

## Methane on Mars

**Voice-over:**

The Mars Express has discovered that methane is constantly generated on the surface of Mars. But where is it coming from?

**David Southwood:**

Methane is normally associated with organic activity on the Earth. You just put methane into the atmosphere; it disappears very rapidly. It's changed by the sunlight, and so we know if we find methane, it must be being continuously created. I wish there was only one way to create methane because if there were, we would have proved life exists on Mars now or at least organic activity. Unfortunately the story is more complex. Methane is also produced by other, er, processes, non organic processes, such as, for instance, volcanoes.

**Voice-over:**

There are some impressive volcanoes on Mars, like Mount Olympus, which is nearly twenty-four kilometres tall. A monster, but an inactive one, because volcanic activity on Mars stopped a long time ago. So where is the methane coming from?

**David Southwood:**

If there is organic activity on Mars, it almost certainly has to be below the surface. How far below the surface? Well, there's a limit to how far we can dig, but we can go down one or two metres if we put the effort in to develop the capability to do that.

**Voice-over:**

So ESA is doing a feasibility study to send a rover to Mars to analyse the atmosphere but also to penetrate the surface and investigate the internal composition of Mars. The materials collected will be analysed in situ and the results transmitted to Earth. Missions like this however, need international co-operation.

**David Southwood:**

It's something that we should do with the Americans, with the Russians. It cannot be done without a plan. It cannot be done in one big jump. It's got to be done step by step. I think we've started the step by step; I just would like the pace to rise a little faster.

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