

THE UNEXPLAINED FILES

→ BOOK FOURTEEN ←

MARS: THE SEARCH FOR ANCIENT LIFE

THE EVIDENCE, DISCOVERIES AND
MYSTERIES THAT COULD CHANGE
OUR UNDERSTANDING OF MARS
FOREVER



ALDEN M. CORVALE

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MARS: **THE SEARCH FOR** **ANCIENT LIFE**

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*The Evidence, Discoveries and Mysteries That Could Change
Our Understanding of Mars Forever*

ALDEN M. CORVALE

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PUBLISHING NOTE

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This is a work of general-interest nonfiction about Mars science, astrobiology, exploration history and extraordinary claims. It distinguishes established evidence from plausible interpretation and speculation. Scientific findings, mission status and current developments were checked through August 2026 where relevant. No claim of extraterrestrial life is presented as established unless supported by the scientific record.

The book is written for a broad audience and is not a substitute for primary scientific literature. Readers interested in technical details should consult the mission pages, peer-reviewed papers and institutional sources listed in the selected references.

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PREFACE

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Mars has spent centuries changing its identity. To ancient skywatchers it was a wandering red light. To nineteenth-century astronomers it became a possible home of canals and intelligent engineers. The first spacecraft transformed it into an apparently frozen desert. Then orbiters and rovers found valleys, deltas, lake sediments, clays, carbonates, buried ice and organic molecules. By the middle of the 2020s, the question was no longer whether ancient Mars possessed environments that could have supported life. It clearly did. The harder question became whether life actually used that opportunity.

That distinction matters. A habitable lake is not the same thing as a living lake. Organic molecules are not automatically biological. Minerals that can form around microbes can also be created by chemistry without life. The history of Mars is therefore a lesson in scientific restraint: each new discovery can make the biological possibility more compelling while still stopping short of proof.

In September 2025, that tension reached a new level. NASA announced that a sample collected by the Perseverance rover from the rock Cheyava Falls contained what scientists describe as potential biosignatures. The phrase was chosen carefully. The rock carries organic material and unusual mineral patterns that are compatible with certain microbial processes on Earth, but non-biological explanations have not been eliminated. It may prove to be one of the most important rocks ever studied on another planet. It may also become a classic example of how geology can imitate biology.

This book follows the evidence from the first telescopic dreams to the newest rover results. It also examines the myths that grew around Mars: canals, faces, pyramids, secret ruins and hidden civilizations. Those stories matter because they reveal what human beings want Mars to be. But wanting an answer is not the same as discovering one.

The real Mars is more interesting. It was once wet. It once had rivers and lakes. It built sedimentary archives capable of preserving chemistry for billions of years. And somewhere inside those archives may be a record of whether life began twice in one small solar system.

INTRODUCTION

THE PLANET THAT KEEPS CHANGING ITS STORY

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Mars is close enough to tempt us and distant enough to resist us. At its nearest, it can appear as one of the brightest objects in the night sky. Through a telescope, dark and light regions seem to change with the seasons. Dust storms can engulf the entire planet. Polar caps grow and shrink. Before spacecraft, those changes encouraged observers to imagine vegetation, waterways and civilizations.

Modern exploration replaced many old mysteries with harder ones. Mariner flybys revealed impact craters. Viking orbiters mapped enormous volcanoes and canyon systems. Viking landers performed the first experiments designed to detect metabolism in alien soil. Mars Global Surveyor and Mars Reconnaissance Orbiter exposed ancient valley networks, mineral deposits and layered sediments. Spirit and Opportunity found evidence that water had altered rocks. Curiosity drilled mudstone in a former lake. Perseverance landed in a crater containing a preserved river delta and began collecting carefully selected rock cores.

The result is not a simple march from fantasy to certainty. It is a sequence of revisions. Mars was not a canal-covered world, but it really did have rivers. The old seasonal darkening was not vegetation, but the planet really did possess chemistry compatible with habitability. Viking did not settle the life question, and neither have the rovers that followed. Each generation has learned enough to ask a better question.

This book uses three labels throughout. **Known** means supported by strong observation or repeated measurement. **Plausible** means consistent with evidence but not uniquely demonstrated. **Unproven** means a claim lacks the evidence required to treat it as established. These categories are not judgments about whether an idea is exciting. They are reminders that the most important discovery in planetary science would become weaker, not stronger, if we lowered the standard of proof.