

Horizons Exploring The Universe 11th Edition

? J. Andersen Niels Bohr Institute for Astronomy Physics and Geophysics Astronomical Observatory Copenhagen ja@astro.ku.dk The development of astronomy worldwide begins at the roots: Already from childhood, humans of all nations and civilizations seem to share an innate fascination with the sky. Yet, people in different regions of the world have vastly different possibilities for pursuing this interest. In wealthy, industrialised societies the way is open to a school or higher education in science, possibly leading to a career in astronomy or basic or applied space science for the benefit of the country as well as the individual. In other regions, neither the financial nor the trained human resources are sufficient to offer that avenue to the future of the young generation, or those intellectual resources to the development of their country. This book addresses ways and means by which these obstacles can be, if not fully overcome, then at least significantly reduced.

4LTR Press solutions give students the option to choose the format that best suits their learning preferences. This option is perfect for those students who focus on the textbook as their main course resource. Based on ongoing, cutting-edge research into student workflows and preferences, ASTRO 3 engages readers of all generations and learning styles by blending the best of print and digital, including an easy-reference paperback, convenient tear-out Chapter Review Cards, and an innovative online experience -- all at an affordable price. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Multi-armed bandits is a rich, multi-disciplinary area that has been studied since 1933, with a surge of activity in the past 10-15 years. This is the first book to provide a textbook like treatment of the subject. For the intermediate-level course, the Fifth Edition of this widely used text takes modern physics textbooks to a higher level. With a flexible approach to accommodate the various ways of teaching the course (both one- and two-term tracks are easily covered), the authors recognize the audience and its need for updated coverage, mathematical rigor, and features to build and support student understanding. Continued are the superb explanatory style, the up-to-date topical coverage, and the Web enhancements that gained earlier editions worldwide recognition. Enhancements include a streamlined approach to nuclear physics, thoroughly revised and updated coverage on particle physics and astrophysics, and a review of the essential Classical Concepts important to students studying Modern Physics.

Good, No Highlights, No Markup, all pages are intact, Slight Shelfwear, may have the corners slightly dented, may have slight color changes/slightly damaged spine.

The 13th Edition of HORIZONS means the proven Seeds/Backman approach and trusted content, fully updated with the latest discoveries and resources to meet the needs of today's diverse students.

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It's been ten years since open data first broke onto the global stage. Over the past decade, thousands of programmes and projects around the world have worked to open data and use it to address a myriad of social and economic challenges. Meanwhile, issues related to data rights and privacy have moved to the centre of public and political discourse. As the open data movement enters a new phase in its evolution, shifting to target real-world problems and embed open data thinking into other existing or emerging communities of practice, big questions still remain. How will open data initiatives respond to new concerns about privacy, inclusion, and artificial intelligence? And what can we learn from the last decade in order to deliver impact where it is most needed? The State of Open Data brings together over 60 authors from around the world to address these questions and to take stock of the real progress made to date across sectors and around the world, uncovering the issues that will shape the future of open data in the years to come.

Pope Francis offers a profound and compelling reflection on humanity's need for faith in his first encyclical, *Lumen Fidei*, which completes the work of his predecessor, Pope Benedict XVI. Without the light of faith, he writes, "all other lights begin to dim." Speaking of those today who view faith as a kind of darkness or only to be sought when reason fails, the Holy Father says faith "sees things as Jesus himself sees them." Far from divorcing us from reality, our faith in Jesus "enables us to grasp reality's deepest meaning and to see how much God loves this world." Book jacket.

This edition of UNIVERSE Hybrid 8e means the same proven Seeds/Backman approach and trusted content, fully updated with the latest discoveries and resources to meet the needs of today's diverse students.

After her mother's mysterious death, a young woman is summoned to the floating city of Sky in order to claim a royal inheritance she never knew existed in the first book in this award-winning fantasy trilogy from the NYT bestselling author of *The Fifth Season*. Yeine Darr is an outcast from the barbarian north. But when her mother dies under mysterious circumstances, she is summoned to the majestic city of Sky. There, to her shock, Yeine is named an heiress to the king. But the throne of the Hundred Thousand Kingdoms is not easily won, and Yeine is thrust into a vicious power struggle with cousins she never knew she had. As she fights for her life, she draws ever closer to the secrets of her mother's death and her family's bloody history. With the fate of the world hanging in the balance, Yeine will learn how perilous it can be when love and hate - and gods and mortals - are bound inseparably together. *The Inheritance Trilogy* *The Hundred Thousand Kingdoms* *The Broken Kingdoms* *The Kingdom of Gods* *The Inheritance Trilogy* (omnibus edition) *Shades in Shadow: An Inheritance Triptych* (e-only short fiction) *The Awakened Kingdom* (e-only novella) For more from N. K. Jemisin, check out: *Dreamblood Duology* *The Killing Moon* *The Shadowed Sun* *The Broken Earth* *The Fifth Season* *The Obelisk Gate* *The Stone Sky*

This Intergovernmental Panel on Climate Change Special Report (IPCC-SREX) explores the challenge of understanding and managing the risks of climate extremes to advance climate change adaptation. Extreme weather and climate events, interacting with exposed and vulnerable human and natural systems, can lead to disasters. Changes in the frequency and severity of the physical events affect disaster risk, but so do the spatially diverse and temporally dynamic patterns of exposure and vulnerability. Some types of extreme weather and climate events have increased in frequency or magnitude, but populations and assets at risk have also increased, with consequences for disaster risk. Opportunities for managing risks of weather- and climate-related disasters exist or can be developed at any scale, local to international. Prepared following strict IPCC procedures, SREX is an invaluable assessment for anyone interested in climate extremes, environmental disasters and adaptation to climate change, including policymakers, the private sector and academic researchers.

Fascinating, engaging, and extremely visual, *FOUNDATIONS OF ASTRONOMY*, Thirteenth Edition, emphasizes the scientific method throughout as it guides students to answer two fundamental questions: What are we? And how do we know? In addition to exploring the newest developments and latest discoveries in the exciting field of astronomy,

authors Michael Seeds and Dana Backman discuss the interplay between evidence and hypothesis, providing both factual information and a conceptual framework for understanding the logic of science. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. One of few truly gifted essayists who have turned their talents to science, Wyn Wachhorst here fashions a luminous meditation on the meaning of space exploration from a montage of images and reflections on humanity's dream of spaceflight. In a survey of major figures from Johannes Kepler to Wernher von Braun, he sees in the rise of spaceflight a metaphor of modern history as a recurrent story of transformation and rebirth. Other essays offer new perspectives on the nature of wonder, recall the romantic vision of the decades prior to Sputnik ("nostalgia for a bygone future"), and look at the larger meaning of the moon landing, seeing in spaceflight not only a spiritual quest in the broadest sense of the word, but a cure for the withered capacity for wonder that afflicts the postmodern mind.

A coherent introduction for researchers in astronomy, particle physics, and cosmology on the formation and evolution of galaxies.

What shape is the universe? Is it curved and closed in on itself? Is it expanding? Where is it headed? Could space be wrapped around itself, such that it produces ghost images of faraway galaxies? Such are the questions posed by Jean-Pierre Luminet in *The Wraparound Universe*, which he then addresses in clear and accessible language. An expert in black holes and the big bang, he leads us on a voyage through the surprising byways of space-time, where possible topologies of the universe, explorations of the infinite, and cosmic mirages combine their mysterious traits and unlock the imagination. *The Wraparound Universe* is a general-audience book about the overall topology or shape of the universe. The central question addressed is whether it is possible that the universe is wrapped around in an interesting way, and what impact this would have on astronomical observations and our understanding of cosmology. Along the way many of the general features and much of the history of the modern picture of cosmology are discussed. A half century ago, a shocking *Washington Post* headline claimed that the world began in five cataclysmic minutes rather than having existed for all time; a skeptical scientist dubbed the maverick theory the Big Bang. In this amazingly comprehensible history of the universe, Simon Singh decodes the mystery behind the Big Bang theory, lading us through the development of one of the most extraordinary, important, and awe-inspiring theories in science.

The Global Innovation Index 2020 provides detailed metrics about the innovation performance of 131 countries and economies around the world. Its 80 indicators explore a broad vision of innovation, including political environment, education, infrastructure and business sophistication. The 2020 edition sheds light on the state of innovation financing by investigating the evolution of financing mechanisms for entrepreneurs and other innovators, and by pointing to progress and remaining challenges – including in the context of the economic slowdown induced by the coronavirus disease (COVID-19) crisis. Once perceived as distant, cold, dark, and seemingly unknowable, Pluto had long been marked as the farthest and most unreachable frontier for solar system exploration. After Voyager accomplished its final planetary reconnaissance at Neptune in 1989, Pluto and its cohort in the Kuiper Belt beckoned as the missing puzzle piece for completing the first reconnaissance of our solar system. In the decades following Voyager, a mission to the Pluto system was not only imagined but also achieved, culminating with the historic 2015 flyby by the New Horizons spacecraft. Pluto and its satellite system ("the Pluto system"), including its largest moon, Charon, have been revealed to be worlds of enormous complexity that fantastically exceed preconceptions. *The Pluto System After New Horizons* seeks to become the benchmark for synthesizing our understanding of the Pluto system. The volume's lead editor is S. Alan Stern, who also serves as NASA's New Horizons Principal Investigator; co-editors Richard P. Binzel, William M. Grundy, Jeffrey M. Moore, and Leslie A. Young are all co-investigators on New Horizons. Leading researchers from around the globe have spent the last five years assimilating Pluto system flyby data returned from New Horizons. The chapters in this volume form an enduring foundation for ongoing study and understanding of the Pluto system. The volume also advances insights into the nature of dwarf planets and Kuiper Belt objects, providing a cornerstone for planning new missions that may return to the Pluto system and explore others of the myriad important worlds beyond Neptune.

What existed before the Universe was created? Where does self-worth come from? Do the ends always justify the means? The *Philosophy Book* answers the most profound questions we all have. It is your visual guide to the fundamental nature of existence, society, and how we think. Discover what it means to be free, whether science can predict the future, or how language shapes our thoughts. Learn about the world's greatest philosophers, from Plato and Confucius to modern thinkers such as Chomsky and Derrida and follow charts and timelines that graphically show the progression of ideas and logic. Written in plain English, with concise explanations of branches of philosophy such as metaphysics and ethics, it untangles complicated theories and makes sense of abstract concepts. It is an ideal reference whether you're a student or a general reader, with simple explanations of big ideas, including the four noble truths, the soul, class struggle, moral purpose, and good and evil. If you're curious about the deeper questions in life, *The Philosophy Book* is both an invaluable reference and illuminating read.

NEW YORK TIMES BEST SELLER • The epic story of the greatest quest in all of science—the holy grail of physics that would explain the creation of the universe—from renowned theoretical physicist and author of *The Future of the Mind* and *The Future of Humanity* When Newton discovered the law of gravity, he unified the rules governing the heavens and the Earth. Since then, physicists have been placing new forces into ever-grandier theories. But perhaps the ultimate challenge is achieving a monumental synthesis of the two remaining theories—relativity and the quantum theory. This would be the crowning achievement of science, a profound merging of all the forces of nature into one beautiful, magnificent equation to unlock the deepest mysteries in science: What happened before the Big Bang? What lies on the other side of a black hole? Are there other universes and dimensions? Is time travel possible? Why are we here? Kaku also explains the intense controversy swirling around this theory, with Nobel laureates taking opposite sides on this vital question. It is a captivating, gripping story; what's at stake is nothing less than our conception of the universe. Written with Kaku's trademark enthusiasm and clarity, this epic and engaging journey is the story of *The God Equation*.

This accessible textbook is the only introduction to linguistics in which each chapter is written by an expert who teaches courses on that topic, ensuring balanced and uniformly excellent coverage of the full range of modern linguistics. Assuming no prior knowledge the text offers a clear introduction to the traditional topics of structural linguistics (theories of sound, form, meaning, and language change), and in addition provides full coverage of contextual linguistics, including separate chapters on discourse, dialect variation, language and culture, and the politics of language. There are also up-to-date separate chapters on language and the brain, computational linguistics, writing, child language acquisition, and second-language learning. The breadth of the textbook makes it ideal for introductory courses on language and linguistics offered by departments of English, sociology, anthropology, and communications, as well as by linguistics departments.

Are we alone? asks the writeup on the back cover of the dust jacket. The contributors to this collection raise questions that may have been overlooked by physical scientists about the ease of establishing

meaningful communication with an extraterrestrial intelligence. By drawing on issues at the core of contemporary archaeology and anthropology, we can be much better prepared for contact with an extraterrestrial civilization, should that day ever come. NASA SP-2013-4413.

In *The Ikigai Journey*, authors Hector Garcia and Francesc Miralles take their international bestseller *Ikigai: the Japanese Secret to a Long and Happy Life* a step further by showing you how to find your own ikigai through practical exercises, such as employing new habits and stepping outside your comfort zone. Ikigai is the place where our passion (what we love), mission (what we hope to contribute), vocation (the gifts we have to offer the world) and profession (how our passions and talents can become a livelihood) converge, giving us a personal sense of meaning. This book helps you bring together all of these elements so that you can enjoy a balanced life. Our ikigai is very similar to change: it is a constant that transforms depending on which phase of life we are in. Our "reason for being" is not the same at 15 as it is at 70. Through three sections, this book helps you to accept and embrace that—acting as a tool to revolutionize your future by helping you to understand the past, so you can enjoy your present. Section 1—Journey Through the Future: Tokyo (a symbol of modernity and innovation) Section 2—Journey Through the Past: Kyoto (an ancient capital moored in tradition) Section 3—Journey Through the Present: Ise (an ancient shrine that is destroyed and rebuilt every twenty years) Japan has one of the longest life spans in the world, and the greatest number of centenarians—many of whom cite their strong sense of ikigai as the basis for their happiness and longevity. Unlike many "self-care" practices, which require setting aside time in an increasingly busy world, the ikigai method helps you find peace and fulfillment in your busy life.

Was Darwin really inspired by Galápagos finches? Did Einstein's wife secretly contribute to his theories? Did Franklin fly a kite in a thunderstorm? Did a falling apple lead Newton to universal gravity? Did Galileo drop objects from the Leaning Tower of Pisa? Did Einstein really believe in God? *Science Secrets* answers these questions and many others. It is a unique study of how myths evolve in the history of science. Some tales are partly true, others are mostly false, yet all illuminate the tension between the need to fairly describe the past and the natural desire to fill in the blanks. Energetically narrated, *Science Secrets* pits famous myths against extensive research from primary sources in order to accurately portray important episodes in the sciences. Alberto A. Martínez analyzes how such myths grow and rescues neglected facts that are more captivating than famous fictions. Moreover, he shows why opinions that were once secret and seemingly impossible are now scientifically compelling. The book includes new findings related to the Copernican revolution, alchemy, Pythagoras, young Einstein, and other events and figures in the history of science.

Fully updated to reflect the latest cutting-edge discoveries, the Eleventh Edition of Mike Seeds' and Dana Backman's best-selling *HORIZONS: EXPLORING THE UNIVERSE* engages students by focusing on two central questions: *How Do We Know?*, which emphasizes the role of evidence in the scientific process, providing insights into how science works, and *What Are We?*, which highlights our place as planet dwellers in an evolving universe, guiding students to ask questions about where we came from and how we formed -- a perspective that the study of astronomy is uniquely positioned to emphasize. And, because every course is as unique as its instructor-and its students-*HORIZONS* is supported by a range of teaching and learning solutions that allow you to craft the best course for your approach and course needs. Our innovative instructor resources include WebAssign online homework management and exclusive audience response technology. Students can select from several eBook options, student tutorial systems, or virtual laboratory experiments. *HORIZONS* provides the ideal foundation-our powerful technology tools are the building blocks that help you customize your course to fit your and your students' needs. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

An ideal resource for lecturers, this book provides a comprehensive review of experimental space astronomy. The number of astronomers whose knowledge and interest is concentrated on interpreting observations has grown substantially in the past decades; yet, the number of scientists who are familiar with and capable of dealing with instrumentation has dwindled. All of the authors of this work are leading and experienced experts and practitioners who have designed, built, tested, calibrated, launched and operated advanced observing equipment for space astronomy. This book also contains concise information on the history of the field, supported by appropriate references. Moreover, scientists working in other fields will be able to get a quick overview of the salient issues of observing photons in any one of the various energy, wavelength and frequency ranges accessible in space. This book was written with the intention to make it accessible to advanced undergraduate and graduate students.

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With this newly revised 7th edition of *UNIVERSE: SOLAR SYSTEM, STARS, AND GALAXIES*, International Edition Mike Seeds' and Dana Backman's goal is to help students use astronomy to understand science and use science to understand what we are. Fascinating and engaging, this text illustrates the scientific method and guides students to answer these fundamental questions: "What are we?" and "How do we know?" In discussing the interplay between evidence and hypothesis, the authors provide not just facts but a conceptual framework for understanding the logic of science. The book vividly conveys their love of astronomy and illustrates how students can comprehend their place in the universe by grasping a small set of physical laws. Crafting a story about astronomy, the authors show students how to ask questions to gradually puzzle out the beautiful secrets of the physical world. The revision addresses new developments in astrophysics and cosmology, plus the latest discoveries, including evidence of a new world beyond Pluto and new evidence of dark energy and the acceleration of the universe.

Now enhanced by new end-of-chapter material in the MindTap online homework system, this new Hybrid version of Mike Seeds', Dana Backman's, and Michele Montgomery's best-selling *HORIZONS: EXPLORING THE UNIVERSE*, Enhanced Thirteenth Edition, engages students by focusing on two central questions: *How Do We Know?* which emphasizes the role of evidence in the scientific process, providing insights into how science works; and *What Are We?* which highlights our place as planet dwellers in an evolving universe, guiding students to ask questions about where we came from and how we formed a perspective that the study of astronomy is uniquely positioned to emphasize. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Astronomy is written in clear non-technical language, with the occasional touch of humor and a wide range of clarifying illustrations. It has many analogies drawn from everyday life to help non-science majors appreciate, on their own terms, what our modern exploration of the universe is revealing. The book can be used for either a one-semester or two-semester introductory course (bear in mind, you can customize your version and include only those chapters or sections you will be teaching.) It is made available free of charge in electronic form (and low cost in printed

form) to students around the world. If you have ever thrown up your hands in despair over the spiraling cost of astronomy textbooks, you owe your students a good look at this one. Coverage and Scope Astronomy was written, updated, and reviewed by a broad range of astronomers and astronomy educators in a strong community effort. It is designed to meet scope and sequence requirements of introductory astronomy courses nationwide. Chapter 1: Science and the Universe: A Brief Tour Chapter 2: Observing the Sky: The Birth of Astronomy Chapter 3: Orbits and Gravity Chapter 4: Earth, Moon, and Sky Chapter 5: Radiation and Spectra Chapter 6: Astronomical Instruments Chapter 7: Other Worlds: An Introduction to the Solar System Chapter 8: Earth as a Planet Chapter 9: Cratered Worlds Chapter 10: Earthlike Planets: Venus and Mars Chapter 11: The Giant Planets Chapter 12: Rings, Moons, and Pluto Chapter 13: Comets and Asteroids: Debris of the Solar System Chapter 14: Cosmic Samples and the Origin of the Solar System Chapter 15: The Sun: A Garden-Variety Star Chapter 16: The Sun: A Nuclear Powerhouse Chapter 17: Analyzing Starlight Chapter 18: The Stars: A Celestial Census Chapter 19: Celestial Distances Chapter 20: Between the Stars: Gas and Dust in Space Chapter 21: The Birth of Stars and the Discovery of Planets outside the Solar System Chapter 22: Stars from Adolescence to Old Age Chapter 23: The Death of Stars Chapter 24: Black Holes and Curved Spacetime Chapter 25: The Milky Way Galaxy Chapter 26: Galaxies Chapter 27: Active Galaxies, Quasars, and Supermassive Black Holes Chapter 28: The Evolution and Distribution of Galaxies Chapter 29: The Big Bang Chapter 30: Life in the Universe Appendix A: How to Study for Your Introductory Astronomy Course Appendix B: Astronomy Websites, Pictures, and Apps Appendix C: Scientific Notation Appendix D: Units Used in Science Appendix E: Some Useful Constants for Astronomy Appendix F: Physical and Orbital Data for the Planets Appendix G: Selected Moons of the Planets Appendix H: Upcoming Total Eclipses Appendix I: The Nearest Stars, Brown Dwarfs, and White Dwarfs Appendix J: The Brightest Twenty Stars Appendix K: The Chemical Elements Appendix L: The Constellations Appendix M: Star Charts and Sky Event Resources

Universe. When it comes to staying current with latest discoveries, clearing away common misconceptions, and harnessing the power of media in the service of students and instructors, no other full-length introduction to astronomy can match it. Now the textbook that has evolved discovery by discovery with the science of astronomy and education technology for over two decades returns in spectacular new edition, thoroughly updated and offering unprecedented media options. Available in Split Volumes Universe: Stars and Galaxies, Fourth Edition, 1-4292-4015-6 Universe: The Solar System, Fourth Edition, 1-4292-4016-4

In the years following her role as the lead author of the international bestseller, *Limits to Growth*—the first book to show the consequences of unchecked growth on a finite planet—Donella Meadows remained a pioneer of environmental and social analysis until her untimely death in 2001. *Thinking in Systems*, is a concise and crucial book offering insight for problem solving on scales ranging from the personal to the global. Edited by the Sustainability Institute's Diana Wright, this essential primer brings systems thinking out of the realm of computers and equations and into the tangible world, showing readers how to develop the systems-thinking skills that thought leaders across the globe consider critical for 21st-century life. Some of the biggest problems facing the world—war, hunger, poverty, and environmental degradation—are essentially system failures. They cannot be solved by fixing one piece in isolation from the others, because even seemingly minor details have enormous power to undermine the best efforts of too-narrow thinking. While readers will learn the conceptual tools and methods of systems thinking, the heart of the book is grander than methodology. Donella Meadows was known as much for nurturing positive outcomes as she was for delving into the science behind global dilemmas. She reminds readers to pay attention to what is important, not just what is quantifiable, to stay humble, and to stay a learner. In a world growing ever more complicated, crowded, and interdependent, *Thinking in Systems* helps readers avoid confusion and helplessness, the first step toward finding proactive and effective solutions.

This newly revised and updated Ninth Edition of *HORIZONS* shows students their place in the universe – not just their location, but also their role as planet dwellers in an evolving universe. Fascinating and engaging, the book illustrates how science works, and how scientists depend on evidence to test hypotheses. Students will learn to focus on the scientific method through the strong central questioning themes of "What are we?" and "How do we know?" Students are also provided with an assessment tool, *AceAstronomy*, to help test their knowledge of the concepts through assessment, tutorials, and post-tests.

In this book readers will find technological discussions on the existing and emerging technologies across the different stages of the big data value chain. They will learn about legal aspects of big data, the social impact, and about education needs and requirements. And they will discover the business perspective and how big data technology can be exploited to deliver value within different sectors of the economy. The book is structured in four parts: Part I "The Big Data Opportunity" explores the value potential of big data with a particular focus on the European context. It also describes the legal, business and social dimensions that need to be addressed, and briefly introduces the European Commission's BIG project. Part II "The Big Data Value Chain" details the complete big data lifecycle from a technical point of view, ranging from data acquisition, analysis, curation and storage, to data usage and exploitation. Next, Part III "Usage and Exploitation of Big Data" illustrates the value creation possibilities of big data applications in various sectors, including industry, healthcare, finance, energy, media and public services. Finally, Part IV "A Roadmap for Big Data Research" identifies and prioritizes the cross-sectorial requirements for big data research, and outlines the most urgent and challenging technological, economic, political and societal issues for big data in Europe. This compendium summarizes more than two years of work performed by a leading group of major European research centers and industries in the context of the BIG project. It brings together research findings, forecasts and estimates related to this challenging technological context that is becoming the major axis of the new digitally transformed business environment.

SNA techniques are derived from sociological and social-psychological theories and take into account the whole network (or, in case of very large networks such as Twitter -- a large segment of the network). Thus, we may arrive at results that may seem counter-intuitive -- e.g. that Justin Bieber (7.5 mil. followers) and Lady Gaga (7.2 mil. followers) have relatively little actual influence despite their celebrity status -- while a middle-of-the-road blogger with 30K followers is able to generate tweets that "go viral" and result in millions of impressions. O'Reilly's "Mining Social Media" and "Programming Collective Intelligence" books are an excellent start for people interested in SNA. This book builds on these books' foundations to teach a new, pragmatic, way of doing SNA. I would like to write a book that links theory ("why is this important?", "how do various concepts interact?", "how do I interpret quantitative results?") and practice -- gathering, analyzing and visualizing data using Python and other open-source tools.

This book systematically introduces electromagnetic theories and their applications in practice: electrostatic energy, Poynting theorem, the polarization of waves, the conservation law, the electromagnetic symmetry, the conformal mapping method, the electromagnetic loss. The parameters and theorems of electromagnetic theories are discussed in detail, making the book an essential reference for researchers, and engineers in electromagnetics field.

"Expansive and enlightening. . . . Impey packs his prose with wonderful anecdotes and weird factoids."—New York Times Book Review Human exploration has been an unceasing engine of technological

progress, from the first homo sapiens to leave our African cradle to a future in which mankind promises to settle another world. Beyond tells the epic story of humanity leaving home—and how humans will soon thrive in the vast universe beyond the earth. A dazzling and propulsive voyage through space and time, Beyond reveals how centuries of space explorers—from the earliest stargazers to today's cutting-edge researchers—all draw inspiration from an innate human emotion: wanderlust. This urge to explore led us to multiply around the globe, and it can be traced in our DNA. Today, the urge to discover manifests itself in jaw-dropping ways: plans for space elevators poised to replace rockets at a fraction of the cost; experiments in suspending and reanimating life for ultra-long-distance travel; prototypes for solar sails that coast through space on the momentum of microwaves released from the Earth. With these ventures, private companies and entrepreneurs have the potential to outpace NASA as the leaders in a new space race. Combining expert knowledge of astronomy and avant-garde technology, Chris Impey guides us through the heady possibilities for the next century of exploration. In twenty years, a vibrant commercial space industry will be operating. In thirty years, there will be small but viable colonies on the Moon and Mars. In fifty years, mining technology will have advanced enough to harvest resources from asteroids. In a hundred years, a cohort of humans born off-Earth will come of age without ever visiting humanity's home planet. This is not the stuff of science fiction but rather the logical extension of already available technologies. Beyond shows that space exploration is not just the domain of technocrats, but the birthright of everyone and the destiny of generations to come. To continue exploration is to ensure our survival. Outer space, a limitless unknown, awaits us.

Fascinating, engaging, and extremely visual, STARS AND GALAXIES emphasizes the scientific method throughout as it guides students to answer two fundamental questions: What are we? And how do we know? Updated with the newest developments and latest discoveries in the field of astronomy, authors Michael Seeds and Dana Backman discuss the interplay between evidence and hypothesis, while providing not only facts but also a conceptual framework for understanding the logic of science. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

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