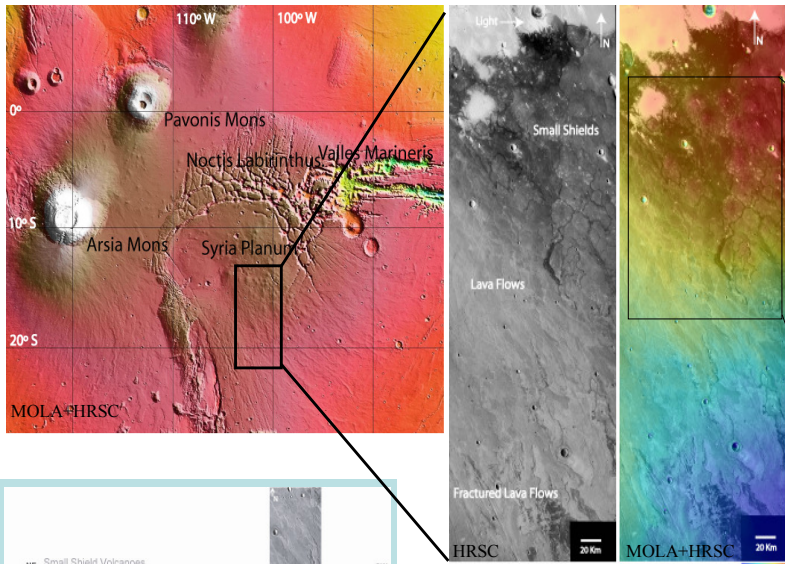


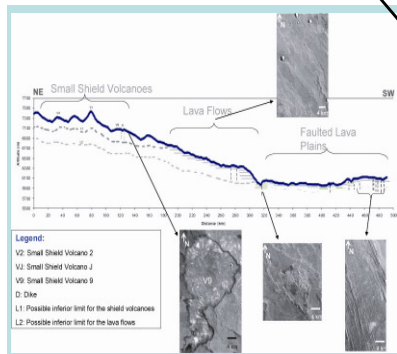
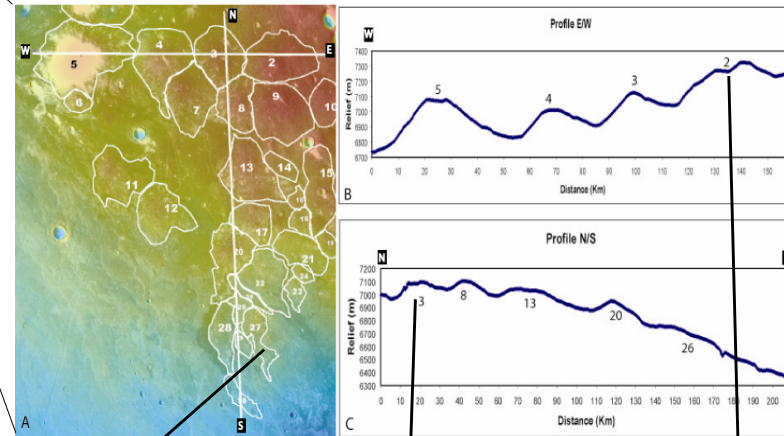
A Swarm of Small Shield Volcanoes on Syria Planum, Mars, analysed using Mars Express - HRSC data

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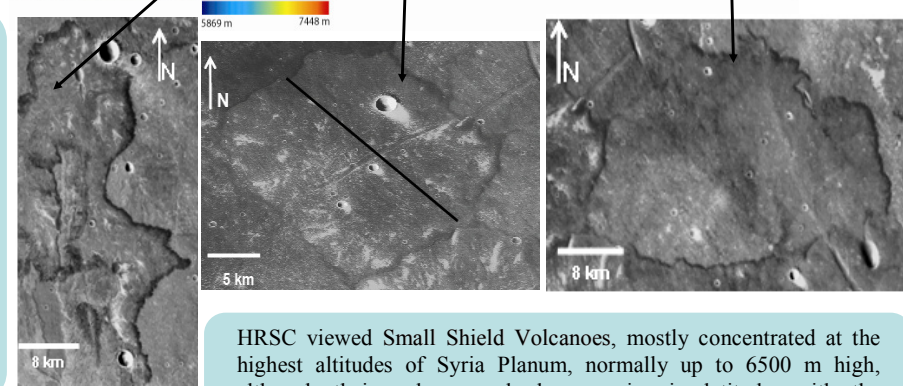


Characterization: These volcanic quasi-circular features, outlined by a darker albedo, are typically 10-20 km diameter, 100-200 m high and have less than 2° steep slopes. These characteristics correspond to those of **small shield volcanoes** and show that Syria Planum experienced a very specific style of volcanism which we have dated from the Hesperian period.



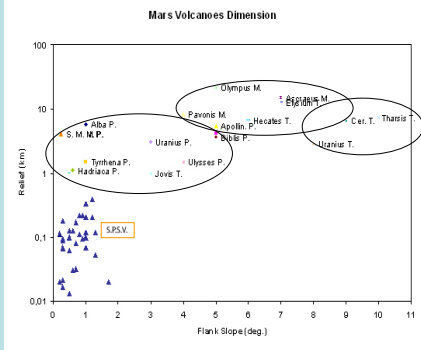
Profile NE/SW from the Syria Planum Region. From the highest altitudes we can observe the succession of the low shield volcanoes, the lava flows intersected by predominantly NE/SW fissures and on the lower lands the highly faulted lava terrains.

Using high resolution images from HRSC/MEX instrument, we have identified and characterized a volcanic system that is unique over the Tharsis bulge as on the whole Mars: a swarm of shallow volcanic edifices.



HRSC viewed Small Shield Volcanoes, mostly concentrated at the highest altitudes of Syria Planum, normally up to 6500 m high, although their volume and shape varies in latitude, with the decreasing of topography.

Comparing with other representative Martian volcanoes, namely Montes, Tholus and Paterae, we realize that the Syria Planum Small Shield Volcanoes (S.P.S.V.) represent one of the most shallow volcanic features.



Conclusion: The Syria Planum region reveals a pattern of volcanic features singular in the context of the Martian tectonics and volcanism. The Syria Planum small shield volcanoes are placed above the deepest Moho on Mars. The higher thickening of the crust may have aborted a giant construction on the surface, like occurred on the Tharsis Montes, and permitted to create several smaller shield volcanoes.