Exploring Hawaiian Caves Helps NASA Search for Life on Mars

Mars is one of NASA's top destinations to search for signs of ancient or current micro-organisms, with several missions underway or being developed.

Goddard scientists recently discovered dozens of previously unidentified species of microbes in lava tubes near Mauna Loa in Hawaii and gathered insights about their habitats that will inform strategies to one day collect samples in Martian lava tubes.

When lava tubes first formed on Mars, the Red Planet was likely similar to Earth, with active volcanoes, an atmosphere, a warmer climate, and flowing water. Since these conditions helped nurture life on Earth, they may have done the same on Mars.

Even though the Martian surface became inhospitable to living creatures after the planet shed its atmosphere, cooled, and dried up about 3 billion years ago, microbes could have migrated underground.

Insight from this research could help Martian rovers pinpoint promising sites to sample for signs of past or present life.

Inside a lava tube near Hawaii's Mauna Loa volcano. Pictured is Chloe Fishman (Gerogetown U.), Cherie Achilles (GSFC/698), and Amy McAdam (GSFC/699). Credits: NASA Goddard / Molly Wasser

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