

found answers to one of our most fundamental questions: Does life exist anywhere else in the universe? Ten years and billions of dollars in the making, the Mars Rover Curiosity is poised to answer this all-important question. In *Mars Rover Curiosity: An Inside Account* from Curiosity's Chief Engineer, Rob Manning, the project's chief engineer, tells of bringing the groundbreaking spacecraft to life. Manning and his team at NASA's Jet Propulsion Laboratory, tasked with designing a lander many times larger and more complex than any before, faced technical setbacks, fights over inadequate resources, and the challenges of leading an army of brilliant, passionate, and often frustrated experts. Manning's fascinating personal account--which includes information from his exclusive interviews with leading Curiosity scientists--is packed with tales of revolutionary feats of science, technology, and engineering. Readers experience firsthand the disappointment at encountering persistent technical problems, the agony of near defeat, the sense of victory at finding innovative solutions to these problems, the sheer terror of staking careers and reputations on a lander that couldn't be tested on Earth, and the rush of triumph at its successful touchdown on Mars on August 5, 2012. This is the story of persistence, dedication, and unrelenting curiosity. Curious George learns about space. "National Geographic and science journalist Marc Kaufman combine inside stories, fascinating facts, and eye-popping pictures, some never before seen, of the red planet and NASA's groundbreaking Curiosity mission. Renowned author Kaufman spent two years embedded with the engineers and scientists at NASA's Jet Propulsion Laboratory, cheering on the rover's spine-tingling landing, learning the backstory of anticipated findings, and witnessing the inescapable frustrations that come from operating a \$2.5-billion multitasking robot on a planet 35 million miles from Earth. With images never published before, and computer-enhanced with colors that make you want to spend your next vacation on Mars, this is the only book that explains everything, detail by detail and moment by moment, about the most ambitious space expedition the human race has ever undertaken."--Provided by publisher. *Mars Geological Enigmas: From the Late Noachian Epoch to the Present Day* presents outstanding questions on the geology of Mars and divergent viewpoints based on varying interpretations and analyses. The result is a robust and comprehensive discussion that provides opportunities for planetary scientists to develop their own opinions and ways forward. Each theme opens with an introduction that includes background on the topic and lays out questions to be addressed. Alternate perspectives are covered for each topic, including methods, observations, analyses, and in-depth discussion of the conclusions. Chapters within each theme reference each other to facilitate comparison and deeper understanding of divergent opinions. Offers a transchronological view of the geological history of Mars, addressing thematic questions from a broad temporal perspective Discusses outstanding questions on Mars from diverging perspectives Includes key questions and answers, as well as a look ahead to which puzzles remain to be solved Weighing as much as a small car, a rover named Curiosity rolls quietly around Mars. Scientific instruments pack its body and cluster at the end of a mechanical arm. An arrangement of lenses and instruments tops its mast, like a face. To the many NASA workers involved in Curiosity's mission on Mars, the rover is not simply a robot, but an astronaut bravely exploring an alien place. Curiosity's instruments collect data and its cameras take images of the Mars landscape, including self-portraits, in vivid color and detail. As it roams and explores, Curiosity will help find the answers to such age-old questions as has there ever been life on Mars? Could there be one day? Could life have previously flourished on Mars? Will humans be able to travel there one day? Can humans one day colonize the red planet? NASA scientists have been interested in answering questions like these for a long time. In November 2011, NASA sent the rover Curiosity to Earth's nearest planetary neighbor. By gathering information about Mars's climate and geology, the robot is helping scientists uncover the secrets of the planet and its past. Since its launch, Curiosity has made some amazing discoveries. The rover found an ancient streambed where water once flowed for thousands of years, and rock samples proved that the surface soil on Mars still has water! In addition, from drilling into Martian rock, the rover detected the key chemicals necessary for life?sulfur, nitrogen, hydrogen, oxygen, phosphorus, and carbon. And Curiosity's measurement of radiation on Mars shows levels similar to that at the International Space Station. These discoveries suggest that some parts of Mars could have been habitable?and may be again in the future. Learn more about the red planet and see what else Curiosity has uncovered! Simple text and "out-of-this-world" photography introduce readers to NASA's Curiosity rover, and its mission to search for signs of past life on Mars. Important details include a history of rovers on Mars, planning and construction of Curiosity, its launch from Earth, landing on Mars, and the science experiments it carried out and their results. Aligned to Common Core Standards and correlated to state standards. A&D Xtreme is an imprint of Abdo Publishing, a division of ABDO.

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