

Saturn's 'tiny' moon hides essentials for life

Enceladus, the moon of Saturn carries an ocean hidden under the thick layer of snow and ice, can support life.

A new study based on data sent from NASA's Cassini probe shows that Enceladus, the moon of Saturn carried an ocean hidden under extremely thick snow cover, could support life.

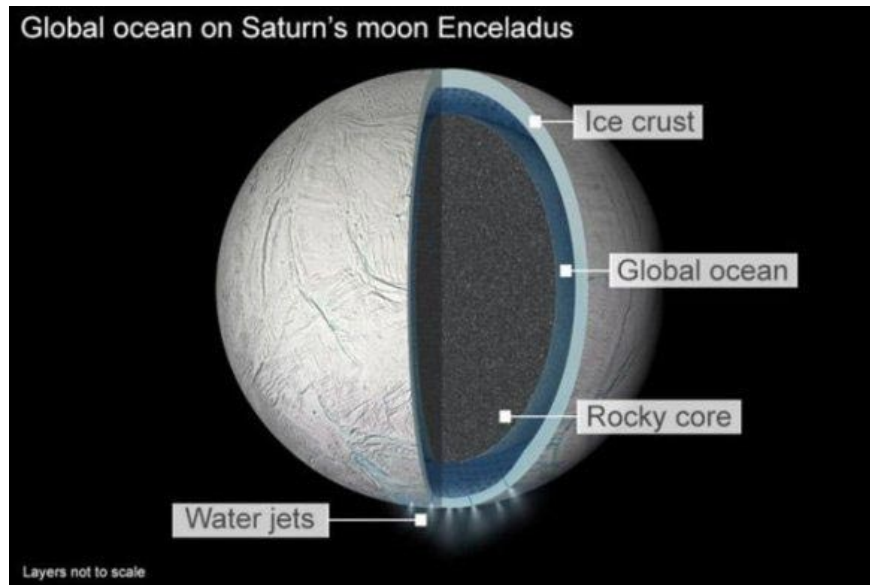
Cracks in the icy moon-covered surface of Enceladus have allowed gas streams to contain signs of water vapor escaping, and the data on these airways can completely reveal valuable information about the ocean. giant ocean hidden beneath the ice, thereby shedding light on whether or not a life exists or once existed on this cold satellite.

'We have applied a new technique to analyze the composition of gasses emitted from cracks on the surface of Enceladus, thereby estimating the concentration of CO₂ dissolved in the ocean beneath the ice. The results will enable modeling of more in-depth exploration plans in the future, 'said Dr. Christopher Glein, Southwest Research Institute, lead author of the study.

The fact is that the team has found relatively abundant carbon dioxide (CO₂), potentially generated by chemical reactions on the ocean floor of Enceladus. In addition, the researchers believe that hydrothermal vents on the ocean floor can transfer a rich source of warm, mineral-rich liquid into water, similar to those found on the ocean's bottom on Earth. serves as the starting point for life on this satellite.

Thus the ability of Enceladus to support life is relatively high. Although there is no evidence that life exists on this satellite yet, Enceladus's natural conditions are conducive to the formation of simple life forms.

'The fluctuations in the bottom surface and the complexity of the composition of ocean water of Enceladus have the ability to create life-supporting energy sources. In other words, the presence of simple life forms beneath the icy crust of Enceladus' moon is not excluded.



The study shows that the composition and composition of the core rock layers on the ocean surface on Enceladus are more complex than we thought, with the appearance of gas and serpentinization layers deep inside. This core appears to affect carbon dioxide in the ocean through a series of different chemical reactions. This core structure can explain the transitions and transformations of satellites that produce the chemical (energy) reactions necessary for the formation of life.

Enceladus is a Saturn satellite about 500 km in diameter, one tenth the size of Titan, the star's largest satellite. Enceladus is one of the smallest satellites with enough mass to have a spherical shape. It has an average diameter of only about 505km, which is 1/7 of the moon. Enceladus is so small that its size is equivalent to that of the United Kingdom. By comparison, Enceladus can easily fit into states with average area such as Arizona or Colorado of the US. The surface area of ??the satellite is about 800,000m², nearly 2.5 times the area of ?? Vietnam.

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