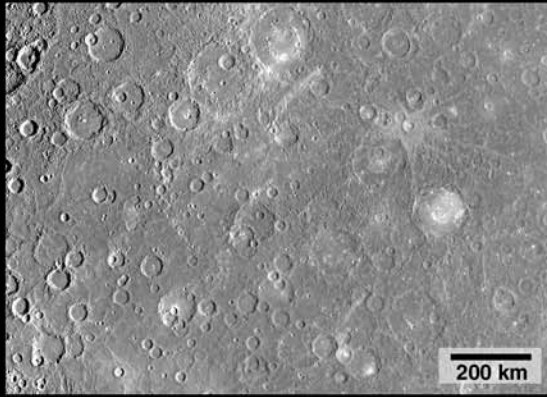


# Mercury's Surface

**The Surface:** The images returned by the Mariner 10 spacecraft revealed a world that resembles our moon: an airless body with craters, multi-ring basins, and lava flows. The most densely cratered surfaces are not as heavily cratered as the lunar highlands implying Mercury has experienced early resurfacing to a greater extent than the Moon.



**Intercrater Plains:** Much of the heavily cratered terrain has been largely buried by the intercrater plains, gently rolling terrain that has obscured the earliest cratering record, although some large multi-ring basins are partially preserved. The origin of the intercrater plains is unclear and has been proposed to be basin derived ejecta or widespread volcanic resurfacing. (Image Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington)



**Volcanism:** Plains material are generally thought to have a volcanic origin but little is known about volcanism on Mercury. The improved resolution of the images returned by MESSENGER has revealed volcanic features, like this volcano, making the interpretation of a volcanic origin more likely. (Image Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington)



**Caloris Basin:** The largest impact basin on Mercury is the Caloris basin. Only half of the basin was illuminated when Mariner 10 imaged the surface. MESSENGER has imaged the entire basin providing an estimate of 1550 kilometers (about 960 miles) for the diameter making it one of the biggest impact basins in the solar system. The seismic waves produced from the Caloris impact produced a region of chaotic terrain on the other side of the planet. (Image Credit: NASA)



**Smooth Plains:** Sometime shortly after the Caloris impact flood lavas formed smooth plains. These younger plains cover about 40% of the surface and are observed within and around the Caloris basin and can be seen filling craters. (Image Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington)