

News Archive 2008

River delta in Nepenthes Mensae

25 April 2008



Perspective view of Nepenthes Mensae



False colour view of the southwest section of Nepenthes Mensae

The DLR-operated High Resolution Stereo Camera on board ESA's Mars Express orbiter imaged the region of Nepenthes Mensae, a river delta on Mars, on 22 January 2008. The region is located in the eastern hemisphere of Mars, close to the boundary between the northern lowlands and the southern highlands.

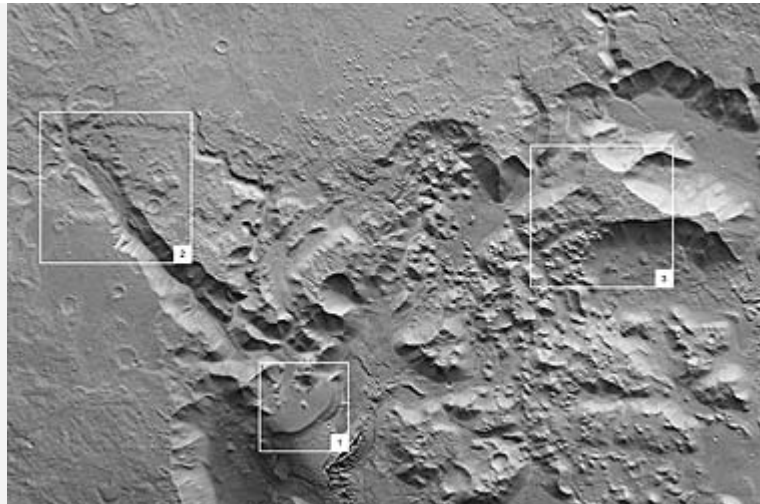


A river delta in Nepenthes Mensae

The data was acquired in the region lying at approximately 3° north and 121° east with a ground resolution of 15 metres per pixel.

The southern part of the image shows a structure reminiscent of a river delta on Earth whose material was eroded from a valley, about 30 km long and up to 1000 m deep. This formed a fan-shaped deposit at the mouth of the valley. The rim of the deposit stands roughly 300 m above the floor of the depression.

The resemblance of the structure to river deltas on Earth suggests that it was formed by a similar mechanism. Scientists believe that sediment transported by water was deposited as the flow of the water slowed down where the channel widened and met the mouth of the river.



HRSC overview image of Nepenthes Mensae

The pictures show that the region was affected by two episodes of flooding. The first left a cone-shaped deposit, reaching far out into the lowlands. The second episode formed the fan with the distinct margin. This margin could indicate the location where sediments flowed into a standing body of water or ice.



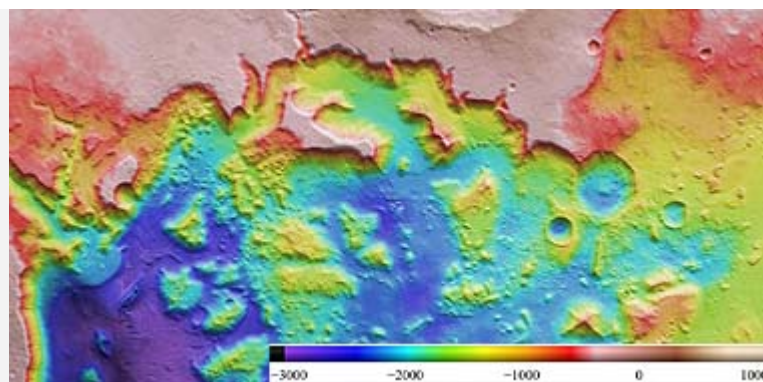
Nepenthes Mensae



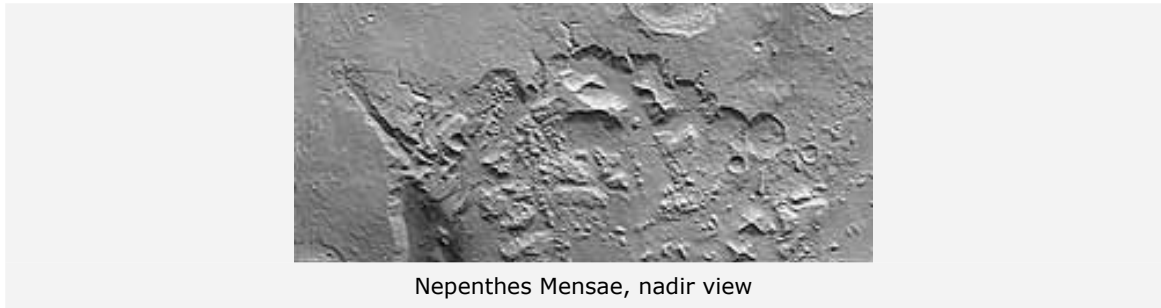
Delta landscape in Nepenthes Mensae

Numerous hills and flat-topped mountains visible in the central part of the depression are remnants of the material that was present in the area. The material was then eroded forming the depression, leaving behind the elevations visible today.

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.

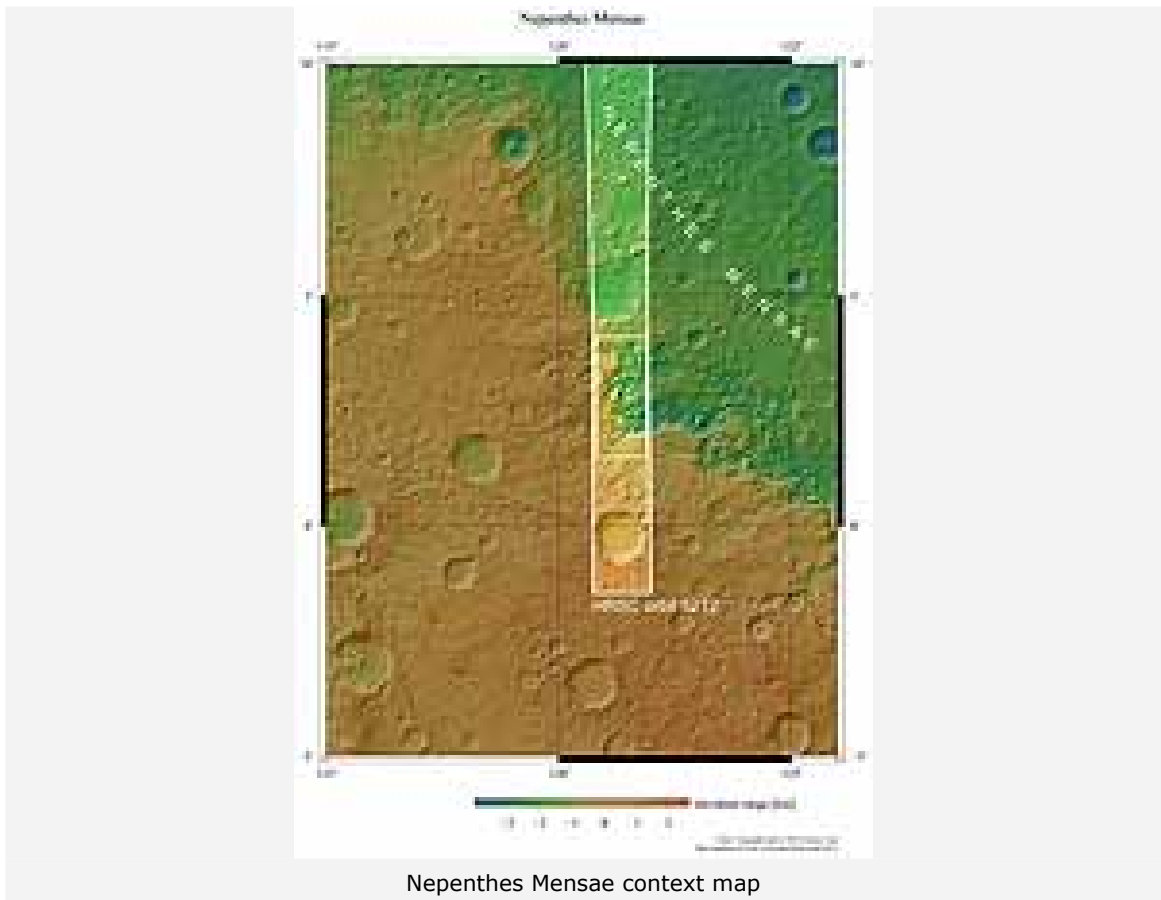


False-colour nadir view of Nepenthes Mensae



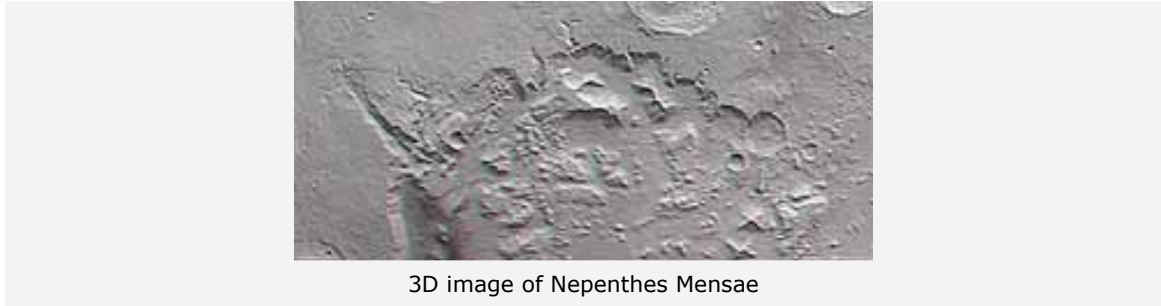
The anaglyph (3D) image was calculated from the nadir and one stereo channel.

The black and white high-resolution images were derived from the nadir channel which provides the highest detail of all channels.



The High Resolution Stereo Camera (HRSC) experiment on the ESA Mars Express Mission is led by the Principal Investigator (PI) Prof. Dr Gerhard Neukum who also designed the camera technically.

The science team for 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.



3D image of Nepenthes Mensae

The scenes shown here were processed by the PI-group at the Institute for Geosciences of the Freie Universitaet Berlin in cooperation with the German Aerospace Center (DLR), Institute of Planetary Research, Berlin.

Contact

Henning Krause

German Aerospace Center
Corporate Communications
Tel: +49 2203 601-2502
Fax: +49 2203 601-3249
E-Mail: henning.krause@dlr.de

Prof.Dr. Ralf Jaumann

German Aerospace Center
Institute of Planetary Research, Planetary Geology
Tel: +49 30 67055-400
Fax: +49 30 67055-402
E-Mail: Ralf.Jaumann@dlr.de

Ernst Hauber

German Aerospace Center
Institute of Planetary Research, Planetary Geology
Tel: +49 30 67055-325
E-Mail: Ernst.Hauber@dlr.de

Contact details for image and video enquiries as well as information regarding DLR's terms of use can be found on the DLR portal imprint.