

Abulfeda (62 km) is a normal impact crater. Interesting is the crater chain **Catena Abulfeda** of approximately 210 kilometer length which is tangential to the southern crater wall. Most crater chains can be assigned to a big impact (eg Vallis Rheita), this does not apply to the Catena Abulfeda. In both directions there are no big impacts. Most likely the crater chain can be traced back to the broken nucleus of a comet. This is similar to the comet Shoemaker-Levy, whose fragments crashed into the atmosphere of Jupiter during the summer of 1994.

Archimedes (81 km) is another highlight of lunar observation and probably looked very similar to Copernicus at the beginning. The outermost ejecta was later covered by the Imbrium lava flows. The crater floor was flooded by lava which come through fissures and covered the terraced walls and central mountains.

Between the Archimedes Mountains (just south of Archimedes) and the Apennines is a region that is called the "**Apennine bench**". It is a region which probably shows the original crater floor of the Imbrium basin, which was high enough to be not covered by the lava flows.

Alpetragius (40 km) is a normal impact crater, but with an extraordinary Central Mountain, which occupies almost 1/3 of the crater floor. This probably shows volcanic activity of very slow-moving lava after the impact. Throughout the region east of **Alphonsus** and **Arzachel** are some similar craters with unusual central mountains.

Alphonsus, 111 kilometers in diameter, is a distinctive but narrow system of rilles surrounded by some micro volcanoes and pyroclastic ash deposits caused by effusive volcanism. The hillside, which crosses the crater diagonally, consists of ejecta from the Imbrium impact and thus Alphonsus must be older than the Imbrium basin. The whole region shows the marks of the Imbrium impact. These marks are together referred to as the "**Imbrium Sculpture**".

The Vallis Alpes is a long land subsidence of 155 km length that divides the impact wall of the Imbrium basin into the Apennines and the lunar Alps. The base of the land subsidence is filled with lava that comes from a narrow, sinuous rille in the middle of the Vallis Alpes. The rille is only 700 to 1,000 of meters wide.

Descartes (28 km) is a highland region and was the landing site of Apollo 16. It is a very hilly area and even for upland regions of the moon it is an unusual structure. NASA expected to find rock samples of volcanic origin in this area but most of the material which was brought to the ground were "normal" ejection rocks.

Dionysius is with a diameter of 18 kilometers a crater with an exceptional and unique ray system. It is surrounded by a ring of light material and dark rays, the material of the rays comes from deeper layers of the Mare lava. The ray system can be best observed under a high solar illumination.

Heraclitus (85 km) is located just south of the crater Stöffler. It is an unusual, long and stretched formation. Either it is a superposition of several impacts or the region arose from an impact with extremely shallow impact angle. A similar crater is Schiller in the southwestern area of the moon.

Hyginus (11 km) is a "crater" without crater wall and is thought to be one of the few volcanic calderas on the front of the moon. It is centrally located between two rilles – together 200 kilometers long – which are probably also of volcanic origin. A highlight for every lunar observer.

Linne is a crater with a diameter of just 2 km, which is surrounded by a small ring of very bright ejecta - but with a very interesting history. In 1866, quite legitimate lunar observers reported that the crater had disappeared. Then it was spotted again and disappeared again. Linne is a young, normal impact crater and was of course never invisible. The observers were simply mistaken.

Messier (14 km) and **Messier A** (11 km) are probably the most bizarre crater pair on the moon. Messier was created by a grazing impact from the east, Messier A by a "rebound". The two comet-like beams are also spectacular. When the sun is rising, two further rays become visible which run perpendicular into the northern and southern direction. The entire beam system - with a little imagination – has the appearance of a butterfly. Overall, the ray system is similar to all other systems which are created by a shallow impact such as the ray system of Proclus.

Rima Sulpicius Gallus is a 80 kilometer long fracture zone, surrounded by pyroclastic ash deposits, created as the Serenitatis pool slowly lowered under the heavy weight of the large amount of lava.

Theophilus (100 km) is a magnificent and complex crater which is relatively young, it has a very distinct central mountain. Its crater rim rises 4.5 km above the crater floor. Easy to observe are smooth, partially melted ejecta on the crater floor and in the northern surrounding of the crater. In the area towards the crater **Torrichelli** secondary craters are visible.

Triesnecker (26 km) is located in the vicinity of an intersecting rilles system which has a total length of approximately 200 km and extends into the northern part of the **Hyginus** region. Triesnecker and his system of rilles is also a highlight for lunar observers.

Valentine Dome (30 km) is a volcanic intrusion with a height of only 80 meters. Approximately in the middle of the plateau there is a small mountain slope, which merges into a rille and has its origin in the Serenitatis lava.