Dreams Of Other Worlds: The Amazing Story Of Unmanned Space Exploration
Synopsis

Dreams of Other Worlds describes the unmanned space missions that have opened new windows on distant worlds. Spanning four decades of dramatic advances in astronomy and planetary science, this book tells the story of eleven iconic exploratory missions and how they have fundamentally transformed our scientific and cultural perspectives on the universe and our place in it. The journey begins with the Viking and Mars Exploration Rover missions to Mars, which paint a startling picture of a planet at the cusp of habitability. It then moves into the realm of the gas giants with the Voyager probes and Cassini's ongoing exploration of the moons of Saturn. The Stardust probe's dramatic round-trip encounter with a comet is brought vividly to life, as are the SOHO and Hipparcos missions to study the Sun and Milky Way. This stunningly illustrated book also explores how our view of the universe has been brought into sharp focus by NASA's great observatories--Spitzer, Chandra, and Hubble--and how the WMAP mission has provided rare glimpses of the dawn of creation. Dreams of Other Worlds reveals how these unmanned exploratory missions have redefined what it means to be the temporary tenants of a small planet in a vast cosmos.

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Customer Reviews

This book is a thoroughly researched chronicle of ten robotic missions, with an overview of the entire field of non-piloted exploration. If it meanders a bit, it succeeds at the most important task: showing readers just how remarkable our robotic missions are. The Introduction sets the stage with the theorists, from the Greek Anaxagoras to Copernicus to the modern day. For a long time, people
have had the notion there were other worlds to explore, but that was science fiction until 1957, when it suddenly appeared practical to send machines (and eventually people) sailing away from Earth. The authors do a good job of featuring all types of missions: planetary observer, rover, deep space, and astronomical. They present two Martian missions (Viking and Mars Exploration Rovers) first, followed by the probes Voyager and Cassini, the comet-sampling Stardust, and SOHO, a mission to study our home star. They break away from voyages to specific destinations to cover Hipparcos, the Spitzer telescope, Chandra, the Hubble, and the Big Bang explorer WMAP. It’s odd there are no Soviet/Russian missions included, and Venus is left off the destination list. There are two European Space Agency missions: Hipparcos, a 1989 mission dedicated to astrometry (distances, locations, and movements of the stars) and Planck, along with the joint Cassini-Huygens mission. All the chapters on individual missions are good, and the authors seem to know all about them. The explanations of spacecraft design, function, and results are succinct and well-done: clearly the authors understand the technical side and have the ability to condense it in terms understandable to the interested public.

Were Rip Van Winkle to have gone to sleep in 1958 instead of going to sleep in the 18th century and just awoken now he would have returned to a world strikingly different than the one he left. Back in 1958 no country on Earth had yet managed to even get an object into space. Now, a mere century, not only have objects gone into space, but they’ve taken people along with them, visited other planets and even left the solar system itself. In this breathtaking work we get a sample of just some of the exciting unmanned space missions that have occurred over the past 50 years. In brief yet thorough chapters this book discusses efforts by NASA and others (NASA often works for example with the European Space Agency) to send unmanned probes into space. For me one of the best sections of this book was its coverage of our journey to Mars. Starting with the Viking 1 and 2 missions of 1976 this book tells the story of how the missions were planned, where they landed, and the tests they performed in search of life on the red planet. From there the book goes on to discuss the more modern Spirit and Opportunity missions which, like Pathfinder from 1998, were able to range freely on the planet because their research tools were on motorized platforms. Another great chapter in this book tells the story of Voyager 1 and Voyager 2 which are now 126 astronomical units and 110 astronomical units respectively away from Earth. In this section we learn about how each of the probes visited Jupiter and Saturn before continuing their missions. From them we’ve also gotten pretty much everything we now know about Uranus and its moon system and Neptune and its moon system.
Last week, NASA announced that Voyager 1, launched 36 years ago, has finally left our solar system and entered interstellar space. A mind-blowing achievement which will allow scientists to confirm some of their theories and expectations of what we will find beyond the reach of our Sun. But Voyager, impressive though it is, is only one of the amazing journeys we are making into space, some with great fanfares and trumpets, like the Mars Rovers expeditions, some less well known but no less important and inspiring for the information they send back. In this book, the authors tell us about eleven of these missions, what scientists have learned from them and how they have impacted on the popular imagination and culture. The main thrust of the book is on the search for conditions suitable for life either on planets within our solar system or on the exoplanets that are now being identified exponentially. The early chapters cover the missions to planets and objects within our own solar system and the later part of the book is given over to the various observational missions looking beyond our little bit of the universe and back through space-time to the earliest observable point after the big bang. The enthusiasm of the authors is infectious and the book is written in such a way that it is easily accessible to the non-scientists among us. It is liberally illustrated with diagrams to help explain some of the concepts as well as pictures from Hubble and other observatories. The authors start with a look at the Mars missions - the Viking and MER Rovers. They explain the technical marvels that got us there and contrast that with the extremely limited computing and camera facilities that were available, particularly on the Viking Rovers.