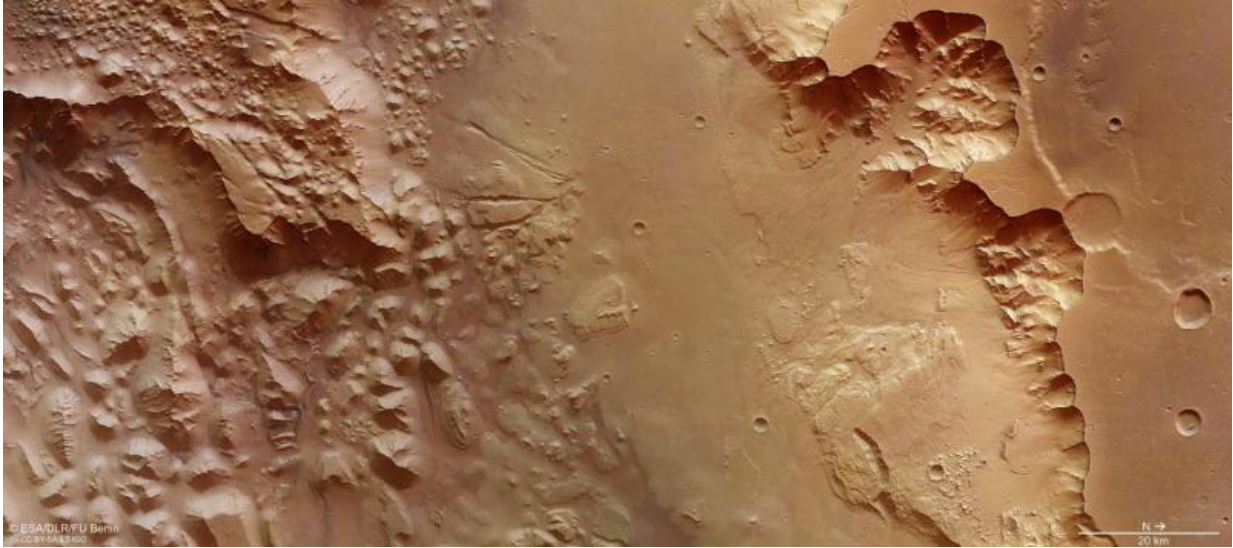


A witness to a wet early mars

November 23 2015



Aurorae Chaos and Ganges Chasma. Credit: ESA

Vast volumes of water once flooded through this deep chasm on Mars that connects the 'Grand Canyon' of the Solar System – Valles Marineris – to the planet's northern lowlands.

The image, taken by ESA's Mars Express on 16 July, focuses on Aurorae Chaos, close to the junction of Ganges, Capri and Eos Chasmata.

Aurorae Chaos measures roughly 710 km across (a smaller section is shown here) and plunges some 4.8 km below the surrounding terrain.

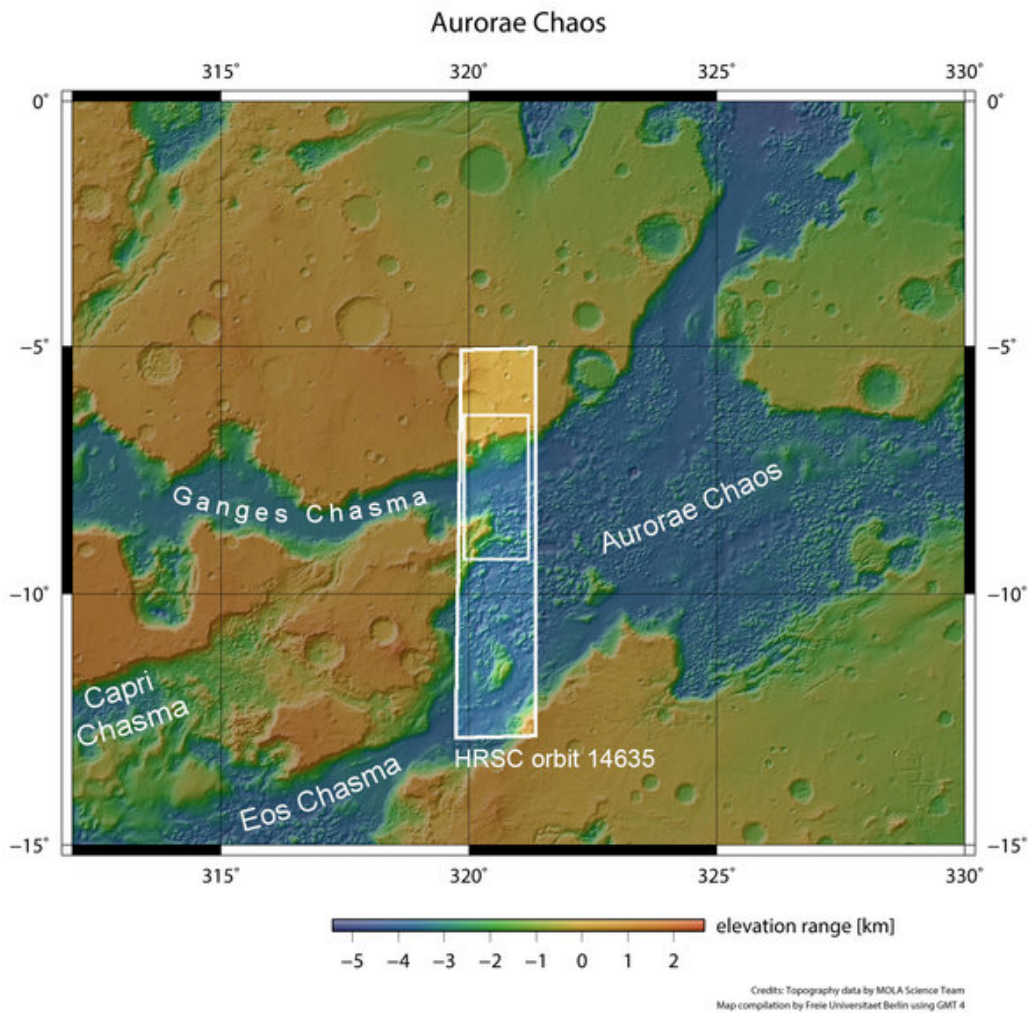
The region is rich in features pointing to wet episodes in the history of the Red Planet. Dominating the southern (left) portion of the scene are numerous jumbled blocks – 'chaotic terrain', believed to form when the surface collapses in response to melting of subsurface ice and the subsequent sudden release of water.

Towards the centre of the image is the smoother floor of Ganges Chasma, comprising mostly alluvial deposits, and which transitions into a steep scarp and a cratered plateau to the north (right).

The northern plateau shares the same elevation as that on the southern side, but does not exhibit similar levels of catastrophic collapse.

However, the cliff tops display small channels and the walls show evidence of slumped material or landslides – best seen in the perspective view. Material closest to the main chasma floor appears stepped, which could reflect different water or ice levels over time.

Another interesting feature can be seen towards the upper centre and to the left in the main images, where a pair of faults cuts through a collapsed block, and perhaps extends into the southern plateau at the top of the image.

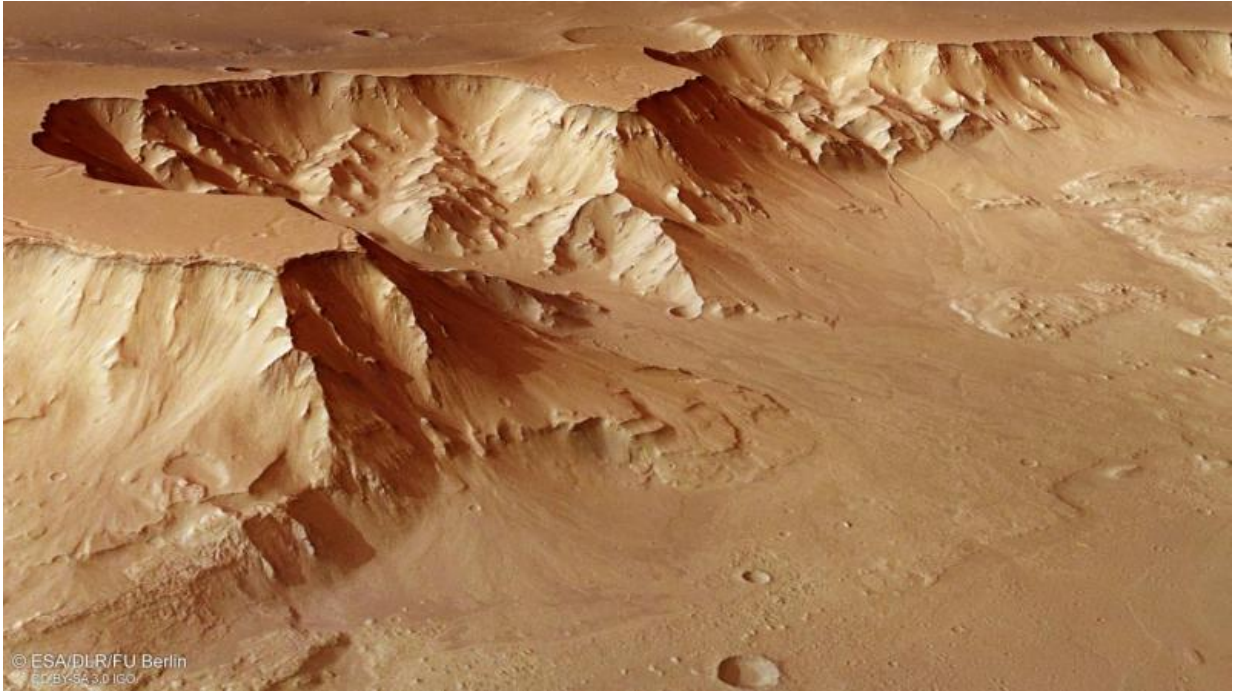


Aurorae Chaos and Ganges Chasma in context. Credit: ESA

The faults could be the result of a tectonic event that occurred after the formation of the chaotic terrain, or they could be from simple subsidence.

This region is just a small subsection of a huge system of interconnected valleys and flood channels that emptied water into the northern plains,

and which were most likely active in the first 1–2 billion years of Mars' history.



Perspective view in Aurorae Chaos / Ganges Chasma. Credit: ESA

Provided by European Space Agency

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