

[ 作者 ] Aurobiology Magazine  
[ 单位 ] Aurobiology Magazine  
[ 摘要 ] May 22, 2007. Scientists have begun the final leg of a five-year mission to reach the bottom of Earth's deepest known sinkhole. The mission could be an important step in developing missions to search for life in the liquid ocean below the icy surface of Jupiter's moon Europa.  
[ 关键词 ] sinkhole;hydrology



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year mission to reach the bottom of Earth's deepest known sinkhole. The mission could be an important step in developing missions to search for life in the liquid ocean below the icy surface of Jupiter's moon Europa.

Scientists have begun the final leg of a five-year, NASA-

funded mission to reach the bottom of Conito Zacatán in Mexico, the world's deepest known sinkhole.

No one has ever reached bottom and at least one diver has died in the attempt. Scientists want to learn more about Conito Zacatán's physical dimensions, the geothermal vents that feed it and the forms of life that exist in its murky depths.

Previous expeditions used the robotic probe that will make the dive. The Deep Phenolic Thermal Explorer, known as DEPTHX, is a spherical-

shaped submersible designed to survey and explore for life in extreme regions on Earth and potentially in outer space. During eight years of research at Zacatán, doctoral student Marcus Gray, who coordinates the DEPTHX mission, and hydrogeology professor Jack Sharp, both from The University of Texas at Austin's Jackson School of Geosciences, discovered the system's unusual hydrothermal

Technology developed to explore the sinkhole could be applied to future space probes of Europa, whose scientists believe that deep cracks and holes in the ice offer a chance of finding extraterrestrial life.

The DEPTHX technology has also been approved for a new NASA mission to explore one of Antarctica's ice-

bound polar lakes. Researchers believe ice-bound lakes hold clues to the origins of life on Earth.

William Stone of Stone Aerospace in Dal Yado, Texas, is principal investigator on the project. The research team also includes robotics experts, engineers, geobiologists and geochemists from Carnegie Mellon University's Robotics Institute, Colorado School of Mines, Southwest Research Institute and Mexico's Universidad Autónoma de Nuevo Leon and Universidad del Noroeste.

Known as the world of robots explores, DEPTHX is autonomous. The probe does not rely on instructions from humans to decide where to go or what to do. Using software developed by Carnegie Mellon graduate student Nathaniel Fairfield, DEPTHX creates 3D maps of previously unexplored areas as it swims along and then uses those same maps to navigate back to the surface.

