Solar System Astrophysics Background Science And The Inner Solar System Astronomy And Astrophysics Library V1

Astronomers and astrophysicists are making revolutionary advances in our understanding of planets, stars, galaxies, and even the structure of the universe itself. The Decade of Discovery presents a survey of this exciting field of science and offers a prioritized agenda for space- and ground-based research into the twenty-first century. The book presents specific recommendations, programs, and expenditure levels to meet the needs of the astronomy and astrophysics communities. Accessible to the interested lay reader, the book explores: The technological investments needed for instruments that will be built in the next century. The importance of the computer revolution to all aspects of astronomical research. The potential usefulness of the moon as an observatory site. Policy issues relevant to the funding of astronomy and the execution of astronomical projects. The Decade of Discovery will prove valuable to science policymakers, research administrators, scientists, and students in the physical sciences, and interested lay readers. Alternate Selection, Astronomy Book Club

In preparing the report, Astronomy and Astrophysics in the New Millenium , the AASC made use of a series of panel reports that address various aspects of ground- and space-based astronomy and astrophysics. These reports provide in-depth technical detail. Astronomy and Astrophysics in the New Millenium: An Overview summarizes the science goals and recommended initiatives in a short, richly illustrated, non-technical booklet.

Topics addressed include: interstellar chemistry and primitive bodies; astronomical measurements and nebula models; solar nebula models and meteorite; and planetary accumulation and evolution.

Based on an American Chemical Society Symposium organized by Professors Glenn Seaborg and Oliver Manuel, this volume provides a comprehensive record of different views on this important subject at the end of the 20th century. They have assembled a blend of highly respected experimentalists and theorists from astronomy, geology, meteoritics, planetology and nuclear chemistry and physics to discuss the origin of elements in the solar system. The intent was to include all points of view and let history judge their validity.

The Study of Remnants from the Birth of the Solar System

Working Papers

A Natural History of the Solar System

Communities, Patronage, and Interdisciplinary Science, 1920-1960

Ultraviolet Radiation in the Solar System

The Origin and Evolution of the Solar System

The role of laboratory research and simulations in advancing our understanding of solar system ices (including satellites, KBOs, comets, and giant planets) is becoming increasingly important. Understanding ice surface radiation processing, particle and radiation penetration depths, surface and subsurface chemistry, morphology, phases, density, conductivity, etc., are only a few examples of the inventory of issues that are being addressed by Earth-based laboratory research. As a response to the growing need for cross-disciplinary dialog and communication in the Planetary Ices science community, this book aims to achieve direct dialog and foster focused collaborations among the observational, modeling, and laboratory research communities.

The origin of the solar system has been a matter of speculation for many centuries, and since the time of Newton it has been possible to apply scientific principles to the problem. A succession of theories, starting with that of Pierre Laplace in 1796, has gained general acceptance, only to fall from favor due to its contradiction in some basic scientific principle or new heavenly observation. Modern observations by spacecraft of the solar system, the stars, and extra-solar planetary systems continuously provide new information that may be helpful in finding a plausible theory as well as present new constraints for any such theory to satisfy. The Origin and Evolution of the Solar System begins by describing historical (pre-1950) theories and illustrating why they became unacceptable. The main part of the book critically examines five extant theories, including the current paradigm, the solar nebula theory, to determine how well they fit with accepted scientific principles and observations. This analysis shows that the solar nebula theory satisfies the principles and observational constraints no better than its predecessors. The capture theory put forward by the author fares better and also indicates an initial scenario leading to a causal series of events that explain all the major features of the solar system.

Physics and Chemistry of the Solar System is a broad survey of the Solar System. The book discusses the general properties and environment of our planetary system, including the astronomical perspective, the general description of the solar system and of the sun and the solar nebula). The text also describes the solar system beyond mars, including the major planets; pluto and the icy satellites of the outer planets; the comets and meteors; and the meteorites and asteroids. The inner solar system, including the airless rocky bodies; mars, venus, and earth; and planets and life about other stars, is also encompassed. Mathematicians, chemists, physicists, geologists, astronomers, meteorologists, and biologists will find the book useful.

This fully-updated second edition remains the only truly detailed exploration of the origins of our Solar System, written by an authority in the field. Unlike other authors, Michael Woolfson focuses on the formation of the solar system, engaging the reader in an intelligent yet accessible discussion of the development of ideas about how the Solar System formed from ancient times to the present.Within the last five decades new observations and new theoretical advances have transformed the way scientists think about the problem of finding a plausible theory. Spacecraft and landers have explored the planets of the Solar System, observations have been made of Solar-System bodies outside the region of the planets and planets have been detected and observed around many solar-type stars. This new edition brings in the most recent discoveries, including the establishment of dwarf planets and challenges to the 'standard model' of planet formation — the Solar Nebula Theory.While presenting the most up-to-date material and the underlying science of the theories described, the book avoids technical jargon and terminology. It thus remains a digestible read for the non-expert interested reader, whilst being detailed and comprehensive enough to be used as an undergraduate physics and astronomy textbook, where the formation of the solar system is a key part

of the course.Michael Woolfson is Emeritus Professor of Theoretical Physics at University of York and is an award-winning crystallographer and astronomer.
From the Big Bang to the Solar System
Finding our Place in the Solar System
Priorities in Space Science Enabled by Nuclear Power and Propulsion
Fundamentals of Solar Astronomy

Workshop on the Origins of Solar Systems
This monograph is based on four papers which have been published in Astrophysics and Space Sciences 1970--1974. They contain the results of our joint work started in 1968 at the University of California, San Diego, in La Jolla. The work was based on the belief that the complicated processes by which our solar system was formed can only be clarified by close collaboration between representatives of the physical and chemical sciences. Our investigations have also been strongly supported by work at other institu tions, especially by a group at the Royal Institute of Technology, Stockholm, where a number of plasma experiments have been made in order to clarify basic processes which are relevant to cosmogonic problems. These experiments were, in their turn inspired by theoretical work on primordial processes carried out during the last thirty-five years. We especially want to acknowledge the contributions by Drs N. Herlofson, B. Lehnert, C.-G. Fiilthammar, and Lars Danielsson in Stockholm and by Drs J.
Finding our Place in the Solar System gives a detailed account of how the Earth was displaced from its traditional position at the center of the universe to be recognized as one of several planets orbiting the Sun under the influence of a universal gravitational force. The transition from the ancient geocentric worldview to a modern understanding of planetary motion, often called the Copernican Revolution, is one of the great intellectual achievements of humankind. This book provides a deep yet accessible explanation of the scientific disputes over our place in the solar system and the work of the great scientists who helped settle them. Readers will come away knowing not just that the Earth orbits the Sun, but why we believe that it does so. The Copernican Revolution also provides an excellent case study of what science is and how it works.
Fascinating overview of the most up-to-date knowledge on comets, written for both professionals and amateurs.
Lives of the Planets describes a scientific field in the midst of a revolution. Planetary science has mainly been a descriptive science, but it is becoming increasingly experimental. The space probes that went up between the 1960s and 1990s were primarily generalists-they collected massive amounts of information so that scientists could learn what questions to pursue. But recent missions have become more focused: Scientists know better what information they want and how to collect it. Even now probes are on their way to Mercury, Venus, Mars, and Pluto, with Europa-one of Jupiter's moons-on the agenda. In a sweeping look into the manifold objects inhabiting the depths of space, Lives of the Planets delves into the mythology and the knowledge humanity has built over the ages. Placing our current understanding in historical context, Richard Corfield explores the seismic shifts in planetary astronomy and probes why we must change our perspective of our place in the universe. In our era of extraordinary discovery, this is the first comprehensive survey of this new understanding and the history of how we got here.
Physics of the Solar System
Solar System
Held at Aspen Institute's Wye Plantation Conference Center, Queenstown, Maryland, December 15-19, 1986, December 14-17, 1987
Background Science and the Inner Solar System & Planetary Atmospheres and the Outer Solar System
Structure and Evolutionary History of the Solar System
The History and Practice of Ancient Astronomy
Physics and Chemistry of the Solar System focuses on planetary physics and chemistry. This book consists of 12 chapters. Chapters I to IV cover the general properties and environment of the planetary system. The solar system beyond Mars is elaborated in Chapters V to VIII, while the inner solar system is considered in Chapters XI to XII. In these chapters, this compilation specifically discusses the limitations on big bang nucleosynthesis; structure and classification of galaxies; and mass and angular momentum distribution. The radio wave propagation in space plasmas; interiors of Jupiter and Saturn; density and composition of icy satellites; and evaporation and non-gravitational forces are also deliberated. This text also explains the physical properties of meteorites; geology of the Moon; geophysical data on Mars; and search for extraterrestrial intelligence. This publication is a good reference for first-year graduate students who intend to take graduate courses in specialized areas of planetary sciences, as well as practicing Ph.D. scientists with training in physics, chemistry, geology, astronomy, meteorology, and biology.
A definitive reference on the Dawn mission and its results, covering the formation and evolution of the asteroid belt.
Updated third edition introduces undergraduates to the Solar System's bodies, the processes upon and within them, and their origins and evolution.
An unprecedented number of planets outside of the solar system have been found, with an explosion in the number of discoveries in recent years. Find out what has been happening in this rapidly advancing arena of human exploration, what these extrasolar planets are like, and why some traditional ideas face being thrown out.
The History and Science of Planetary Exploration
Exoplanets and Alien Solar Systems
Advances in Astronomy

The Science of Solar System Ices
Lives of the Planets
Planetary Atmospheres and the Outer Solar System

This exhaustive work covers solar system astrophysics beginning with basic tools of spherical astronomy, and celestial mechanics. Coverage includes the Earth-Moon system and the interior planets; rocks and minerals, including crystallography; atmospheres, with detailed discussions of circulation, applicable also to discussion of the gas giants. The three giant planets are discussed together. This is followed by chapters on moons and rings, comets and meteors, meteorites and asteroids, and a discussion of extrasolar planets. The material is updated to incorporate the latest discoveries of the Mars Rover and the Saturn Cassini missions.

Solar System AstrophysicsBackground Science and the Inner Solar SystemSpringer Science & Business Media

It presents equations and derivations starting from a level that permits one to see the underlying physical ideas. There is no other book that does this on the market. The book presents an up-to-date overview on all essential topics but is concise where possible to keep it a practical resource for courses. The book is based on extensive experience in the class room. Its contents have been field-tested for years by students.

In the history of science the opening up of a new observational or experimental window is always followed by an increase in knowledge of the subject concerned. This is also the case with the subject of this book, ultraviolet radiation (hereafter UV). In principle, the ultraviolet range might be just one more of these windows, of no particular importance. However, the energy per UV photon provides the main peculiarity, its magnitude being great enough to produce important ch- ical reactions in the atmospheres of planets and satellites, thereby a?ecting the transmission of this radiation to the ground. The Sun is the main natural source of UV radiation in the Solar System and our planet is the body where its in?uences can be best tested and the only one where its relation with life can be studied. However, the terrestrial atmosphere blocksmostofthephotonsinthiselectromagneticrangeandastronomershavehad to develop various techniques (balloons, planes and rockets) to cross this barrier and access the information. These tools have been used in parallel to investigate the physical properties of the terrestrial atmosphere and the interaction of its constituents with light. This book will addresses most of these topics.

Dynamics and Evolution, Space Physics, and Spacetime Structure
Astronomy and Astrophysics in the New Millennium
Origin of Elements in the Solar System
Comet Science
Between Fire and Ice
Insights from the Dawn Mission for the Origin of the Solar System

"Exploring the unknown" is a multi-volume series containing a selection of key documents in the history of the U.S. civil space program. Volume V, focusing on the exploration of space by robotic spacecraft that have significantly altered our perspectives on the cosmos, prints 121 key documents on the history of space science, planetary exploration of the solar system, and space astrophysics, edited for ease of use. Many of these documents are published here for the first time. Each is introduced by a headnote providing context, bibliographical information, and background information necessary to understanding the document. This documentary history is an essential reference for anyone interested in the history of the U.S. civil space program and its development over time. It will serve as a valuable source both for students and scholars. Additional volumes will appear later that trace space science and the programmatic developments in the history of the U.S. exploration of space.

Geology – Basics for Engineers (second edition) presents the physical and chemical characteristics of the Earth, the nature and the properties of rocks and unconsolidated deposits/sediments, the action of water, how the Earth is transformed by various phenomena at different scales of time and space. The book shows the engineer how to take geological conditions into account in their projects, and how to exploit a wide range of natural resources in an intelligent way, reduce geological hazards, and manage subsurface pollution. This second edition has been fully revised and updated. Through a problem-based learning approach, this instructional text imparts knowledge and practical experience to engineering students (undergraduate and graduate level), as well as to experts in the fields of civil engineering, environmental engineering, earth sciences, architecture, land and urban planning. Free digital supplements to the book, found on the book page, contain solutions to the problems and animations that show additional facets of the living Earth. The original French edition of the book (2007) won the prestigious Roberval Prize, an international contest organized by the University of Technology of Compiegne in collaboration with the General Council of Oise, France. Geology, Basics for Engineers was selected out of a total of 110 candidates. The jury praised the book as a "very well conceived teaching textbook" and underscored its highly didactic nature, as well as the excellent quality of its illustrations. Features: Offers an exhaustive outline of the methods and techniques used in geology, with a study of the nature and properties of the principal soils and rocks Helps students understand how geological conditions should be taken into account by the engineer by taking a problem-solving approach Contains extensive figures and examples, solutions to probems, and illustrative animations Presents a highly didactic and synthetic work intended for engineering students as well as experts in civil engineering, environmental engineering, the earth sciences, and architecture

In 2003, NASA began an R&D effort to develop nuclear power and propulsion systems for solar system exploration. This activity, renamed Project Prometheus in 2004, was initiated because of the inherent limitations in photovoltaic and chemical propulsion systems in reaching many solar system objectives. To help determine appropriate missions for a nuclear power and propulsion capability, NASA asked the NRC for an independent assessment of potentially highly meritorious missions that may be enabled if space nuclear systems became

operational. This report provides a series of space science objectives and missions that could be so enabled in the period beyond 2015 in the areas of astronomy and astrophysics, solar system exploration, and solar and space physics. It is based on but does not reprioritize the findings of previous NRC decadal surveys in those three areas.

The History and Practice of Ancient Astronomy combines new scholarship with hands-on science to bring readers into direct contact with the work of ancient astronomers. While tracing ideas from ancient Babylon to sixteenth-century Europe, the book places its greatest emphasis on the Greek period, when astronomers developed the geometric and philosophical ideas that have determined the subsequent character of Western astronomy. The author approaches this history through the concrete details of ancient astronomical practice. Carefully organized and generously illustrated, the book can teach readers how to do real astronomy using the methods of ancient astronomers. For example, readers will learn to predict the next retrograde motion of Jupiter using either the arithmetical methods of the Babylonians or the geometric methods of Ptolemy. They will learn how to use an astrolabe and how to design sundials using Greek and Roman techniques. The book also contains supplementary exercises and patterns for making some working astronomical instruments, including an astrolabe and an equatorium. More than a presentation of astronomical methods, the book provides a critical look at the evidence used to reconstruct ancient astronomy. It includes extensive excerpts from ancient texts, meticulous documentation, and lively discussions of the role of astronomy in the various cultures. Accessible to a wide audience, this book will appeal to anyone interested in how our understanding of our place in the universe has changed and developed, from ancient times through the Renaissance.

Formation Of The Solar System, The: Theories Old And New (2nd Edition)

The Scientific Story of the Copernican Revolution

A New Science Strategy for Space Astronomy and Astrophysics

Selected Documents in the History of the U.S. Civil Space Program

An Introduction to the Solar System

Basics for Engineers, Second Edition

This book is a direct sequel to: B. Bcrtotri and P. Farinclla, "Physics of the Earth and the Solar System, Dynamics and Evolution. Space Navigation. Spa cc-Time Structure" (Kluwcr Academic Publishers, 1990). Nearly 15 years af tcr its publication it became evident that the volume was in need of a new edition to keep up with the outstanding progress and the changing perspectives in this field. David Vokrouhlicky agreed to collaborate on the project and be the third author. On March 25, 2000. after a tong illness and a heart transplant. Paolo Farinella passed away. We then decided that. rather than aiming at a second edition, it made more sense to rewrite the book anew. While its basic content and the structure of the chapters are the same, important new topics have been added, including the extrasolar planetary systems, transneptunian objects. accurate determination of reference frames and new space projects. Greater relevance has been given to scmiquantitarive discussions before intro ducing formal developments: many figures have been added and updated and several errors corrected. More emphasis has given to the solar system, whereas geophysical topics have been left at a less advanced level. To mark this change the slightly differ ent title "Physics of the Solar System" was chosen. We wish to dedicate this book to the memory of Paolo Farinella. an out standing scientist, an invaluable collaborator and a dear friend.

The second edition of Solar System Astrophysics: Background Science and the Inner Solar System provides new insights into the burgeoning field of planetary astronomy. As in the first edition, this volume begins with a rigorous treatment of coordinate frames, basic positional astronomy, and the celestial mechanics of two and restricted three body system problems. Perturbations are treated in the same way, with clear step-by-step derivations. Then the Earth's gravitational potential field and the Earth-Moon system are discussed, and the exposition turns to radiation properties with a chapter on the Sun. The exposition of the physical properties of the Moon and the terrestrial planets are greatly expanded, with much new information highlighted on the Moon, Mercury, Venus, and Mars. All of the material is presented within a framework of historical importance. This book and its sister volume, Solar System Astrophysics: Background Science and the Inner Solar system, are pedagogically well written, providing clearly illustrated explanations, for example, of such topics as the numerical integration of the Adams-Williamson equation, the equations of state in planetary interiors and atmospheres, Maxwell’s equations as applied to planetary ionospheres and magnetospheres, and the physics and chemistry of the Habitable Zone in planetary systems. Together, the volumes form a comprehensive text for any university course that aims to deal with all aspects of solar and extra-solar planetary systems. They will appeal separately to the intellectually curious who would like to know how just how far our knowledge of the solar system has progressed in recent years.

The birth and evolution of our solar system is a tantalizing mystery that may one day provide answers to the question of human origins. From Dust to Life tells the remarkable story of how the celestial objects that make up the solar system arose from common beginnings billions of years ago, and how scientists and philosophers have sought to unravel this mystery down through the centuries, piecing together the clues that enabled them to deduce the solar system's layout, its age, and the most likely way it formed. Drawing on the history of astronomy and the latest findings in astrophysics and the planetary sciences, John Chambers and Jacqueline Mitton offer the most up-to-date and authoritative treatment of the subject available. They examine how the evolving universe set the stage for the appearance of our Sun, and how the nebulous cloud of gas and dust that accompanied the young Sun eventually became the planets, comets, moons, and asteroids that exist today. They explore how each of the planets acquired its unique characteristics, why some are rocky and others gaseous, and why one planet in particular--our Earth--provided an almost perfect haven for the emergence of life. From Dust to Life is a must-read for anyone who desires to know more about how the solar system came to be. This enticing book takes readers to the very frontiers of modern research, engaging with the latest controversies and debates. It reveals how ongoing discoveries of far-distant extrasolar planets and planetary

systems are transforming our understanding of our own solar system's astonishing history and its possible fate.
There are several textbooks available on solar astronomy which deal with advanced astrophysical aspects of solar physics, and books which provide very elementary knowledge about the Sun. This book will help to bridge the gap. It aims to stimulate interest in solar astronomy, presenting at one place the basic methods and techniques used in the field, together with the latest findings and the excitement in solar physics. As solar astronomy is becoming very popular among amateur astronomers and laymen, the book provides the practical knowledge to build simple solar telescopes and other equipment for making solar observations. Amateur astronomers have made important contributions to solar astronomy, and this book will help to guide them in their endeavours. The book can also serve as a text for undergraduate and graduate students starting out on solar physics. Using it, graduate students can easily embark on specific topics of research in solar astronomy.
Exploring the Solar System
Astronomy and Astrophysics Panel Reports
Background Science and the Inner Solar System
Implications of Post-1957 Observations
The Origin and Evolution of Our Solar System
A Source Book in Astronomy and Astrophysics, 1900-1975

In this highly accessible book, leading scientists from around the world give a general overview of research advances in their subject areas within the field of Astronomy. They describe some of their own cutting-edge research and give their visions of the future. Re-written in a popular and well-illustrated style, the articles are mainly derived from scholarly and authoritative papers published in special issues of the Royal SocietyOCOs Philosophical Transactions, the worldOCOs longest running scientific journal. Carefully selected by the journalOCOs editor, topics include the Big Bang creation of the universe, the formation and evolution of the stars and galaxies, cold dark matter, explosive sun-spot events, and humankindOCOs exploration of the solar system. The book conveys the excitement and enthusiasm of the authors for their work at the frontiers of astronomy. All are definitive reviews for people with a general interest in the future directions of science."

Beginning in the early days of the Space Age - well before the advent of manned spaceflight - the United States, followed soon by other nations, undertook an ambitious effort to study the planets of the solar system. The remarkable fruits of this research revolutionized the public's view of their celestial neighbors, capturing the imaginations of people from all backgrounds like nothing else save the Apollo lunar missions. From the first space probes to the most recent planetary rovers, they have continually delivered impressive discoveries and reshaped our understanding of the cosmos. Offering fascinating investigations into this crucial chapter in space history, this collection of specially commissioned essays from leading historians opens new vistas in our understanding of the development of planetary science.

This book, first published in 1996, examines how American scientists collaborated to better understand the solar system.

The book covers the field of solar system astrophysics beginning with basic tools of spherical astronomy and coordinate frames and celestial mechanics. It therefore presents equations and derivations starting from a level that permits one to see the underlying physical ideas. An up-to-date overview on all essential topics is presented, but is concise where possible. The text is based on extensive experience in the classroom and its contents have been field-tested by students for years. The material has been updated in the last few months to take advantage of the newer discoveries of the Mars Rover and the Saturn Cassini missions.

Magnetoseismology
The Decade of Discovery in Astronomy and Astrophysics
Exploring the Unknown
Solar System Astrophysics
Panel Reports
From Dust to Life

This volume contains working papers on astronomy and astrophysics prepared by 15 non-National Research Council panels in areas ranging from radio astronomy to the status of the profession.

The Solar System is a complex and fascinating dynamical system. This is the first textbook to describe comprehensively the dynamical features of the Solar System and to provide students with all the mathematical tools and physical models they need to understand how it works. It is a benchmark publication in the field of planetary dynamics and destined to become a classic. Clearly written and well illustrated, Solar System Dynamics shows how a basic knowledge of the two- and three-body problems and perturbation theory can be combined to understand features as diverse as the tidal heating of Jupiter's moon Io, the origin of the Kirkwood gaps in the asteroid belt, and the radial structure of Saturn's rings. Problems at the end of each chapter and a free Internet Mathematica ® software package are provided. Solar System Dynamics provides an authoritative textbook for courses on planetary dynamics and celestial mechanics. It also equips students with the mathematical tools to tackle broader courses on dynamics, dynamical systems, applications of chaos theory and non-linear dynamics.

Written by a researcher at the forefront of the field, this first comprehensive account of magnetoseismology conveys the physics behind these movements and waves, and explains how to detect and investigate them. Along the way, it describes the principles as applied to remote sensing of near-Earth space and related remote sensing techniques, while also comparing and intercalibrating magnetoseismology with other techniques. The example applications include advanced data analysis techniques that may find wider used in areas ranging from geophysics to medical imaging, and remote sensing using radar systems that are of relevance to defense surveillance systems. As a result, the book not only reviews the status quo, but also anticipates new developments. With many figures and illustrations, some in full color, plus additional computational codes for analysis and evaluation. Aimed at graduate readers, the text assumes knowledge of electromagnetism and physical processes at degree level, but introductory chapters will provide an overview of the relevant plasma physics and magnetospheric physics. The book will thus be of interest to entry-level and established researchers in physics of the Earth's magnetosphere and ionosphere, as well as to students, academics and scientifically literate laypersons with an interest in understanding space weather

processes and how these relate to the dynamic behavior of near-Earth space.

Combining the latest astronomical results with a historical perspective, Solar System: Between Fire and Ice takes you on a fabulous tour of our intriguing Solar System. Not content with a conventional discourse restricted to the major and minor bodies, astronomers Hockey, Bartlett, and Boice venture beyond the limits of our system to look at exoplanets and to consider future trends in space exploration and tourism. They discuss not only what scientists know about planets, asteroids, and comets but how the discoveries were made. With extensive teaching experience, their accessible prose clearly explains essential physical concepts. Lavishly illustrated as well as carefully researched, Solar System: Between Fire and Ice delights the eyes as well as feeding the mind. Detailed appendices provide additional technical data and resources for your own on-line voyage of discovery. Whether you are an educated layperson, student, teacher, amateur astronomer, or merely curious, you will come away having learned the most up-to-date knowledge and enjoyed the process. The authors bring a unique perspective to this subject, combining their years of experience in research, teaching, and history of planetary science. Prof. Thomas Hockey is a professor of astronomy, specializing in planetary science and the history of science. Dr. Jennifer Bartlett is an astronomer with a forte in dynamical motions of asteroids with liberal arts teaching experience. Dr. Daniel Boice is an active research astronomer in planetary science, especially comets, with considerable teaching experience. "In the 1980s and 90s the Viking and Voyager missions provided droves of exciting information, generating a new level of public interest. Textbooks were rewritten and scientists worked to understand the data during mission poor period that followed. In recent times, however, we have entered a new era. There has been a multinational effort to expand our knowledge of the Solar System. Data from these missions has been freely shared and has again raised the level of public interest. Within this era of renewed interest, it is appropriate, as is done in this book, to provide the public with an effort to present an integrated view of our Solar System and questions that the discovery of extrasolar planets have raised with regard to the Solar System as a whole." Professor Reta Beebe, recipient of NASA ' s Exceptional Public Service Medal "I understand this book to be aimed at a general audience, but I can also see its use as a text in astronomy classes, especially in a community school or situations where students typically resist reading the textbook. The writing is light and entertaining, and will engage students, yet it thoroughly covers all the basic concepts of a typical Astro 101 class." - Dr. Katy Garmany, winner of the American Astronomical Society ' s Annie J. Cannon Award.

Ground-based Remote Sensing of Earth's Magnetosphere

Solar System Astronomy in America

Vesta and Ceres

Geology

Solar System Dynamics

Physics and Chemistry of the Solar System