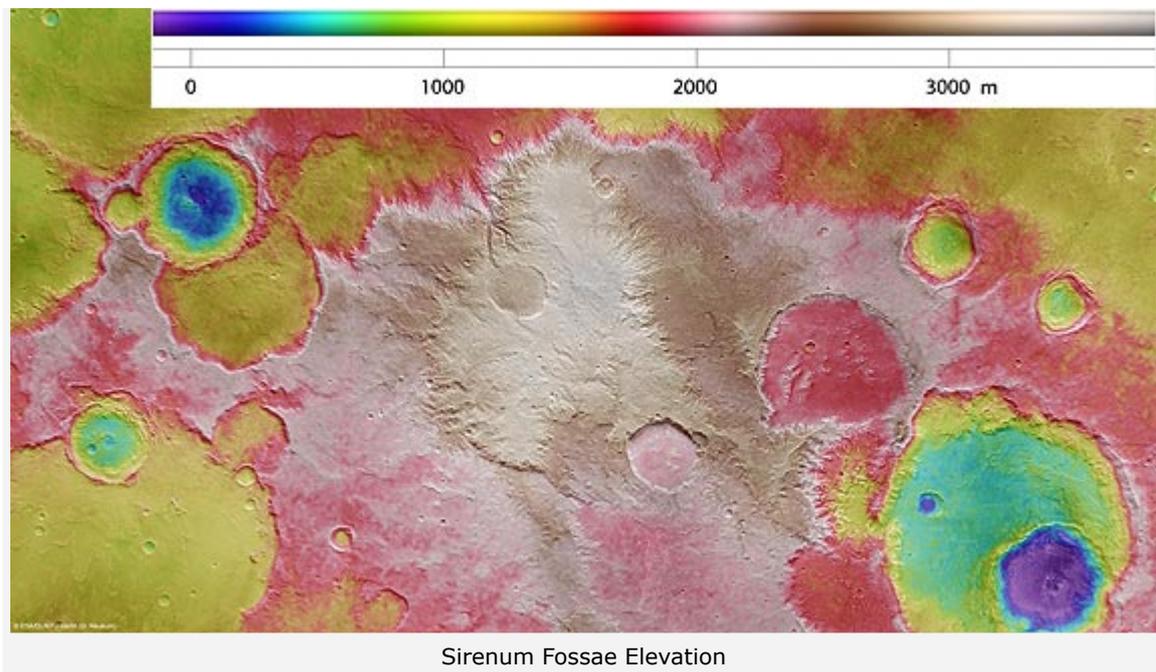
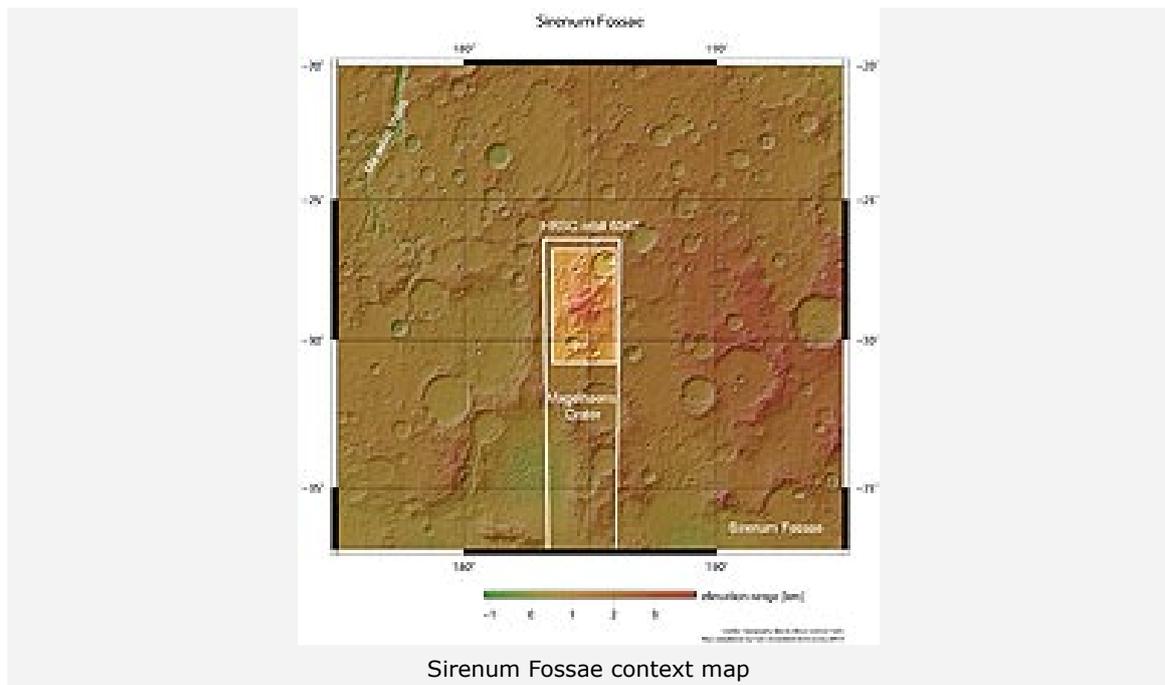


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Craters young and old in Sirenum Fossae

3 February 2010



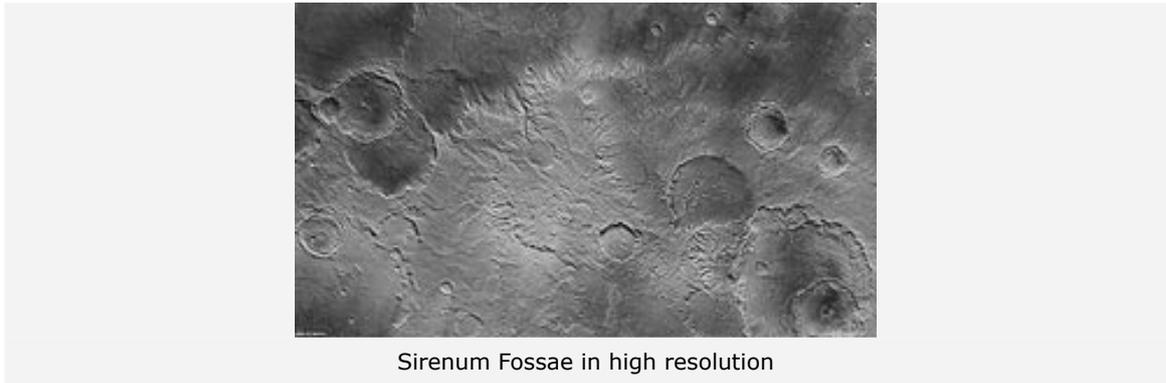


The High Resolution Stereo Camera, operated by the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) on board the Mars Express orbiter has imaged craters, both young and old, in this view of the Southern Highlands of Mars.

Part of the Sirenum Fossae region in the Southern Highlands, the area in this image is centred at about 28°S, 185°E. The image captures an area to the north of the Magelhaens Crater. It extends some 230 by 127 kilometres and covers about 29,450 square kilometres, roughly the size of Belgium. The image resolution is approximately 29 metres per pixel.

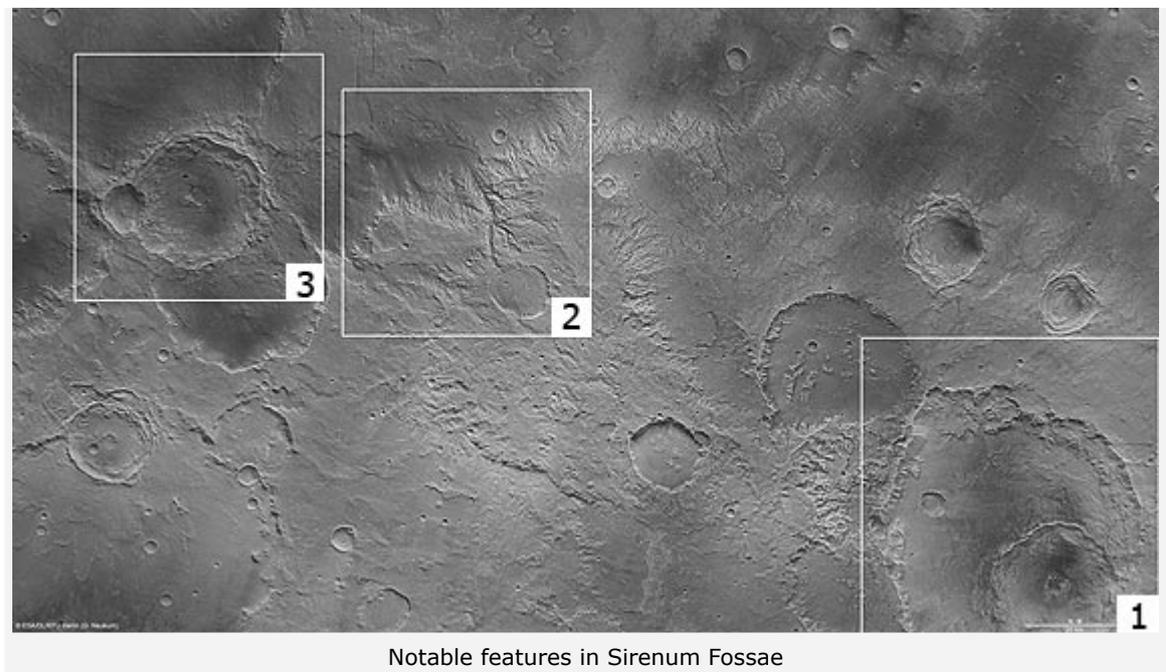


Sirenum Fossae



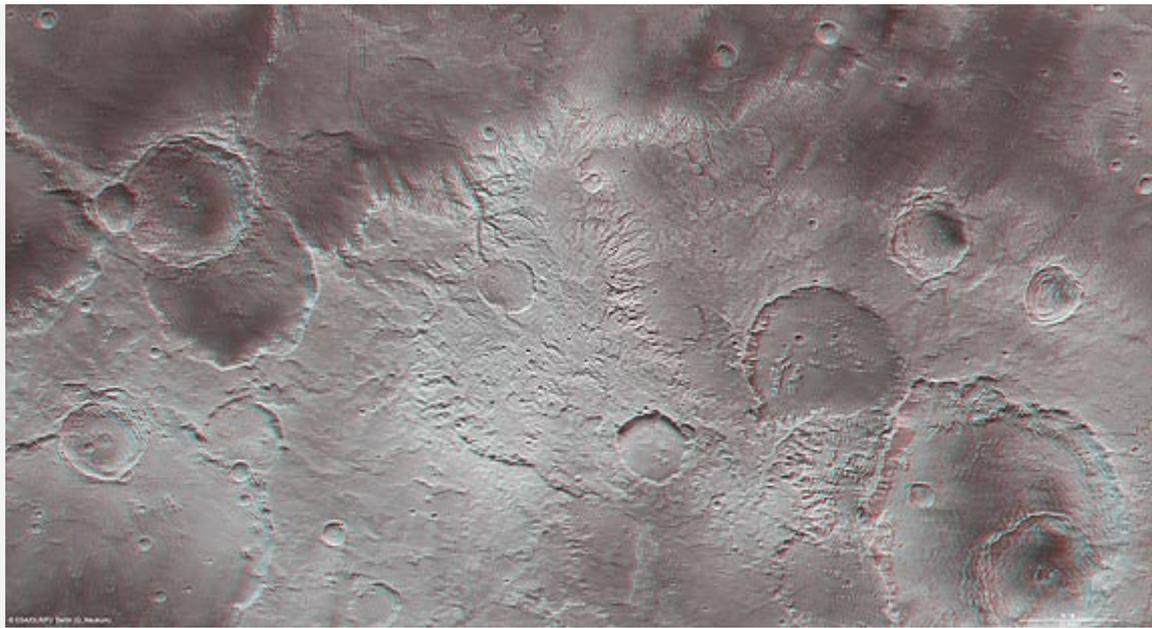
Sirenum Fossae extends more than 2500 kilometres to the southwest of the Tharsis volcanic region, which houses Olympus Mons, the highest volcano in our Solar System. Sirenum Fossae is system of grabens, formed by stresses placed on the crust during the uplift of the Tharsis region. A graben is visible as two sets of parallel lines running from top to bottom to the left of centre.

The Southern Highlands are older than the Northern Lowlands, based on the larger number of impact craters seen covering the region. Craters 50 kilometres in diameter are common in this area and have usually suffered from erosion, indicating they were formed during ancient times.

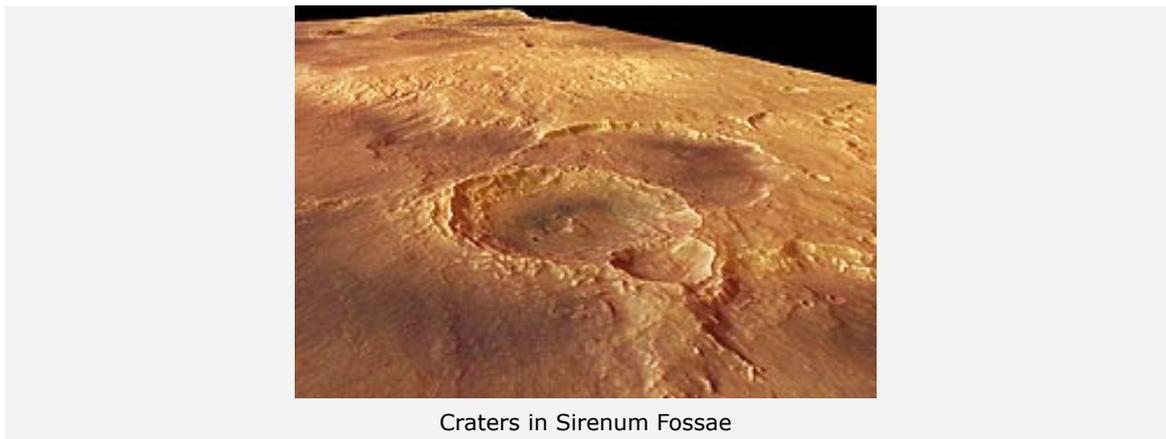


An impact crater with a diameter of about 28 kilometres lies on the left of the image. In contrast to other craters in its vicinity, it has experienced less erosion - its crater rim and central peak are still

preserved. There are three other craters nearby; to the west is a large crater with a diameter of 56 kilometres, to the northeast, one that measures 34 kilometres across and a smaller crater, with a diameter of only nine kilometres, to the south.



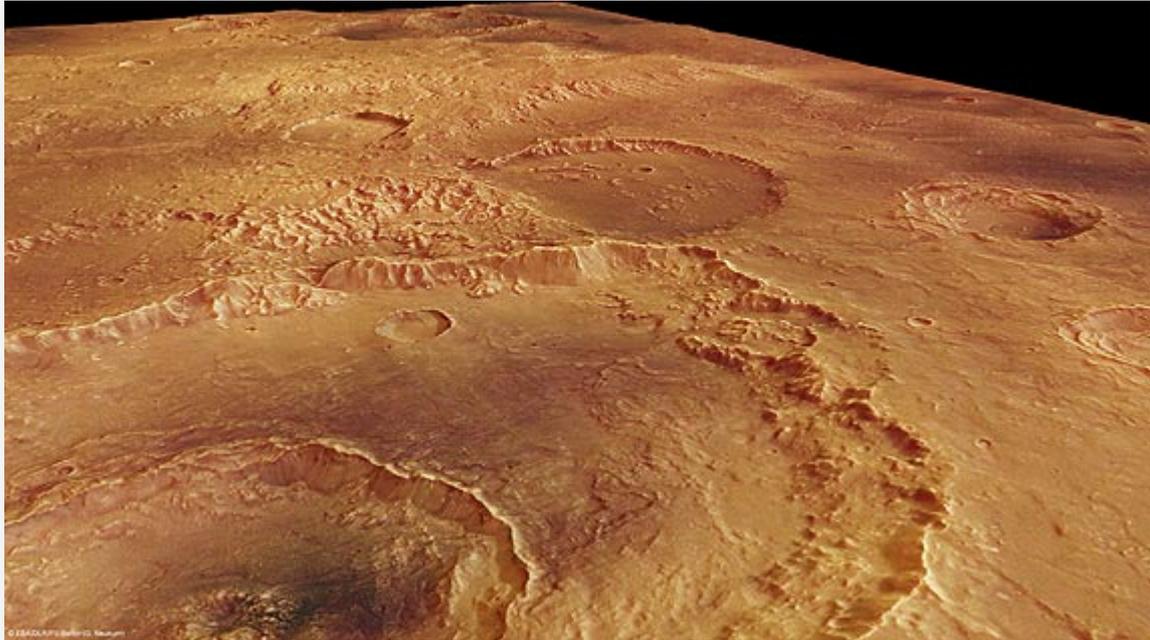
Sirenum Fossae in 3D



Craters in Sirenum Fossae

On the basis of their appearances, the craters can be placed in order of age. The largest two are the oldest because they have been partially destroyed by the mid-sized crater. The smallest is the youngest because it has impacted into the rim of the mid-sized crater.

In the central part of the image is a plateau that shows evidence of further erosion. In particular, there is a broad valley system on the western slope.



Sirenum Fossae in the Southern Highlands

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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