Rilles — Lunar Rilles are long, narrow, depressions formed by lava flows, resembling channels.

Rugged Terra — Rugged terra are mountainous regions of the moon.

Wrinkle Ridges — Wrinkle Ridges are created through compression of tectonic plates within the maria.

Graben — Graben are formed from the stress of two fault lines.

Scarp — A displacement of land beside a fault.

Fault — A fault is a fracture on the surface.
Mare ridges, and the more recent highland scarps

- **Scarp** - A type of fault. It is the displacement of land alongside a fault.
- **Mare Ridge** - The raised edges of a mare impact basin.
- **Trough** - A depression that is characterized by its shallow ridges.
- **Lineament** - A linear expression used to characterize a fault lined valley.
- The wrinkle ridge structures that deform and interrupt the mare basalts are commonly asymmetrical, with the steeper side bounded by a complex scarp composed of multiple overlapping lobate scarp segments that may have rounded crests that make them resemble mare ridges.
- **Lobate scarps** are thrust faults that occur primarily in the Moon's lunar highlands.
• a graben is a depressed block of land bordered by parallel faults.
• Graben is German for ditch.
• A graben is the result of a block of land being downthrown producing a valley with a distinct scarp on each side.
• Graben often occur side-by-side with horsts. Horst and graben structures are indicative of tensional forces and crustal stretching.
• Horsts are parallel blocks that remain between graben, the bounding faults of a horst typically dip away from the center line of the horst.
Also known as a **Dark halo craterlets**

Dark-halo craters are formed when an impact unearths lower albedo material from below the surface, then deposits this darker ejecta around the main crater. This can take place when an area of darker basaltic material, such as that found on the Maria, is later covered by lighter ejecta resulting from more distant impacts in the highlands. This covering obscures the darker material below, which is later excavated by succeeding craters.

While there are no visible dark crater areas in this image of the Apollo 11 landing site, there is a clearly visible example on the south west edge of the Apollo 15 image.
• **Regular Terra**- Smooth rolling hills that mix together with plains materials.

• **Dome Terra**- A volcanic dome whose texture should be a sign of its geologic makeup.

• **Hilly Terra**- Round smooth hills and rounded knolls, found mostly near basins and are usually closely clustered. Has a similar make up and are similarly built up over time.

• **Rugged Terra**- Ranges from large mountains to rough hills, and are made of brecciaed ejecta blankets of various ages.
Mascons are when a crater forms a lumpy topography and a gravitational anomaly forms. The largest are all filled with lava which creates a stronger anomaly than other mascons.

This picture maps the gravitational anomalies on the visible side of the moon as seen by the Lunar Prospector mission.
Mare

- Is the large dark looking section of the moon.
- It is smooth and level.
- It covers about 16% of the moon.
- The mare was created by ancient volcanic eruptions.
- Early astronomers mistook these dark sections of the moon as oceans, and sea’s.
- It is iron rich, and basaltic.
- The Mare is also known as the lunar low lands, because they are about one to two kilometers lower then the Highlands.
• Rough and heavily cratered section of the moons terrain.
• It is about one or two kilometers higher then the lunar Mare, or the lowlands, or the lunar plains.
• Enriched in calcium, aluminum, and mostly feldspar
Depressions are any decrease in elevation from the surrounding area, characterized by the shadow and light on the edges of the depression.

Depressions are created when one or more faults cause an area of land to slip lower than its surrounding area.
Craters are caused by the impact of any of a large number of objects, through up debris that create the light or dark halo and raising the rim around the bowl.

**Simple craters**

**Complex craters**
• Simple:
  – Over time, the rays and ejecta will become less distinguishable from and slowly merge with the adjacent mare. Also, its prominent rim will become more smooth.
• Complex:
  – These are different from simple craters in that they have a central peak. Therefore the aging/erosion progressions are very comparable, again being different only in the peak, that will also erode and become difficult to recognize.
• Primary:
  – The primary crater is the parent crater, directly produced by an impact with an extraterrestrial object.
• Secondary, tertiary, etc:
  – Are produced by matter that was thrown back up and out of the crater by the force of the original impact to form another crater/ additional craters.
A lava terrace is when any depressions such as a crater fills with lava. As the lava cools and withdraws it leaves a shore line type feature. This “shoreline” marks the highest level of the lava.

A regional view of the area

An example of the Bowditch Lava Terrace. Here you can clearly see the shoreline effect.
Regional View of the Bowditch Lava Terrace.
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