

The Rock From Mars A Detective Story On Two Plane

A day on Mars is almost as long as a day on Earth, but how long is a year on Mars? Does Mars have seasons? What color are the rocks on Mars? Mars is full of volcanoes, but when did the last one erupt? Learn the answer to these questions and many more fun facts in this 15-Minute Book. In the Milky Way Galaxy, there is a yellow sun that has eight planets. Four of the planets are rock worlds. The other four are gas and ice. The closest planet to the sun is Mercury. It's too hot for anything to live there. The second is Venus. Its atmosphere is deadly. The third is Earth. It has oceans and land. It has trees and animals, and humans. The fourth planet, and last of the rock worlds, is Mars - the red planet. How much do you know about this fascinating place? The Educational Version has activities that meet Common Core Curriculum Standards. LearningIsland.com believes in the value of children practicing reading for 15 minutes every day. Our 15-Minute Books give children lots of fun, exciting choices to read, from classic stories, to mysteries, to books of knowledge. Open the world of reading to a child by having them read for 15 minutes a day.

Astrobiology is an interdisciplinary field that asks profound scientific questions. How did life originate on the Earth? How has life persisted on the Earth for over three billion years? Is there life elsewhere in the Universe? What is the future of life on Earth? Astrobiology: Understanding Life in the Universe is an introductory text which explores the structure of living things, the formation of the elements for life in the Universe, the biological and geological history of the Earth and the habitability of other planets in our own Solar System and beyond. The book is designed to convey some of the major conceptual foundations in astrobiology that cut across a diversity of traditional fields including chemistry, biology, geosciences, physics and astronomy. It can be used to complement existing courses in these fields or as a stand-alone text for astrobiology courses. Readership:

Undergraduates studying for degrees in earth or life sciences, physics, astronomy and related disciplines, as well as anyone with an interest in grasping some of the major concepts and ideas in astrobiology.

How can we tell that meteorite ALH 84001 comes from Mars, and what is it doing on Earth?! This meteorite, found in Antarctica in 1984, provided scientists with evidence suggesting the possibility that life once existed on Mars. Dr. Fred Bortz uses the scientific process to break down what we know, and what we are still learning. Newly updated (2014) to include data acquired by the Spirit, Opportunity and Curiosity rovers.

The Volcanoes of Mars

Martian Fossils on Earth?

Lunar and Planetary Science XXVII

Geological Survey Professional Paper

From Ancient Egypt to The Martian, A Deep-Space Dive into Our Obsession with the Red Planet

Meteorite

Within the Office of Space Science of the National Aeronautics and Space Administration (NASA) special importance is attached to exploration of the planet Mars, because it is the most like Earth of the planets in the solar system and the place where the first detection of extraterrestrial life seems most likely to be made. The failures in 1999 of two NASA missions-Mars Climate Orbiter and Mars Polar Lander-caused the

space agency's program of Mars exploration to be systematically rethought, both technologically and scientifically. A new Mars Exploration Program plan (summarized in Appendix A) was announced in October 2000. The Committee on Planetary and Lunar Exploration (COMPLEX), a standing committee of the Space Studies Board of the National Research Council, was asked to examine the scientific content of this new program. This goals of this report are the following: -Review the state of knowledge of the planet Mars, with special emphasis on findings of the most recent Mars missions and related research activities; -Review the most important Mars research opportunities in the immediate future; -Review scientific priorities for the exploration of Mars identified by COMPLEX (and other scientific advisory groups) and their motivation, and consider the degree to which recent discoveries suggest a reordering of priorities; and -Assess the congruence between NASA's evolving Mars Exploration Program plan and these recommended priorities, and suggest any adjustments that might be warranted.

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Humanity has long been fascinated by the planet Mars. Was its climate ever conducive to life? What is the atmosphere like today and why did it change so dramatically over time? Eleven spacecraft have successfully flown to Mars since the Viking mission of the 1970s and early 1980s. These orbiters, landers and rovers have generated vast amounts of data that now span a Martian decade (roughly eighteen years). This new volume brings together the many new ideas about the atmosphere and climate system that have emerged, including the complex interplay of the volatile and dust cycles, the atmosphere-surface interactions that connect them over time, and the diversity of the planet's environment and its complex history. Including tutorials and explanations of complicated ideas, students, researchers and non-specialists alike are able to use this resource to gain a thorough and up-to-date understanding of this most Earth-like of planetary neighbours.

Guidebook for the Scientific Traveler

Searching for Life on Another World

The Atlas of Mars

How Stones from Outer Space Made Our World

Astrobiology

The Search For Life On Mars

Developed in partnership with the National Geographic Society,

OCEANOGRAPHY: AN INVITATION TO MARINE SCIENCE, 10th edition gives you

a basic understanding of the complexities and uncertainties involved in ocean use as well as its role in sustaining life on Earth. Thoroughly updated with the latest findings from the field, the book includes new coverage of important issues such as climate change. Emphasizing the science process throughout, it helps you see how concepts from other scientific fields relate to topics in oceanography. Co-author Robert Ellis draws from his experience managing research projects and educational programs throughout the world, and a diverse group of National Geographic Explorers also share their insights on key concepts. National Geographic resources integrated throughout help create an engaging, visually appealing presentation. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Planetary scientist and educator Ken Coles has teamed up with Ken Tanaka from the United States Geological Survey's Astrogeology team, and Phil Christensen, Principal Investigator of the Mars Odyssey orbiter's THEMIS science team, to produce this all-purpose reference atlas, *The Atlas of Mars*. Each of the thirty standard charts includes: a full-page color topographic map at 1:10,000,000 scale, a THEMIS daytime infrared map at the same scale with features labeled, a simplified geologic map of the corresponding area, and a section describing prominent features of interest. The Atlas is rounded out with extensive material on Mars' global characteristics, regional geography and geology, a glossary of terms, and an indexed gazetteer of up-to-date Martian feature names and nomenclature. This is an essential guide for a broad readership of academics, students, amateur astronomers, and space enthusiasts, replacing the NASA atlas from the 1970s.

Mineralogy - Significance and Applications includes new contributions to the field of mineralogy in terms of mineral chemistry and petrogenesis using updated facilities from regions in Asia and Europe to interpret petrologic significance. It discusses the industrial uses of some minerals as raw materials and in electrical firms and gemology. The book also introduces several works on synthesis of some compounds and applications of mineralogy in biomedicine, including iron oxide nanoparticles and nanocomposites, and their biomedical applications as diagnostic and drug delivery tools for treatment of cancer and many other diseases.

Mapping its Geography and Geology

14 Fun Facts About Mars: A 15-Minute Book

Mars Rock

Significance and Applications

Understanding Life in the Universe

Mysteries of Mars

Mars is the Solar System's other wild, wet, water world. Long believed to have become cold, dead, and dry aeons ago, we now having striking new proof, not only that Mars was a relatively warm and wet place in geologically recent times, but that even today there are vast reserves of water frozen beneath the planet's surface. This compelling new evidence may well boost the chances of a manned

mission to Mars sooner, rather than later. The discovery is also forcing a complete rethink about the mechanisms of global planetary change. What does the drastic turn of events on Mars mean for Earth's climate system? Could life have thrived on Mars very recently, and might it survive today in short-term hibernation? Will humans soon be capable of living off the natural resources that Martian hydrogeology has naturally offered us? Will humans one day be capable of setting off the same chain of events that nature has repeatedly triggered to set off warm, wet episodes on Mars? How could Mars be terraformed into a New World? (And should we even contemplate doing so?) This book offers a visually beautiful, scientifically detailed and accurate presentation of the evidence that has forced this new revolution in Mars science. From the reviews:"Long believed to have been cold, dead and dry for eons, there is now striking new proof that not only was Mars a relatively warm and wet place in geologically recent times, but that even today there are vast reserves of water frozen beneath the planet's surface. In this absorbing, beautifully illustrated book, Kargel describes the still-unfolding revolution in our knowledge about the Red Planet and how future concepts of Mars will continue to be molded by new revelations of four billion years of geology". (LUNAR AND PLANETARY INFORMATION BULLETIN)nbsp; From the reviews:" This exhaustive, effusive, and enthusiastic book conveys the excitement of frontline scientific research about as well as can be done. Kargel describes himself as a member of the "Tucson Mafia," a group of scientists in full rebellion against the "Mars Establishment" and its belief in a cold, dry Mars. His ideas are presented in meticulous detail, supported by hundreds of superb pictures, many taken by the author himself. Some--perhaps most--of his ideas are controversial and may ultimately prove to be wrong, as he himself often points out, but we have to applaud the (sometimes career-risking) courage with which he has pursued them. In spite of the large amount of rather technical information, the reader is swept along by the author's enthusiasm in conveying it and ability to integrate it into a coherent vision. The reader also learns about the process of science: the thrill of having a new idea and discussing it with others at conferences and cafes (and bars), the drudgery often involved in pursuing the idea, the perils of the formal review process for publications and grant applications, and the roles played by personality conflicts and power politics. Summing Up: Enthusiastically recommended. All levels. "nbsp;(T. Barker, CHOICE, March 2005)

Mars is ingrained in our culture, from David Bowie's extra-terrestrial spiders to H.G. Wells's *The War of the Worlds*. The red planet has inspired hundreds of scientists, authors and filmmakers - but why? What is it about this particular planet that makes it so

intriguing? Ancient mythologies defined Mars as a violent harbinger of war, and astrologers found meaning in the planet's dance through the sky. Stargazers puzzled over Mars's unfamiliar properties; some claimed to see canals criss-crossing its surface, while images from early spacecraft showed startling faces and pyramids carved out of rusty rock. Did Martians exist? If so, were they intelligent, civilised beings? We now have a better understanding of Mars: its red hue, small moons, atmosphere (or lack of it), and mysterious past. Robots have trundled across the planet's surface, beaming back astonishing views of the alien landscape and seeking clues on how it has evolved. While little green Martians are now firmly the preserve of literature, evidence is growing that the now arid, frozen planet was once warmer, wetter, and possibly thronging with microbial life. Soon, we may set foot on the planet. What challenges are involved, and how are we preparing for them? Is there a future for humanity on Mars? In 4th Rock from the Sun, Nicky Jenner reviews Mars in its entirety, exploring its nature, attributes, potential as a human colony and impact on 3rd Rock-culture - everything you need to know about the Red Planet.

Better understanding Mars means better understanding its geology. That's why, sitting atop NASA's Curiosity rover, is ChemCam, an instrument built by Los Alamos National Laboratory that shoots lasers at Martian rocks and analyzes the data. After nearly 1,500 rock zaps, ChemCam has uncovered some surprising facts about the Red Planet, including the discovery of igneous rocks. Soon, a new Los Alamos-built instrument--the SuperCam--will ride aboard the Mars 2020 rover and bring with it enhanced capabilities to unlock new secrets about the planet.

Sedimentary Geology of Mars

A 15-Minute Book

From Myth and Mystery to Recent Discoveries

Educational Version

Oceanography: An Invitation to Marine Science

Volatiles in the Martian Crust

Filled with entertaining history, archival images, pop culture ephemera, and interviews with NASA scientists, The Big Book of Mars is the most comprehensive look at our relationship with Mars—yesterday, today, and tomorrow. Mars has been a source of fascination and speculation ever since the Ancient Sumerians observed its blood-red hue and named it for their god of war and plague. But it wasn't until 1877, when "canals" were observed on the surface of the Red Planet, suggesting the presence of water, that scientists, novelists, filmmakers, and entrepreneurs became obsessed with the question of whether there's life on Mars. In The War of the Worlds, H.G. Wells suggested that we wouldn't need to make contact with Martians—they'd come to us—while, many years later, Nikola Tesla claimed that he did make contact. Since then, Mars has fully invaded pop culture. It has its own day of the week (Tuesday, or

in Latin), candy bar, and iconic Looney Tunes character. It has been the subject of novels and movies, from Ray Bradbury's *The Martian Chronicles* to *Mars Attacks!* and *The Martian*. And it has sparked a space-race feud between Elon Musk and Jeff Bezos, who both hope to send a manned mission to Mars in the near future.

Footprints on Mars, tells three adventure stories of young people living on Mars in the future. *Glen and the Gardens of Mars*, is told in the voice of Glen Roland. At ten years of age, in 2042, he lands on Mars with his astronaut parents, determined to become an astronaut himself, in spite of his loss of a right foot. *Rusty and the Rocks of Mars* is related from the point of view of Rusty Pierce, fifteen, who in 2087, pretends to be a twenty-one year old "hard-rock" miner. He goes to Mars with two other miners, fulfilling his late uncle's dream, by putting a wreath on the Tom Mutch Memorial. Rusty also wants to supplement his uncle's rock collection, with a sample of Native Iron, only found on Asteroids. *Amanda and the Mirrors of Mars*, relates thirteen year old Amanda's efforts, in the twenty-second century, to save her underground town from a terrible flood, caused by giant orbiting mirrors, melting the North Polar ice cap. Could there be life on Mars? Scientists are trying to answer this and many other questions about our next-door planetary neighbor. Introduce young readers to the fascinating scientific mysteries surrounding Mars.

Zapping Rocks on Mars

Record of fluid-rock interactions on Mars from the meteorite ALH84001

Footprints on Mars

Composition, Mineralogy and Physical Properties

Assessment of Mars Science and Mission Priorities

From Habitability to Life on Mars

From Habitability to Life on Mars explores the current state of knowledge and questions on the past habitability of Mars and the role that rapid environmental changes may have played in the ability of prebiotic chemistry to transition to life. It investigates the role that such changes may have played in the preservation of biosignatures in the geological record and what this means for exploration strategies. Throughout the book, the authors show how the investigation of terrestrial analogs to early Martian habitats under various climates and environmental extremes provide critical clues to understand where, what and how to search for biosignatures on Mars. The authors present an introduction to the newest developments and state-of-the-art remote and in situ detection strategies and technologies that are being currently developed to support the upcoming ExoMars and Mars 2020 missions. They show how the current orbital and ground exploration is guiding the selection for future landing sites. Finally, the book concludes by discussing the critical question of the implications and ethics of finding life on Mars. Edited by the lead on a NASA project that searches for habitability and life on Mars leading to the Mars 2020 mission Presents the evidence, questions and answers we have today (including a summary of the current state of knowledge in advance of the ESA ExoMars and NASA Mars 2020 missions) Includes contributions from authors directly involved in past, current and upcoming Mars missions Provides key information as to how Mars rovers, such as ExoMars and Mars 2020, will address the search for life on Mars with

their instrumentation

The Volcanoes of Mars offers a clear, cohesive summary of Mars volcanology. It begins with an introduction to the geology and geography of the red planet and an overview of its volcanic history, and continues to discuss each distinct volcanic province, identifying the common and unique aspects of each region. Incorporating basic volcanological information and constraints on the regional geologic history derived from geologic mapping, the book also examines current constraints on the composition of the volcanic rocks as investigated by both orbiting spacecraft and rovers. In addition, it compares the features of Martian volcanoes to those seen on other volcanic bodies. Concluding with prospects for new knowledge to be gained from future Mars missions, this book brings researchers in volcanology and the study of Mars up to date on the latest findings in the study of volcanoes on Mars, allowing the reader to compare and contrast Martian volcanoes to volcanoes studied on Earth and throughout the Solar System. Presents clearly organized text and figures that will quickly allow the reader to find specific aspects of Martian volcanism Includes definitions of geological and volcanological terms throughout to aid interdisciplinary understanding Summarizes key results for each volcanic region of Mars and provides copious citations to the research literature to facilitate further discovery Synthesizes the most current data from multiple spacecraft missions, including the Mars Reconnaissance Orbiter, as well as geochemical data from Martian meteorites Utilizes published geologic mapping results to highlight the detailed knowledge that exists for each region

This absorbing book tells the story of Mars since the dawn of mankind's curiosity for celestial wonders. It covers everything, right from our ancient beliefs, through the revolution in our concepts of the cosmos around us in the 1600s, to the present day knowledge and beyond. It takes the reader on a journey all the way to the futuristic visions of science fiction and terraformed Mars with conditions suitable to Earth life. The story is told in a readable form with an absence of technical jargon. The text is supported by informative imagery and a simple, but inspiring layout with some special features such as a "flip movie" of the rotation of Mars.

Mars - A Warmer, Wetter Planet

The Story of Meteorite ALH 84001

A True Detective Story on Two Planets

The Story of Mars

Safe on Mars

14 Fun Facts About Mars

**“Sarah Stewart Johnson interweaves her own coming-of-age story as a planetary scientist with a vivid history of the exploration of Mars in this celebration of human curiosity, passion, and perseverance.”—Alan Lightman, author of Einstein’s Dreams
WINNER OF THE PHI BETA KAPPA AWARD FOR SCIENCE • NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • Times (UK) • Library Journal “Lovely . . . Johnson’s prose swirls with lyrical wonder, as varied and multihued as the apricot deserts, butterscotch skies and blue sunsets of Mars.”—Anthony Doerr, The New York Times Book Review Mars was**

once similar to Earth, but today there are no rivers, no lakes, no oceans. Coated in red dust, the terrain is bewilderingly empty. And yet multiple spacecraft are circling Mars, sweeping over Terra Sabaea, Syrtis Major, the dunes of Elysium, and Mare Sirenum—on the brink, perhaps, of a staggering find, one that would inspire humankind as much as any discovery in the history of modern science. In this beautifully observed, deeply personal book, Georgetown scientist Sarah Stewart Johnson tells the story of how she and other researchers have scoured Mars for signs of life, transforming the planet from a distant point of light into a world of its own. Johnson's fascination with Mars began as a child in Kentucky, turning over rocks with her father and looking at planets in the night sky. She now conducts fieldwork in some of Earth's most hostile environments, such as the Dry Valleys of Antarctica and the salt flats of Western Australia, developing methods for detecting life on other worlds. Here, with poetic precision, she interlaces her own personal journey—as a female scientist and a mother—with tales of other seekers, from Percival Lowell, who was convinced that a utopian society existed on Mars, to Audouin Dollfus, who tried to carry out astronomical observations from a stratospheric balloon. In the process, she shows how the story of Mars is also a story about Earth: This other world has been our mirror, our foil, a telltale reflection of our own anxieties and yearnings. Empathetic and evocative, *The Sirens of Mars* offers an unlikely natural history of a place where no human has ever set foot, while providing a vivid portrait of our quest to defy our isolation in the cosmos.

New proof of a nuclear catastrophe on Mars! In an epic story of discovery, strong evidence is presented for a dead civilization on Mars and the shocking reason for its demise: an ancient planetary-scale nuclear massacre leaving isotopic traces of vast explosions that endure to our present age. The story told by a wide range of Mars data is now clear. Mars was once Earth-like in climate, with an ocean and rivers, and for a long period became home to both plant and animal life, including a humanoid civilization. Then, for unfathomable reasons, a massive thermo-nuclear explosion ravaged the centers of the Martian civilization and destroyed the biosphere of the planet. But the story does not end there. This tragedy may explain Fermi's Paradox, the fact that the cosmos, seemingly so fertile and with so many planets suitable for life, is as silent as a graveyard. We must immediately send astronauts to Mars to maximize our knowledge of what happened there, and learn how to avoid Mars' fate. Includes an 8-page color section.

Phenomenal new observations from Earth-based telescopes and Mars-based orbiters, landers, and rovers have dramatically advanced our understanding of the past environments on Mars. These include the first global-scale infrared and reflectance spectroscopic maps of the surface, leading to the discovery of key minerals indicative of specific past climate conditions; the discovery of large reservoirs of subsurface water ice; and the detailed in situ roving investigations of three new landing sites. This an important, new overview of the compositional and mineralogic properties of Mars since the last major study published in 1992. An exciting resource for all researchers and students in planetary science, astronomy,

space exploration, planetary geology, and planetary geochemistry where specialized terms are explained to be easily understood by all who are just entering the field.

Hearing Before the Subcommittee on Science, Technology, and Space of the Committee on Commerce, Science, and Transportation, United States Senate, One Hundred Fourth Congress, Second Session, September 25, 1996

The Martian Surface

The Discovery of a Planetary Nuclear Massacre

The Rock From Mars

Discovery of Evidence of Past Life on Mars

Mineralogy

Explore the universe and immerse yourself in the story of our solar system, planet, and life through meteorites. "Meteorite is a treasure"--Wall Street Journal Meteorites have long been seen as portents of fate and messages from the gods, their fiery remains inspiring worship and giving rise to legends that have persisted for millennia. But beyond the lore, meteorites tell an even greater story: that of our solar system. In *Meteorite*, geologist Tim Gregory shows that beneath the charred crusts of these celestial stones lies a staggering diversity of rock types. Their unique constituents, vibrant colors, and pungent smells contain thrilling tales of interstellar clouds, condensing stardust, and the fiery collisions of entire worlds. Gregory explores the world of meteorites to uncover new insights into what our solar system was like before our sun became a star, into the forging of our planet, and into the emergence of life on it. Humans have long looked to the skies for answers to big questions. *Meteorite* reveals how science is finally arriving at those answers. Often thought of as a volcanically dominated planet, the last several decades of Mars exploration have revealed with increasing clarity the role of sedimentary processes on the Red Planet. Data from recent orbiters have highlighted the role of sedimentary processes throughout the geologic evolution of Mars by providing evidence that such processes are preserved in a rock record that spans a period of over four billion years. Dave Tenenbaum presents information about the significance of the signs of life found in a meteorite from Mars. Scientists now believe that these life signs came from Earth. The University of Wisconsin provides the information as part of the Why Files resource. Why Files uses news and current events to explore science and the issues it raises. The content is associated with specific National Science Education standards.

Evie Bowman and the Rock from Mars

Rock Pushing and Sampling Under Rocks on Mars

The Sirens of Mars

A Martian Trilogy

The Big Book of Mars

4th Rock from the Sun

Hidden beneath the sterile surface of Earth's neighboring planet may be the keys to unlocking the origins of life in the universe. An expert on extreme-life environments, Malcolm Walter demonstrates that similarities between ancient Earth and Mars may prove crucial in the quest for life's origins. From the amazing discovery of microbial life in boiling hot springs on earth—which many scientists believe to be the source of life on

Earth—to the vast oceans and rivers that once covered Mars, Walter argues that the best place to find evidence of life on Mars is out of reach of telescopes and space probes—it's in the rocks and subsurface water of the planet. In *The Search for Life on Mars*, Walter unveils his dramatic plan—already adopted by NASA—for finding these elusive traces of life. Taking a hard look at the latest newsmakers—like the alleged fossil found in a Mars rock—Walter puts the evidence in perspective and shows where our investigations have led thus far, and what the future may hold.

This study, commissioned by the National Aeronautics and Space Administration (NASA), examines the role of robotic exploration missions in assessing the risks to the first human missions to Mars. Only those hazards arising from exposure to environmental, chemical, and biological agents on the planet are assessed. To ensure that it was including all previously identified hazards in its study, the Committee on Precursor Measurements Necessary to Support Human Operations on the Surface of Mars referred to the most recent report from NASA's Mars Exploration Program/Payload Analysis Group (MEPAG) (Greeley, 2001). The committee concluded that the requirements identified in the present NRC report are indeed the only ones essential for NASA to pursue in order to mitigate potential hazards to the first human missions to Mars.

Lewis is just your average school boy who loves space. But when he comes face to face with a Martian Rock during his school trip to the National Space Centre things aren't quite what they seem. Evie Bowman & Brent Harrogate are called to investigate which puts them in a race against time & enemy foes who want the rock for themselves. Precursor Measurements Necessary to Support Human Operations on the Martian Surface

Proceedings, American Philosophical Society (vol. 143, no. 3, 1999)

The Atmosphere and Climate of Mars

U.S. Geological Survey Professional Paper

Abstracts of Papers Submitted to the Twenty-seventh Lunar and Planetary Science Conference, March 18-22, 1996

Mars

Volatiles in the Martian Crust is a vital reference for future missions - including ESA's EXO Mars and NASA's Mars2020 rover - looking for evidence of life on Mars and the potential for habitability and human exploration of the Martian crust. Mars science is a rapidly evolving topic with new data returned from the planet on a daily basis. The book presents chapters written by well-established experts who currently focus on the topic, providing the reader with a fresh, up-to-date and accurate view. Organized into two main sections, the first half of the book focuses on the Martian meteorites and specific volatile elements. The second half of the book explores processes and locations on the crust, including what we have learned about volatile mobility in the Martian crust. Coverage includes data from orbiter and in situ rovers and landers, geochemical and geophysical modeling, and combined data from the SNC meteorites. Presents information about the nature, relationship, and reactivity of chemical elements and compounds on Mars Explores the potential habitability of Mars Provides a comprehensive view of volatiles in the Martian crust from studies of actual samples as well as from the variety of landed missions, including the MER and Curiosity rovers Delivers a vital reference for ongoing and future missions to Mars while synthesizing large data sets and research on volatiles

in the Martian atmosphere Concludes with an informative summary chapter that looks to future Mars missions and what might be learned

In this riveting book, acclaimed journalist Kathy Sawyer reveals the deepest mysteries of space and some of the most disturbing truths on Earth. The Rock from Mars is the story of how two planets and the spheres of politics and science all collided at the end of the twentieth century. It began sixteen million years ago. An asteroid crashing into Mars sent fragments flying into space and, eons later, one was pulled by the Earth's gravity onto an icy wilderness near the southern pole. There, in 1984, a geologist named Roberta Score spotted it, launching it on a roundabout path to fame and controversy. In its new home at NASA's Johnson Space Center in Houston, the rock languished on a shelf for nine years, a victim of mistaken identity. Then, in 1993, the geochemist Donald "Duck" Mittlefehldt, unmasked the rock as a Martian meteorite. Before long, specialist Chris Romanek detected signs of once-living organisms on the meteorite. And the obscure rock became a rock star. But how did nine respected investigators come to make such startling claims about the rock that they triggered one of the most venomous scientific battles in modern memory? The narrative traces the steps that led to this risky move and follows the rippling impact on the scientists' lives, the future of space exploration, the search for life on Mars, and the struggle to understand the origins of life on Earth. From the second the story broke in Science magazine in 1996, it spawned waves of excitement, envy, competitive zeal, and calculation. In academia, in government agencies, in laboratories around the world, and even in the Oval Office—where an inquisitive President Clinton had received the news in secret—players of all kinds plotted their next moves. Among them: David McKay, the dynamic geologist associated with the first moon landing, who labored to achieve at long last a second success; Bill Schopf of UCLA, a researcher determined to remain at the top of his field and the first to challenge McKay's claims; Dan Goldin, the boss of NASA; and Dick Morris, the controversial presidential adviser who wanted to use the story for Clinton's reelection and unfortunately made sure it ended up in the diary of a \$200-an-hour call girl. Impeccably researched and thrillingly involving, Kathy Sawyer's The Rock from Mars is an exemplary work of modern nonfiction, a vivid account of the all-too-human high-stakes drive to learn our true place in the cosmic scheme.

Death on Mars