

Is there life on Mars?

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An international team of scientists including the University of Leeds' Liane Benning have successfully trialled techniques to search for life on Mars. Their findings - microbes deep within ice-filled volcanic tubes - reveal how to test for life on the red planet.

Dr Benning from earth and environment is the sole UK member of the AMASE team studying rocks, ice and micro-organisms on the arctic island of Svalbard in Norway, which has a geology similar to that of parts of Mars. "We sampled the ice-filled volcanic tubes of the one million-year-old Sverrefjell volcano to see if life could survive in such harsh environments," she said.

Using a life-detection strategy including specially designed sterile drills to avoid contamination from surface bacteria or humans, the team discovered a rare and complex microbial community living deep within blue ice in the arctic volcano. The team detected both living and fossilised organisms, supporting the theory that the frozen planet Mars could sustain life and demonstrating we have tools to find it.

"By taking our science to the earth equivalent of Martian environments, we're developing sampling and analysis strategies that put us in a good position for future Mars missions," Dr Benning said. One of their biggest challenges is to develop techniques and instrumentation which can be used by rovers or even astronauts in cumbersome space suits. "We need to be able to take and integrate measurements, from a detailed photo or a simple pH measurement to complex tests detecting single cells," she said.

To continue this work the AMASE (Arctic Mars analogue Svalbard expedition) team has been awarded a prestigious three-year NASA grant to integrate and test a remote-controlled rover equipped with more complex instruments planned for the NASA Mars science laboratory mission in 2011.

Source: University of Leeds

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