'Second genesis': Assessing the evidence for life on Mars

Today, the burning question isn't whether Mars might once have been habitable – at various times in its distant past, it most certainly was – but whether it might have developed life before its climate became too cold and dry. If so, that would be evidence of what astrobiologists call a "second genesis" of life (the first being our own).

Even if that second genesis never developed beyond single-celled microorganisms, it would mean that life arose at least twice in our own solar system. And if that happened here, how often might it have occurred on the thousands of planets astronomers are finding, circling distant stars? ...

The easiest way to find life on Mars would be if a multi-tentacled something from a science-fiction writer's dream jumped out from behind a rock and waved to us: "Welcome, Earthings, here I am!" Second best would be if a rover were to scoop up a soil sample and see a bunch of wriggling microorganisms.

But the surface of Mars is an extremely harsh environment, and signs of life ... could be hard to detect. But that doesn't mean there aren't a number of well-thought-out ways to hunt for it.

Read full, original post: Is there life on Mars? Let's assess the evidence