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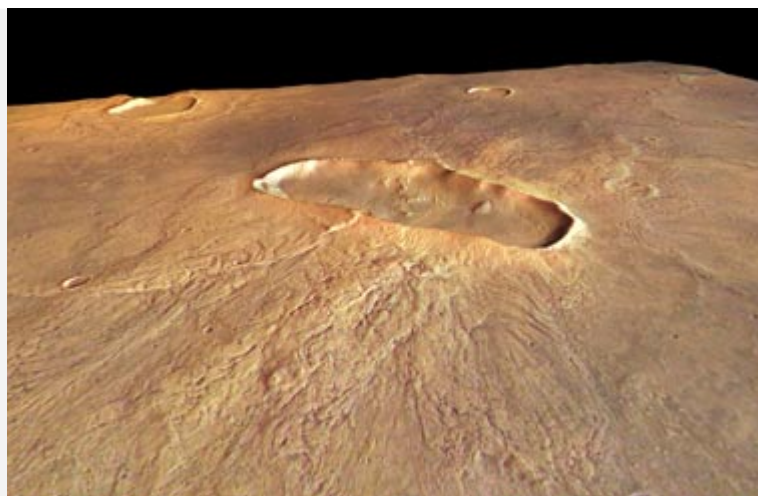
'Butterfly' impact crater in Hesperia Planum

10 January 2006

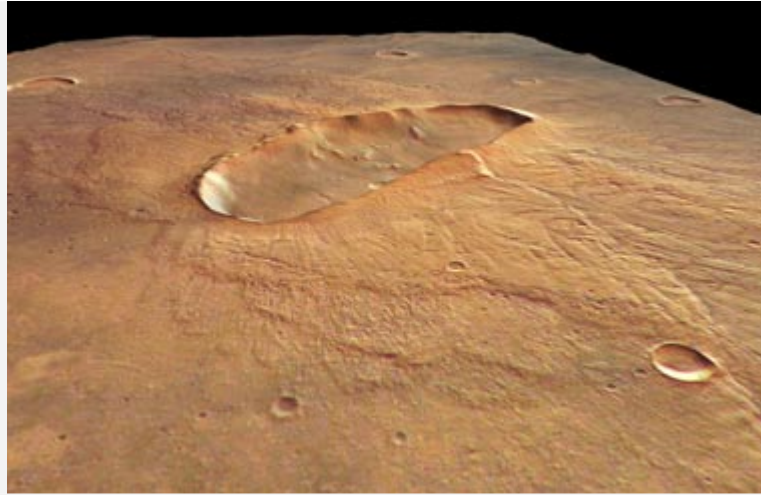


Colour view of 'butterfly'-shaped crater

These images, taken by the High Resolution Stereo Camera (HRSC) onboard the European Space Agency (ESA) Mars Express spacecraft, show a large elliptical impact crater in the Hesperia Planum region of Mars. The HRSC is operated by the German Aerospace Centre (DLR).



Close-up perspective view of 'butterfly' crater - looking north



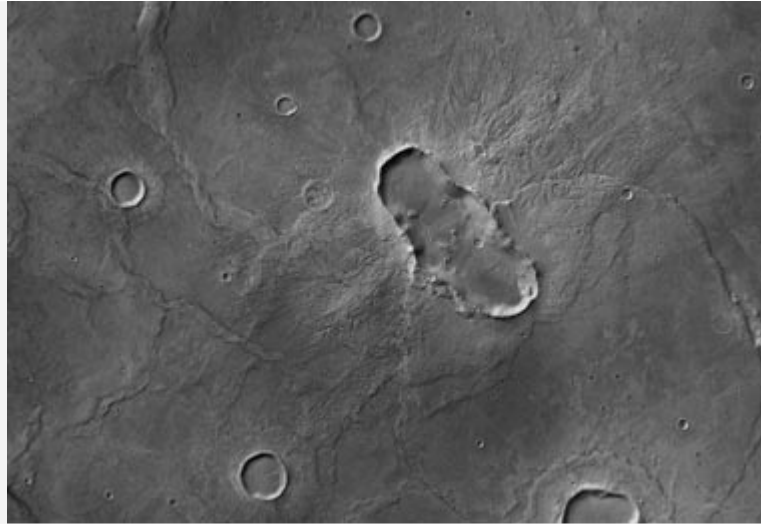
Perspective colour view of the 'butterfly' crater

A large elliptical impact crater is visible within the scene, measuring approximately 24.4 km long, 11.2 km wide and reaching a maximum depth of approximately 650 metres below the surrounding plains.

The HRSC obtained these images during orbit 368 with a ground resolution of approximately 16.7 metres per pixel. The scenes show the region of Hesperia Planum, at approximately 35.3° South and 118.7° East.



'Butterfly' crater - 3D image



'Butterfly' crater - Black and white view

Ejecta from this impact can be seen extending away from the crater, including two prominent lobes of material north-west and south-east of the crater.

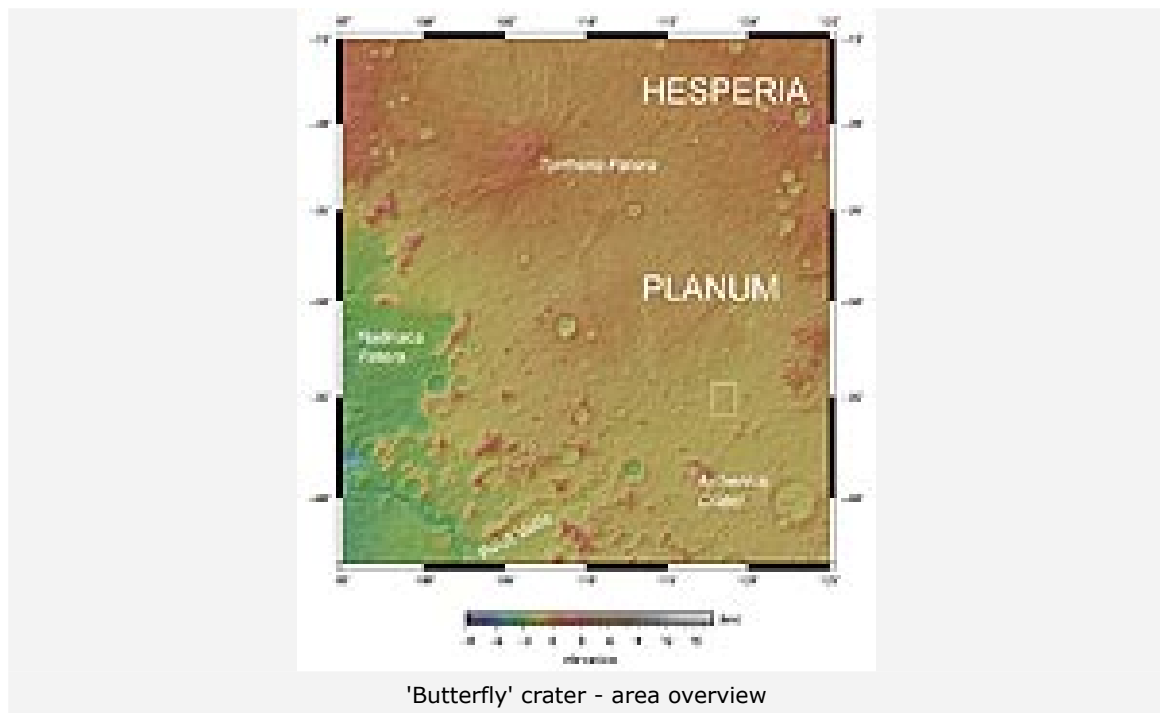
The large circular feature, partly cut off by the border of the image, has a diameter of roughly 45 km. This appears to be an impact crater that was subsequently resurfaced by lava flows, preserving the outline of the underlying crater. The curving features visible in the north of the image, known as 'wrinkle ridges', are caused by compressional tectonics.



'Butterfly' crater - perspective view

While the majority of impact craters are relatively circular, the elliptical shape of this impact crater suggests a very low impact angle (less than 10 degrees).

The long axis of the impact crater is viewed as the impacting direction of the projectile. Similar elliptical craters are observed elsewhere on Mars, as well as on our Moon.



The colour scenes have been derived from the three HRSC-colour channels and the nadir channel. The perspective views have been calculated from the digital terrain model derived from the stereo channels.

The 3D anaglyph image was calculated from the nadir and one stereo channel. Image resolution has been decreased for use on the internet.

The High Resolution Stereo Camera (HRSC) on ESA's Mars Express mission was developed by the German Aerospace Center (DLR) and built in cooperation with industrial partners (EADS Astrium, Lewicki Microelectronic GmbH and Jena-Optronik GmbH). The HRSC experiment on Mars Express is led by the Principal Investigator (PI) Prof. Dr Gerhard Neukum. The science team of the experiment consists of 45 Co-Investigators from 32 institutions and 10 nations.

The experiment on Mars Express is operated by DLR's Institute of Planetary Research. The systematic processing of the HRSC image data is carried out at DLR and scene processing is carried out by the PI-group at the Institute for Geosciences of the Freie Universität Berlin in cooperation with DLR's Institute of Planetary Research, Berlin.

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