Survey of mid-sized Venusian volcanoes using stereo-derived topography

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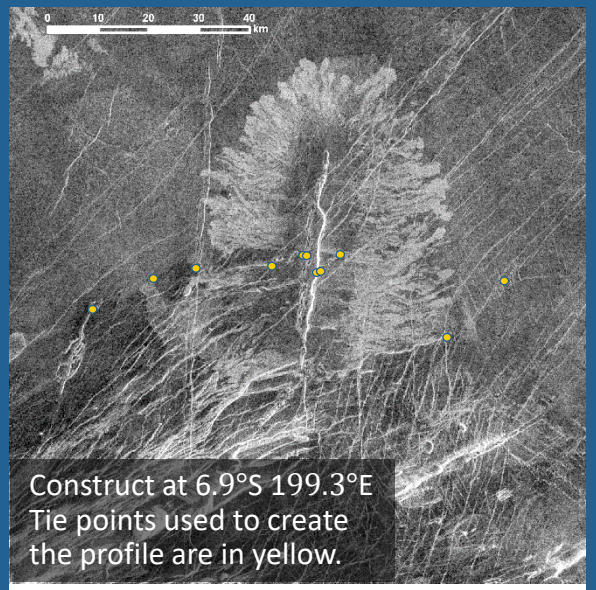
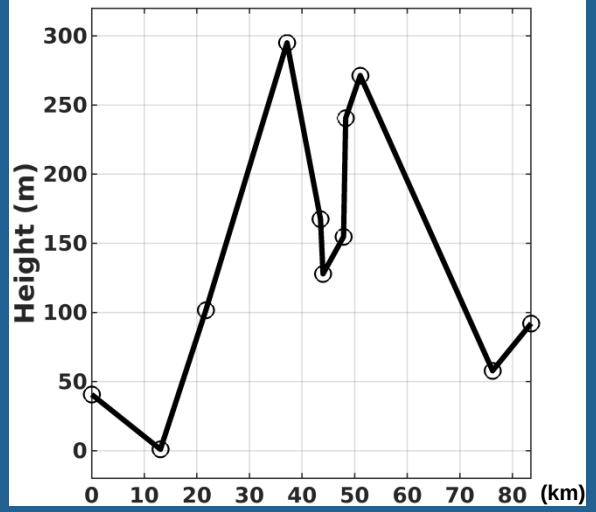


Construct at 6.9°S 199.3°E
Tie points used to create the profile are in yellow.



We used stereo-derived topography to study volcanoes 50-300 km in diameter, a task not possible with Magellan altimetry.

Unlike large volcanoes, mid-sized volcanoes were not found over areas inferred to be the hottest parts of the interior mantle.

We found evidence of unexpected post-volcanism deformation similar to that observed in some much larger volcanoes, from which we infer an unusually thin lithosphere (the brittle outer layer of a planet that supports large topographic features like mountains and volcanoes).

Mantle upwelling and downwelling has at least partial control on the elevation of the constructs and may have important implications for the volcanic history.

The increased resolution of the radar imagery and topography data from VERITAS will allow for much more detailed examination of these mid-sized volcanoes and those only a few kilometers in diameter, a task that is impossible with our current datasets.