

**News Archive 2008**

**The Euminedes Dorsum mountains on Mars**

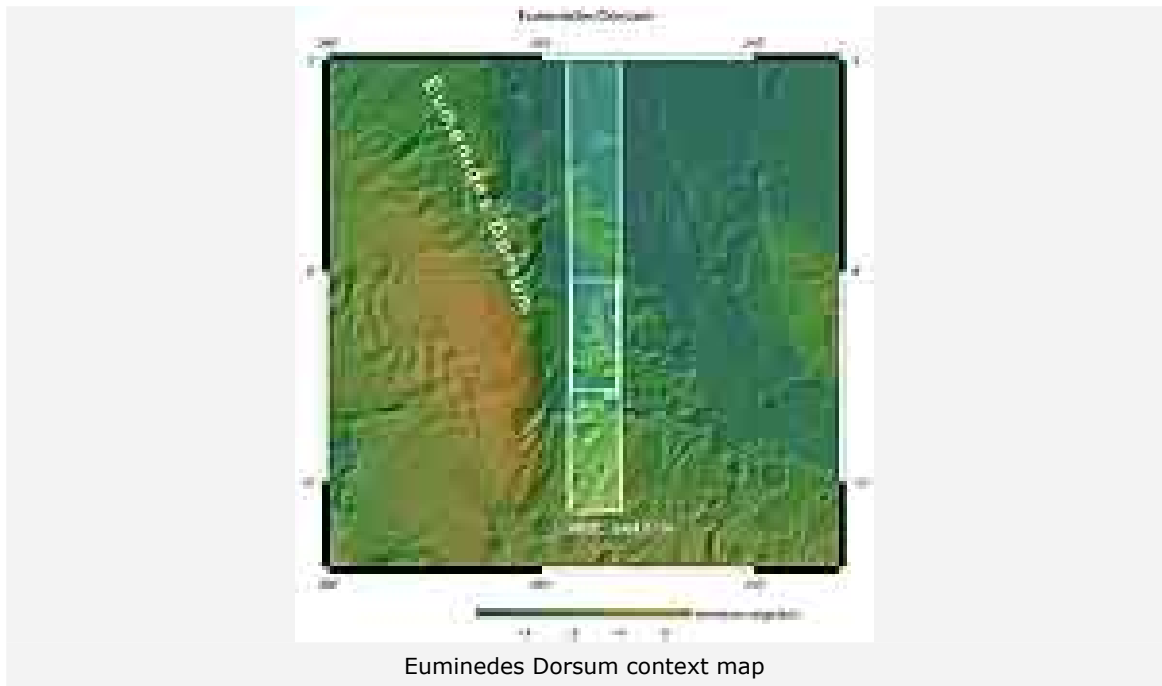
*28 November 2008*



Perspective view on Euminedes Dorsum

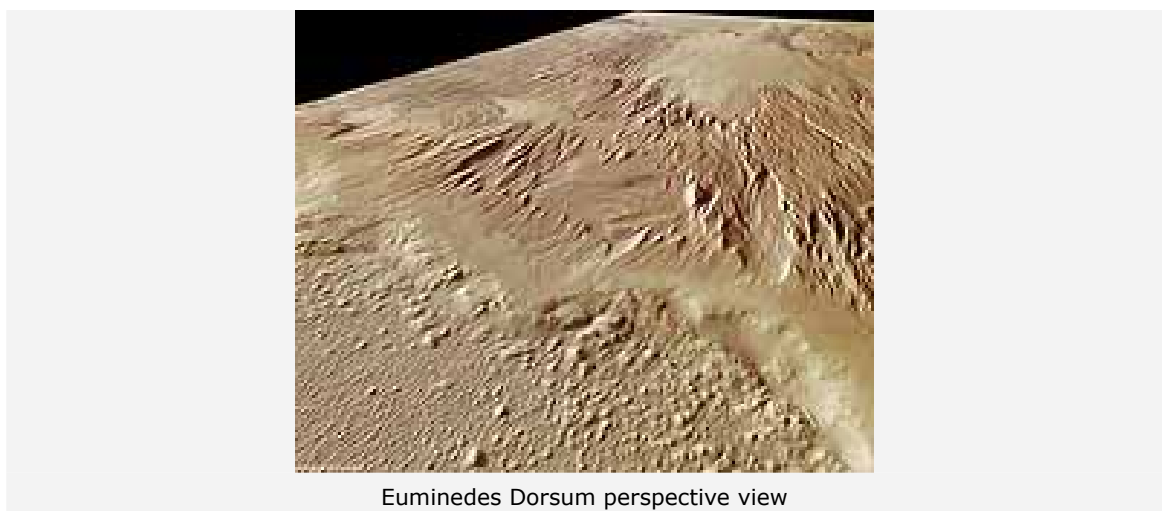
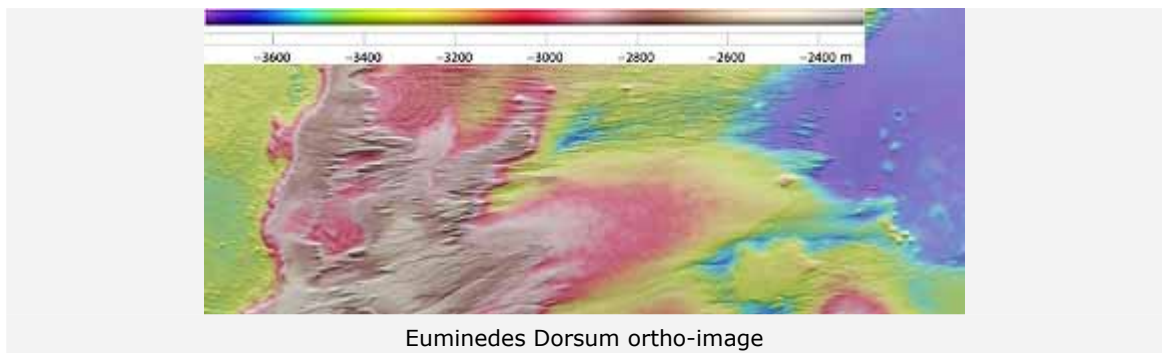


Euminedes Dorsum



The DLR-operated High-Resolution Stereo Camera (HRSC) on board ESA's Mars Express imaged the Eumenedes Dorsum mountains on the Red Planet. Eumenedes Dorsum lies at approximately 2° south and 206° east. The images, taken on 26 December 2007, have a ground resolution of about 13 m/pixel. They cover an area of about 12 000 square km.

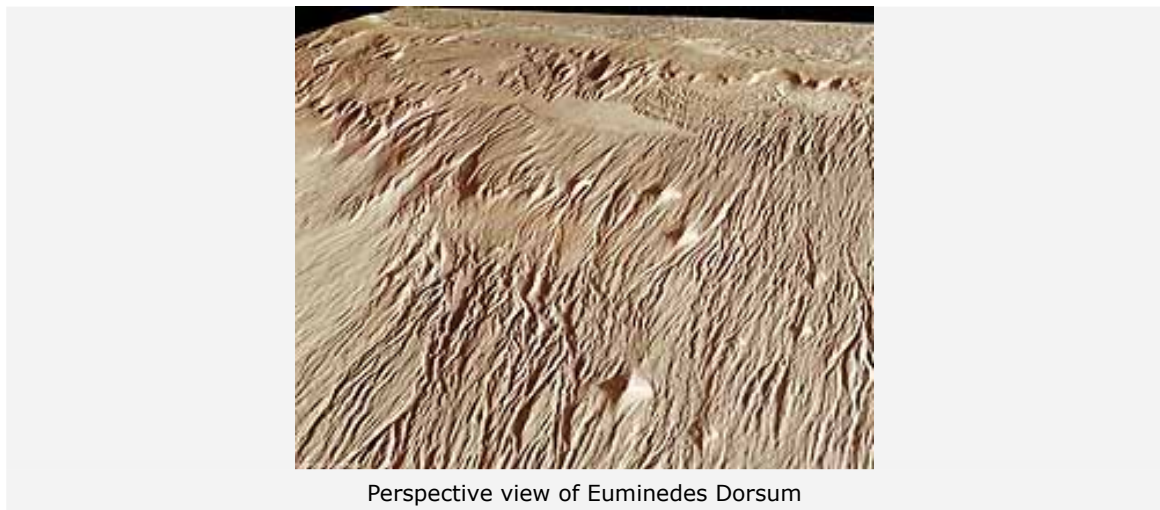
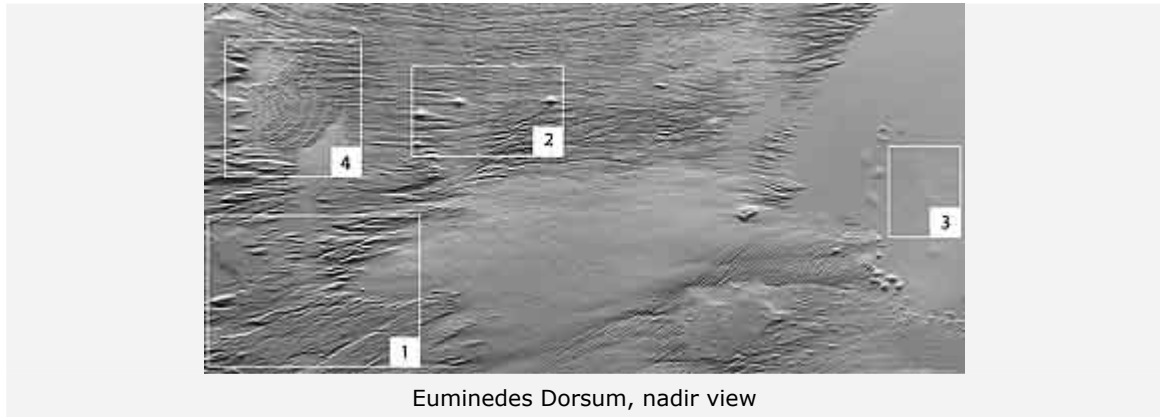
The mountains are located to the west of the Tharsis Region, and form part of the Medusae-Fossae Region, which is most likely covered by a blanket of volcanic ash.



The region exhibits several kilometre-long linear structures interspersed with channels. The entire area bears evidence of the erosional force of wind and possibly water, on Mars.

Although the Martian atmosphere is rather thin compared to the Earth's atmosphere – just 0.75% of mean surface pressure on Earth, corresponding to an altitude of about 35 km above Earth's surface – it can be very dynamic and plays a major role in shaping the red planet's landscape over a long period of time.

The region is dominated by features carved in sedimentary rocks created by the erosional action of the wind. The wind transports loose material, such as sand, and erodes the soft sedimentary rocks along existing structures like gaps, fault lines or incisions, removing the material.



Smaller mounds in the image centre have been eroded and look pyramid-shaped. In the imaged area, most of these features are oriented from north to south. Such preferential orientation develops in areas where the wind direction remains the same.

The smooth areas in the centre of the image and in the northern part of the region are most likely made of more resistant volcanic material. This is because magmatic rocks are usually harder than sedimentary rock and are less affected by erosion.

The southern part of the region is made up of several arched ridges, of which the origin is still debated. Supposedly they are older features that are visible due to erosion. They could also be lava flow fronts or frontal moraines of ancient glaciers. Another possibility is that these ridges were formed by landslides that have been eroded and later superimposed with sediments and exposed again.



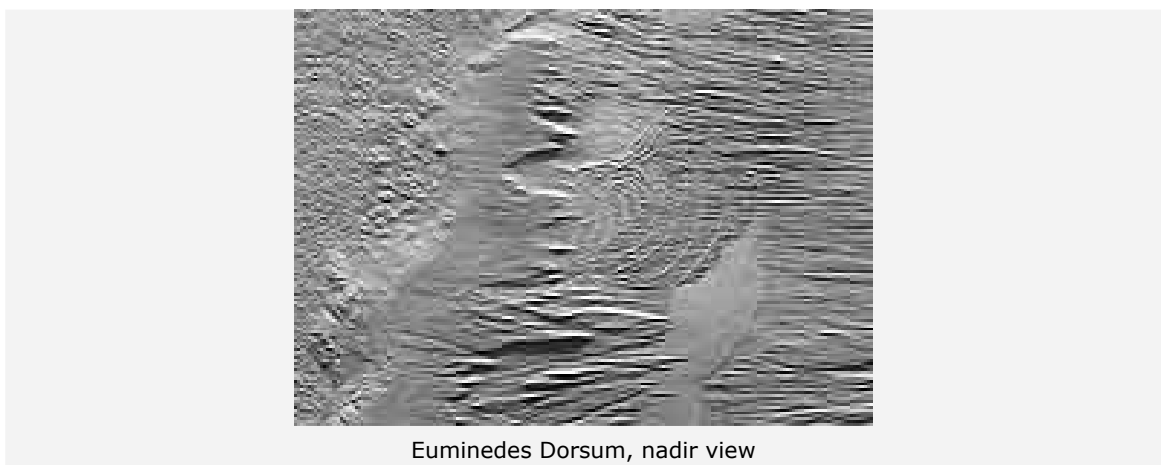
3-D image of Euminedes Dorsum



Euminedes Dorsum perspective view

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 anaglyph image was calculated from the nadir and one stereo channel.

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.



Euminedes Dorsum, nadir view

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 Universitaet Berlin in cooperation with the German Aerospace Center (DLR), Institute of Planetary Research, Berlin.

### **Contact**

#### **Eduard Müller**

German Aerospace Center  
Public Relations  
Tel: +49 2203 601-2805  
Fax: +49 2203 601-3249  
E-Mail: Eduard.Mueller@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

---

*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.*