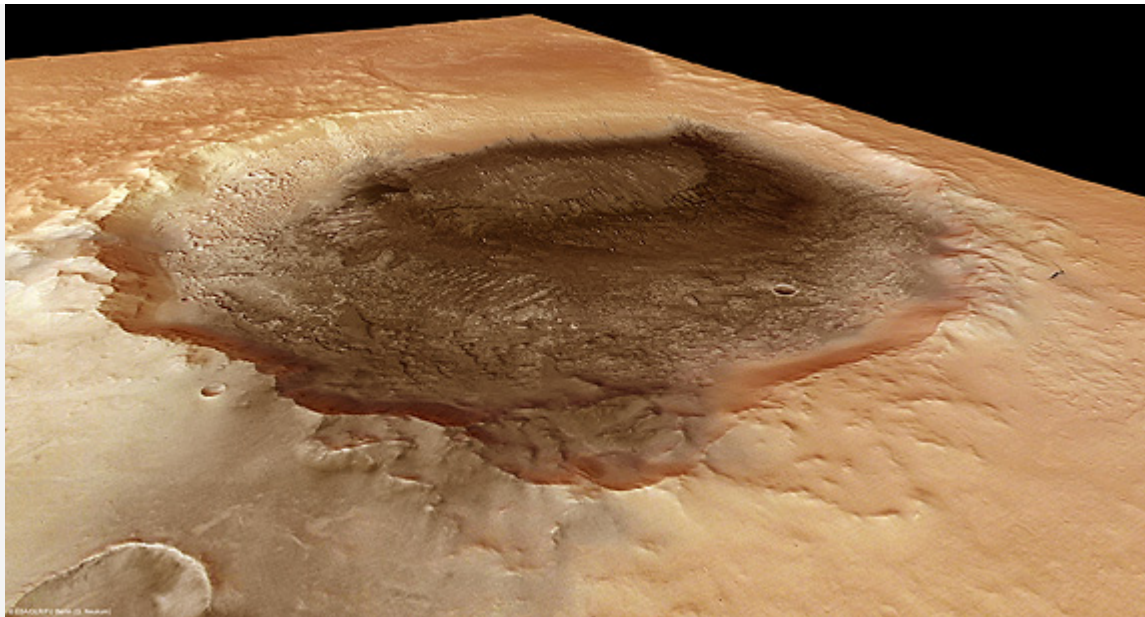


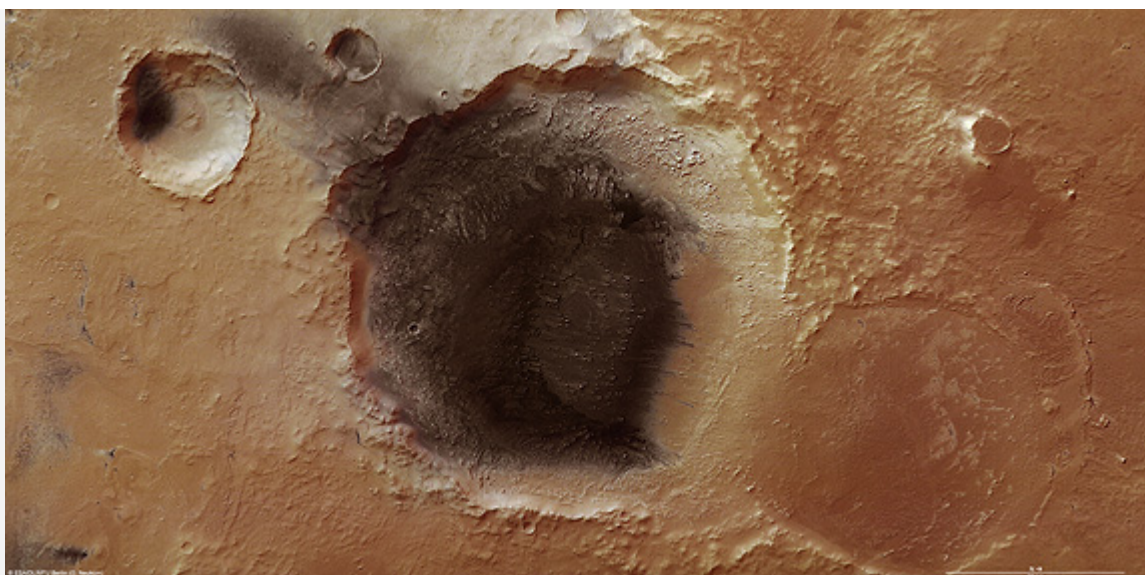
News Archive 2010

Volcanic ash in Meridiani Planum

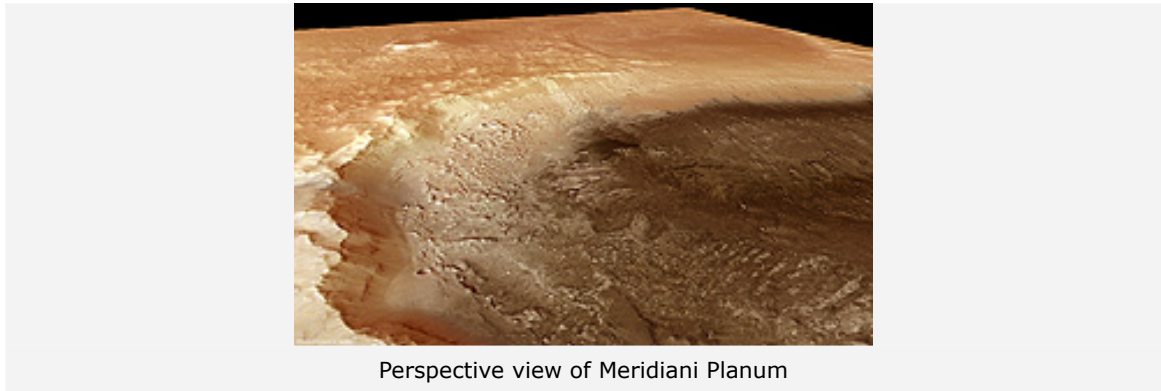
12 May 2010



Perspective view of Meridiani Planum



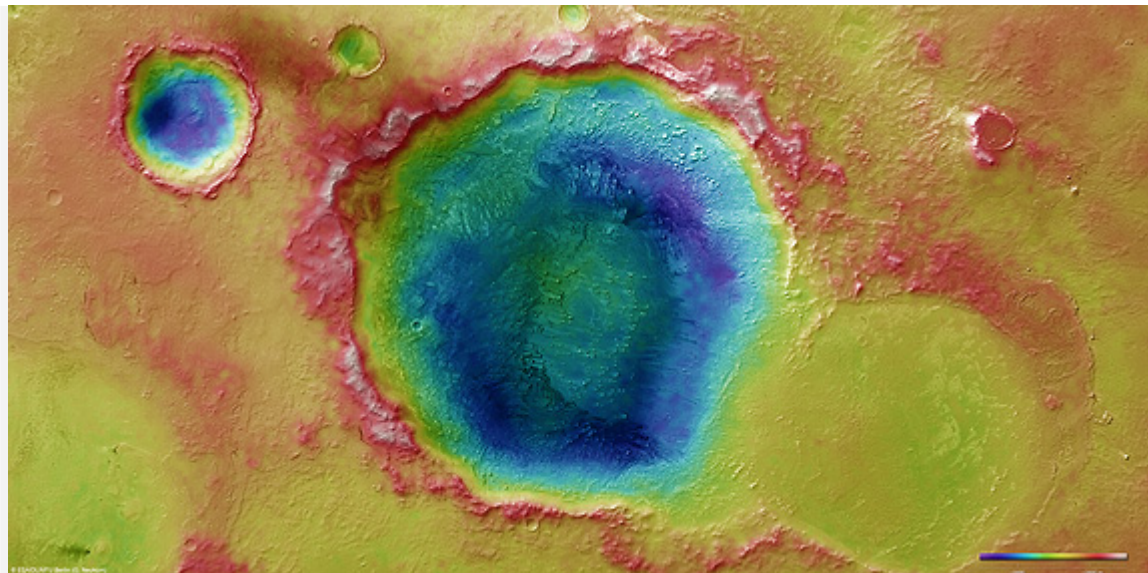
Volcanic ash deposits in Meridiani Planum



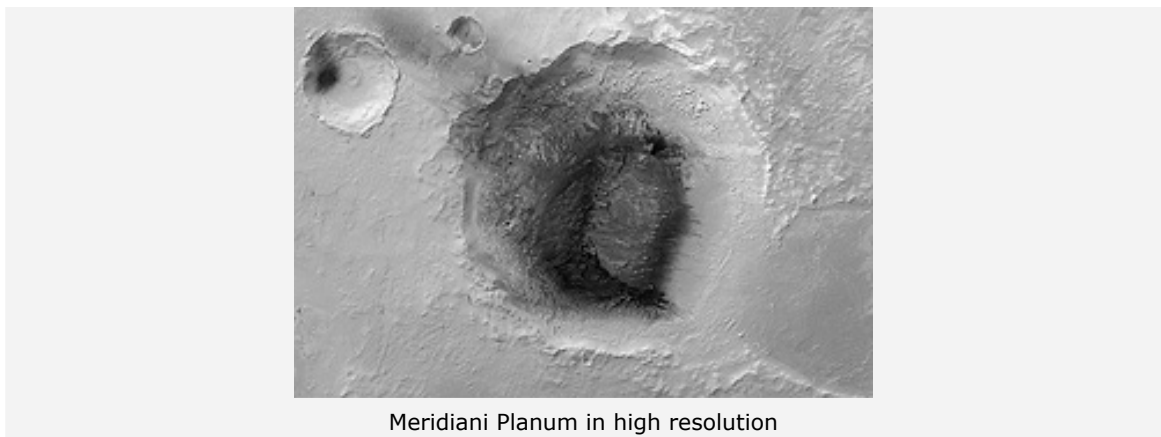
Perspective view of Meridiani Planum

Deposits of volcanic ash colour this view of the Meridiani Planum, captured by High-Resolution Stereo Camera on the Mars Express orbiter operated by the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR). The images give clues on the prevailing wind direction in this region of Mars.

Meridiani Planum, a plain at the northern edge of the Southern Highlands of Mars, is located half-way between the volcanic Tharsis Region to the west and the low-lying Hellas Planitia impact basin to the southeast. Seen through a telescope, Meridiani Planum is a striking, dark feature, close to the martian equator.



Elevation of the Meridiani

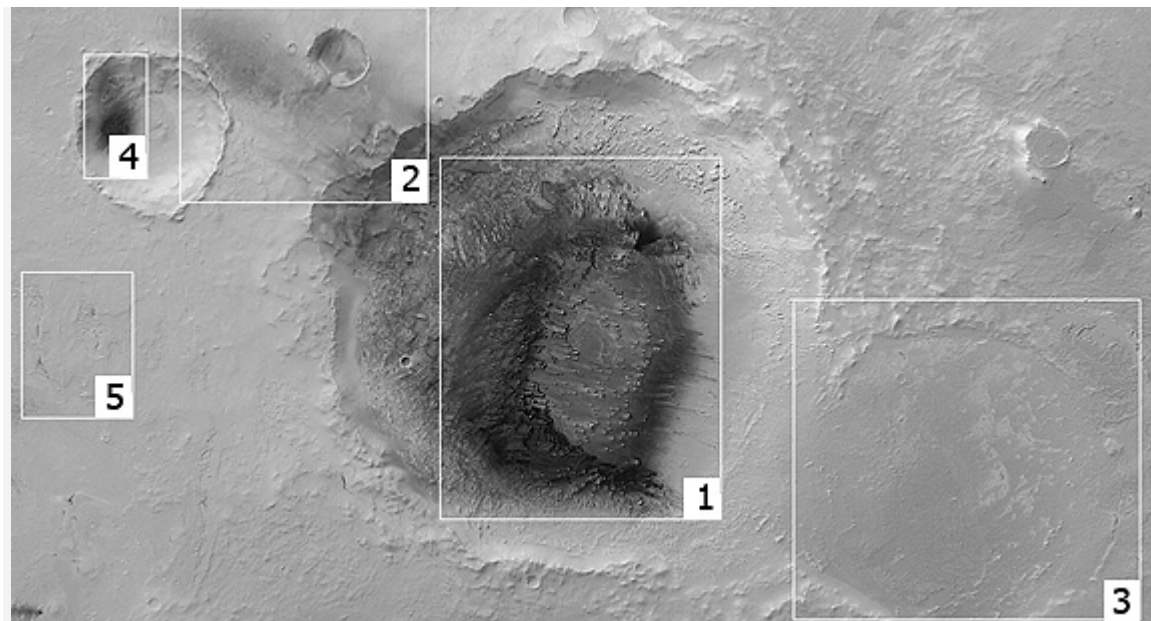


Meridiani Planum in high resolution

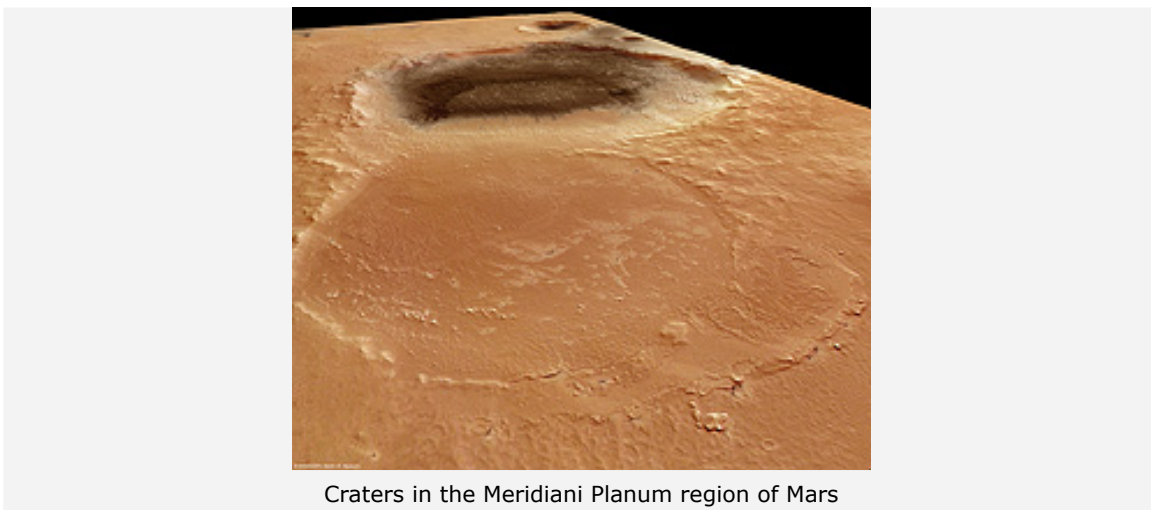
Meridiani Planum spans 127 x 63 kilometres, equivalent to an area of roughly 8000 square kilometres, about the size of Cyprus. It was chosen as a central reference point for Mars' geographical coordinate

system. The martian Prime Meridian, the equivalent of the Prime Meridian on Earth (Greenwich, UK), has been set to run through this region.

The High-Resolution Stereo Camera (HRSC) on the European Space Agency's Mars Express orbiter acquired this image on 1 September 2005 during orbit 2097, at a resolution of about 13 metres per pixel.



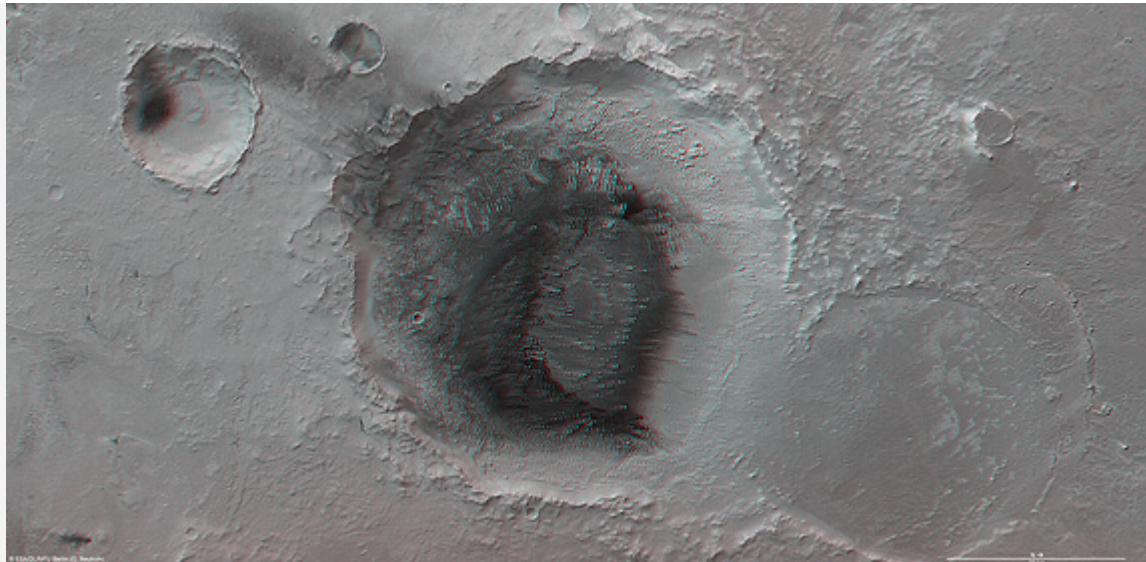
Features in the Meridiani Planum region of Mars



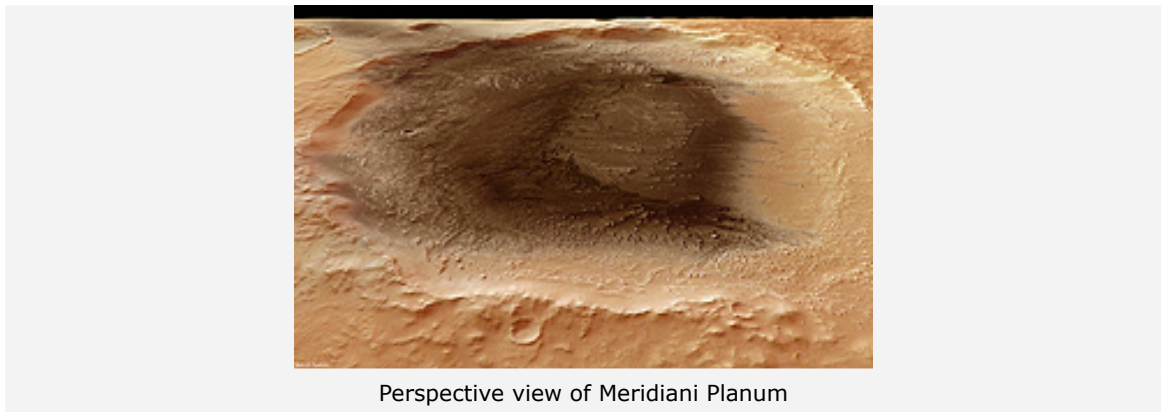
Craters in the Meridiani Planum region of Mars

In the centre of the image, the floor of an impact crater almost 50 kilometres wide is covered in dark material. It resembles volcanic ash, which is predominantly composed of minerals such as pyroxene and olivine. Small mounds, probably composed of more resistant material, are visible protruding through the dark material. The softer material around them has been eroded and blown out of the crater by northeasterly winds and now forms dark streaks on the surroundings.

An impact crater to the upper left, just 15 kilometres wide, exhibits the same dark material on its southwestern edge. It is likely that this material was blown in to the smaller crater from the larger one. The nearly black structures are almost certainly dunes, composed of volcanic-ash rich sediments. In contrast, the 34-kilometre-wide impact crater to the lower right of the image is filled largely with light material.

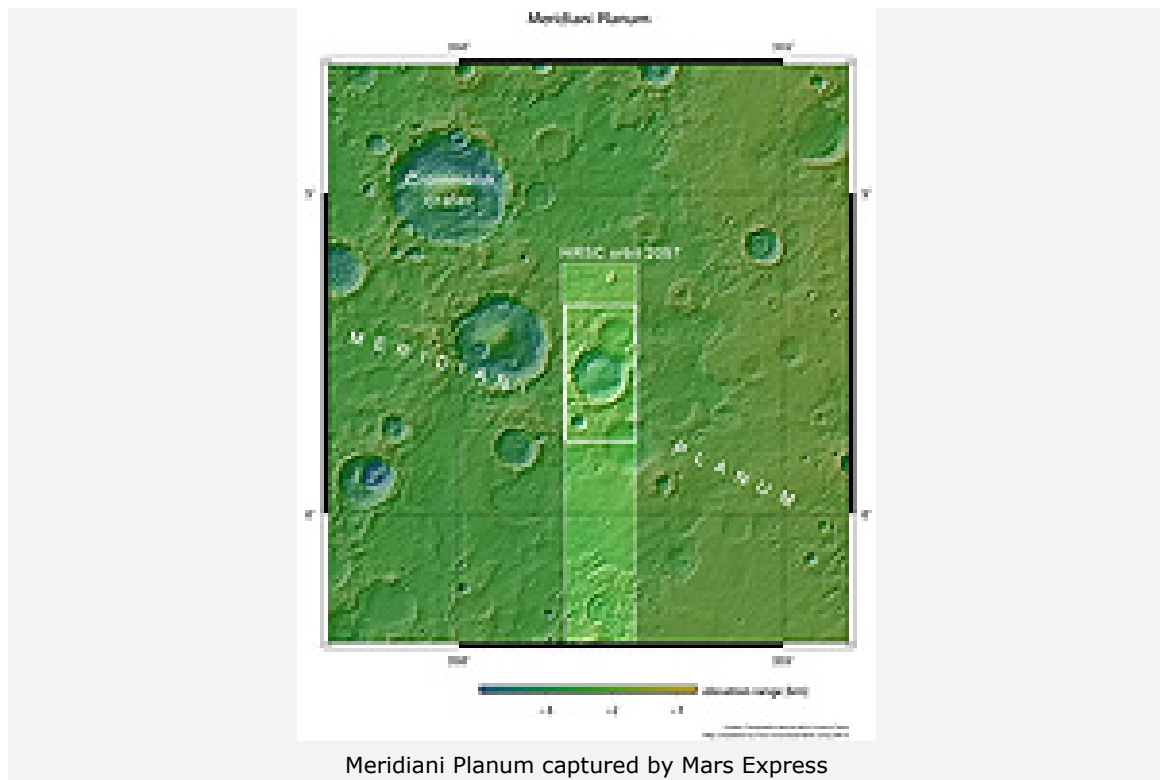


Meridiani Planum in 3D



Perspective view of Meridiani Planum

The southern area, to the left of the image below the smaller crater, exhibits dark features. Located on the lee side of ridges, these are probably similar deposits of ash-rich material, again blown out of the crater.



The High Resolution Stereo Camera (HRSC) experiment on the European Space Agency's Mars Express mission is led by the Principal Investigator (PI) Prof. Dr Gerhard Neukum, who was also responsible for the technical design of the camera. The science team of the experiment consists of 45 Co-Investigators from 32 institutions and 10 nations. The camera was developed at the German Aerospace Center (DLR) under the leadership of the PI, G. Neukum, and built in cooperation with industrial partners (EADS Astrium, Lewicki Microelectronic GmbH and Jena-Optronik GmbH). The experiment on Mars Express is operated by the DLR Institute of Planetary Research, through ESA/ESOC. The systematic processing of the HRSC image data is carried out at DLR. The scenes shown here were processed by the PI-group at the Institute for Geosciences of the Freie Universität Berlin in cooperation with the DLR Institute of Planetary Research, Berlin.

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