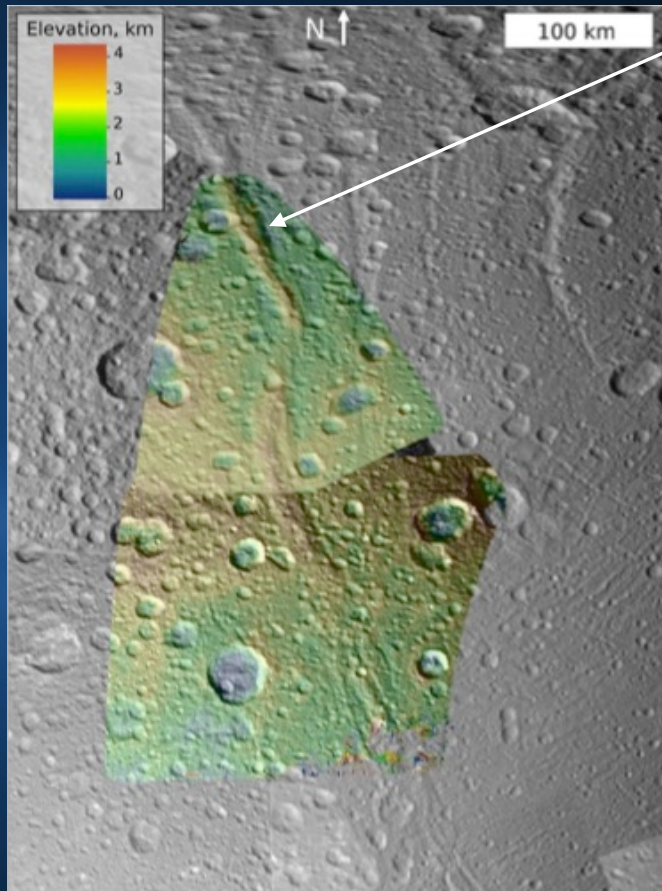




Dione's Putative Subsurface Ocean

The family of Saturn's moons thought to harbor subsurface oceans, including Titan and Enceladus, appears to have a new member. Gravity data from Cassini flybys suggests that Dione's 100-km thick crust floats on a global ocean several tens of km in depth surrounding a large rocky core.



Janiculum Dorsa, a 500 km (300 mile) mountain range on Dione has peaks reaching to 1.5 km (4,830 feet). Topographical analysis of this feature suggests the crust beneath Janiculum Dorsa sags by up to 300 meters (1000 feet) indicating that Dione's crust was once warm and strongly suggests the existence of a subsurface ocean when the mountain formed.

Although Dione's ocean appears too deep for easy access, images of Dione reveal ancient, inactive fractures similar to those found on Enceladus that spray water ice and organic particles. Similar to Enceladus, it is possible that Dione's ocean has existed for the entire history of the moon, and may offer a possible stable habitable zone for microbial life.

