



Life on Mars

by David A. Weintraub

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“Are we alone in the universe? If life is common, if the genesis of life is fairly easy given the right environment and the necessary elemental materials. Some form of life might exist right next door, on Mars, and if life were discovered on Mars that is of independent origin that life on Earth could safely predict that life is common throughout the universe. Such a discovery would be extraordinary “.

The book *Life on Mars* is pursuit of a seemingly self-fulfilling prophecy that some kind of life must have existed or even exists on Mars.

A starting point and a kind of explanation why our closest neighbor triggered extreme speculations about existing life forms on Mars and the quest of numerous scientists to discover extraterrestrial life on Mars was the observation by Schiaparelli in 1878 of what he called “canali” triggering an increasing hype, which scientists quietly pursue to-day with most sophisticated high tech instruments on satellites and the most powerful telescopes on Earth.

This book summarizes the journey of trials and tribulations throughout the centuries under the motto: *“What to know before we go”*.

The author David Weintraub delves deep and seamlessly into the ancient and modern scientific search for Martian life, discussing findings like water ice, methane emissions, and possible bio-signatures. In the past experts with big influence at their time were scientists like William Huggins, Percival Lowell and E. E. Barnard and many others mentioned in the book contributed their shares.

Weintraub is meticulous presenting the evidence about the never ending “methane-saga”, the claim of scientists to be the first have detected methane in the Mars atmosphere – thus having detected a bio-signature of life on Mars. The measured methane behavior seems to be varying between zero and bumps in the noise level (*fishing in the noise*) and one-time singular peaks with as complicated hypothetical explanations.

Weintraub presents the results of all available publications and official statements by the involved scientists so far balancing excitement with caution. *“If life exists on Mars, it is likely to be microbial, hidden beneath the surface or in briny streaks, shielded from the planet's harsh radiation.”*

Weintraub’s conclusion on biological processes on Mars is – the jury is still out, but *“stay tuned.”*

Weintraub also examines the ethical dilemmas surrounding Mars exploration. Should we terraform Mars if microbial life exists there? Do we have a moral obligation to preserve alien ecosystems? These questions elevate the book beyond a purely scientific narrative. *“The discovery of life on Mars would challenge humanity to reconsider our place in the universe and our responsibilities as stewards of other worlds.”*

The book concludes with an analysis of the next steps in Mars exploration, including plans for human missions. Weintraub highlights the potential scientific gains while cautioning against the risks of contamination and unchecked exploitation. *"Before we go to Mars, we must decide whether our presence will mark the beginning of a scientific renaissance or the end of a pristine alien world."*

With the provoking statement *"Do life-forms—even if no longer alive—exist on Mars? Yes.* We know this now, with a very high degree of certainty, because studies have shown that more than five dozen species of terrestrial bacteria hitched rides from Earth to Mars on the surfaces of the Curiosity rover, despite the strenuous cleaning methods applied pre-launch.

Life on Mars is a compelling and thought-provoking book to read that also tries to bridge the gap between science and philosophy. The strength of the book is its seamless presentation of all the scientific theories, their falsifications, and all the trials and tribulations over the last century up to 2017, the publishing data of the book.

This is unique and was never presented in a concise form like in David Weintraub book. It could be used as an almanac for Mars exploration, living truly up to the subtitle of the book: *"what to know before we go."*

It challenges readers to think critically about the implications of finding life beyond Earth and our responsibilities as we venture into the cosmos. For anyone interested in astrobiology, planetary science, or the ethical dimensions of space exploration, this book is a must-read.