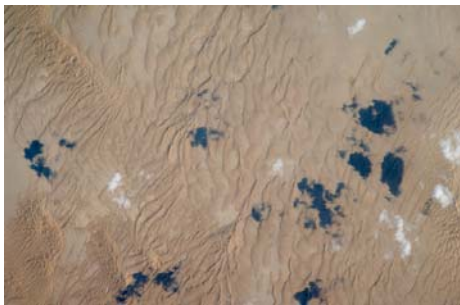
BLUE MARBLE MATCHES

GEOLOGIC PROCESSES & FEATURES

Quick Reference Sheet

1. **AEOLIAN PROCESSES:** Features created by or associated with the effects of wind. A planetary body needs to have an atmosphere in order to have aeolian processes.

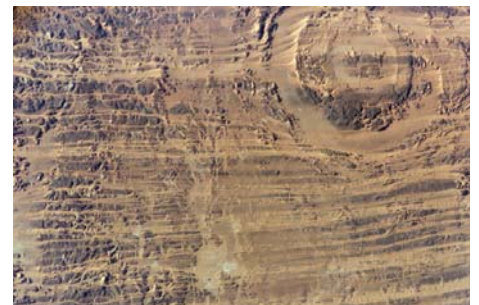
- **Sand Dune:** A mound of sand formed by windblown sand-sized particles. There are different sand dune types or shapes such as crescent, barchan, longitudinal, star, etc.
- **Wind Streak:** Formed when wind blows sand or dust-sized particles off the surface (erosional) or onto the surface (depositional).
- **Yardang:** A sharp ridge or multiple ridges oriented in the same direction formed by sand-sized particles eroding exposed rock.



SAND DUNES



WIND STREAKS



YARDANGS

2. **IMPACT PROCESSES:** Features created by or associated with a meteor striking the surface. The thickness of an atmosphere plays a role in the size and number of impactors that strike the surface. Planetary bodies with active geologic processes can cause impact craters to erode or get filled in.

- **Impact Crater:** A circular depression in the surface formed by the result of a meteor striking the surface at a high velocity.

Note: Sometimes a central peak or uplift is visible in the center of an impact crater. This feature is an exposed set of uplifted rocks that show evidence of fracturing and shock that occurs during impact. Not all craters have this feature.



IMPACT CRATER



IMPACT CRATERS



IMPACT CRATER



3. FLUVIAL PROCESSES: Features created by or associated with flowing water. A planetary body needs to have a certain balance between atmospheric pressure and temperature in order to have water flow on the surface.

- **Channel:** A feature often created by the flow of water. Can vary in size and shape depending on local geology and steepness of topography. In flatter areas they meander into a snake-like shape. Can include the following features: meanders, oxbow lakes (created when a meander is cut off and forms a U-shaped body of water), streamlined islands, levees, bars, and banks.
- **Valley/Drainage Network:** A set of channels formed by water draining downslope creating a network of small channels or tributaries that merge to form progressively larger channels. These features most often have a branch like appearance.
- **Delta:** Formed by the deposition of sediment that builds up where the mouth of a river flows into another body of water.



CHANNEL



VALLEY/DRAINAGE NETWORK



DELTA

4. VOLCANIC PROCESSES: Features created by or associated with volcanic activity. A planetary body needs to have a hot interior in order to have active volcanic processes.

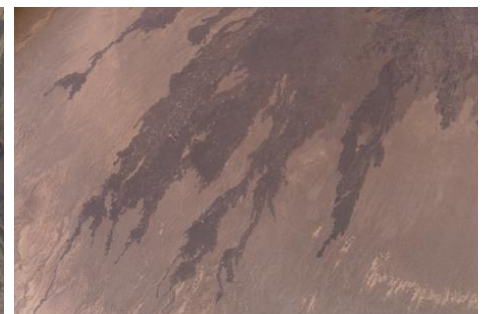
- **Volcano:** A raised structure that includes an opening in the crust of a planet where hot molten rock (magma) and gases escape from below the surface.
- **Central Vent or Caldera:** A circular depression generally at the top of a volcano where magma and gases escape to the surface.
- **Volcanic deposits (lava flows, ash flows):** As hot magma reaches the surface and flows out onto the surface it is called a lava flow. Ash flows or plumes come from more explosive eruptions and include tephra (ash, cinders, or volcanic bombs) and gas released into the atmosphere and/or on the surface.



VOLCANO and ASH PLUME



CENTRAL VENT/CALDERA



LAVA FLOWS