

# Craters young and old in Sirenum Fossae

February 3 2010

---

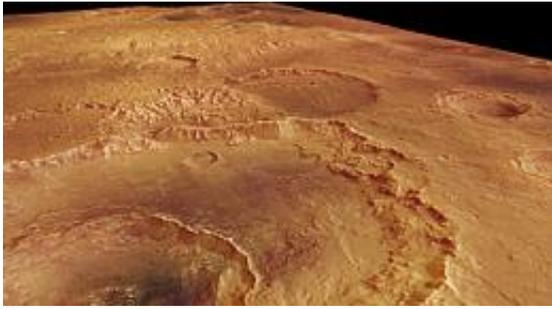


Part of the Sirenum Fossae region in the Southern Highlands of Mars. Credits: ESA/DLR/FU Berlin (G. Neukum)

The Mars Express High Resolution Stereo Camera 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  $28^{\circ}\text{S}$  /  $185^{\circ}\text{E}$ . The image captures an area to the north of the Magelhaens [Crater](#). It extends some 230 km by 127 km and covers about 29 450 sq km, roughly the size of Belgium. The image resolution is approximately 29 metres per pixel.

Sirenum Fossae extends for more than 2500 km to the southwest of the Tharsis volcanic region, which contains Olympus Mons, the highest volcano in our [Solar System](#). Sirenum Fossae is a system of grabens, formed by stresses placed on the crust during the uprising of the Tharsis region. A graben is visible as two sets of parallel lines running from top to bottom to the left of centre.



Perspective view of Sirenum Fossae in the Southern Highlands of Mars. The image shows the region centred at about  $28^{\circ}\text{S}$  /  $185^{\circ}\text{E}$ . It extends about 230 km by 127 km and covers 29 450 sq km, roughly the size of Belgium. The largest impact crater here is around 50 km in diameter, and indicates that this region is ancient because such large craters rarely form in more recent times. Credits: ESA/DLR/FU Berlin (G. Neukum)

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

There is an impact crater with a diameter of about 28 km to 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 km, to the northeast one that stretches 34 km across and a smaller crater of only 9 km diameter to the south.

On the basis of their appearances, the craters can be placed in age order. 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, a plateau is recognisable and shows evidence of further erosion. In particular, there is a broad valley system on the western slope.



There are three notable features in this image of the Sirenum Fossae region of Mars. The image shows the region centred at about 28°S / 185°E. The largest impact crater in box 1 is around 50 km in diameter, and indicates that this region is ancient because such large craters rarely formed in more recent times. There is a large valley system in box two, and two parallel lines to the left-hand side of the box. These form a graben. The central impact crater in box 3 has a diameter of about 28 km, and is relatively young because its centre remains jagged rather than having been smoothed by erosion. The youngest crater is the small 9 km-diameter crater. The crater at the bottom of the box is 34 km across, and the largest crater in the box, at 56 km diameter, is the oldest and most eroded.  
Credits: ESA/DLR/FU Berlin (G. Neukum)

Provided by European Space Agency

Citation: Craters young and old in Sirenum Fossae (2010, February 3) retrieved 14 May 2024 from <https://phys.org/news/2010-02-craters-young-sirenum-fossae.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.