

Kutner Astronomy A Physical Perspective Solution

Bridging the gap between physics and astronomy textbooks, this book provides step-by-step physical and mathematical development of fundamental astrophysical processes underlying a wide range of phenomena in stellar, galactic, and extragalactic astronomy. The book has been written for upper-level undergraduates and beginning graduate students, and its strong pedagogy ensures solid mastery of each process and application. It contains over 150 tutorial figures, numerous examples of astronomical measurements, and 201 exercises. Topics covered include the Kepler–Newton problem, stellar structure, binary evolution, radiation processes, special relativity in astronomy, radio propagation in the interstellar medium, and gravitational lensing. Applications presented include Jeans length, Eddington luminosity, the cooling of the cosmic microwave background (CMB), the Sunyaev–Zeldovich effect, Doppler boosting in jets, and determinations of the Hubble constant. This text is a stepping stone to more specialized books and primary literature. Password-protected solutions to the exercises are available to instructors at www.cambridge.org/9780521846561.

The book provides a novel account of laws of nature via dispositions. Laws of nature play a paramount role in philosophy, science and everyday life. Understanding laws of nature is philosophically interesting on its own right but also many important notions belonging to philosophy of science, like causation, prediction and explanation, are intimately related to the laws of nature. The book outlines the alleged characteristics of the laws of nature and introduces the main families of theories of laws of nature – neo-humean, ADT and dispositional theories. It then develops an account of dispositions the ‘triadic process picture of dispositions’ (TPD) and applies it to the debate about laws of nature. Finally, the (TPD) account of the necessity of the laws of nature is presented: laws of nature are naturally necessary and metaphysically contingent. Thus the book provides an introduction to the debates about laws of nature as well as dispositions, while at the same time developing a novel theory and thus is interesting for the beginner as well as expert in these fields.

Above the land and its horizon lies the celestial sphere, that great dome of the sky which governs light and darkness, critical to life itself, yet its influence is often neglected in the archaeological narrative. Visualising Skyscapes captures a growing interest in the emerging field of skyscape archaeology. This powerful and innovative book returns the sky to its rightful place as a central consideration in archaeological thought and can be regarded as a handbook for further research. Bookended by a foreword by archaeologist Gabriel Cooney and an afterword by astronomer Andrew Newsum, its contents have a wide-reaching relevance for the fields of archaeology, anthropology, ethnography, archaeoastronomy, astronomy, heritage and cultural studies. The volume balances six chapters on theory and methodology which elaborate on the history and practice of the field with six other chapters focused on case studies from around the world. Visualising Skyscapes captures the growing interest in the multidisciplinary study of skyscapes and will be of interest to academics, students and the general public, as well as having international appeal. It is topical, timely and relevant to current debates and will hopefully stimulate further interest in this exciting and relatively new area of investigation. The contributions showcase the work of distinguished academics in the field and the chapters are all enhanced by numerous photographs and images.

Art and Pornography presents a series of essays which investigate the artistic status and aesthetic dimension of pornographic pictures, films, and literature, and explores the distinction, if there is any, between pornography and erotic art. Is there any overlap between art and pornography, or are the two mutually exclusive? If they are, why is that? If they are not, how might we characterize pornographic art or artistic pornography, and how might pornographic art be distinguished, if at all, from erotic art? Can there be aesthetic beauty of pornography? What are some of the psychological, social, and political consequences of the creation and appreciation of erotic art or artistic pornography? Leading scholars from around the world address these questions, and more, and bring together different aesthetic perspectives and approaches to this widely consumed, increasingly visible, yet aesthetically underexplored cultural domain. The book, the first of its kind in philosophical aesthetics, will contribute to a more accurate and subtle understanding of the many representations that incorporate explicit sexual imagery and themes, in both high art and demotic culture, in Western and non-Western contexts. It is sure to stir debate, and healthy controversy.

Material Forms of Cultural Engagement with the Heavens

Astrophysics Processes

A Radically Modern Approach to Introductory Physics

Astronomy

Astronomy: A Physical Perspective

Feel at home among the stars with this acclaimed astronomy self-teaching guide . . . "A lively, up-to-date account of the basic principles of astronomy and exciting current fields of research."-Science Digest "One of the best ways by which one can be introduced to the wonders of astronomy."-The Strolling Astronomer "Excellent . . . provides stimulating reading and actively involves the reader in astronomy."-The Reflector From stars, planets, and galaxies to the mysteries of black holes, the Big Bang, and the possibility of life on other planets, this new edition of Astronomy: A Self-Teaching Guide brings the fascinating night sky to life for every student and amateur stargazer. With a unique self-teaching format, Astronomy clearly explains the essentials covered in an introductory college-level course.

Written by an award-winning author, this practical guide offers beginners an easy way to quickly grasp the basic principles of astronomy. To help you further appreciate the wonders of the cosmos, this book also includes: Star and Moon maps that identify objects in the sky Objectives, reviews, and self-tests that monitor your progress Simple activities that help you to test basic principles at your own pace Updated with the latest discoveries, new photographs, and references to the best astronomy Web sites, this newest edition of Astronomy imparts an extraordinary appreciation of the elegant beauty of the universe. Over 2 Million Wiley Self-Teaching Guides in Print

Conservation Biology for All provides cutting-edge but basic conservation science to a global readership. A series of authoritative chapters have been written by the top names in conservation biology with the principal aim of disseminating cutting-edge conservation knowledge as widely as possible. Important topics such as balancing conversion and human needs, climate change, conservation planning, designing and analyzing conservation research, ecosystem services, endangered species management, extinctions, fire, habitat loss, and invasive species are covered. Numerous textboxes describing additional relevant material or case studies are also included. The global biodiversity crisis is now unstoppable: what can be saved in the developing world will require an educated constituency in both the developing and developed world. Habitat loss is particularly acute in developing countries, which is of special concern because it tends to be these locations where the greatest species diversity and richest centres of endemism are to be found. Sadly, developing world conservation scientists have found it difficult to access an authoritative textbook, which is particularly ironic since it is these countries where the potential benefits of knowledge application are greatest. There is now an urgent need to educate the next generation of scientists in developing countries, so that they are in a better position to protect their natural resources.

Radio astronomy was born during the Second World War, but as this book explains, the history of early Dutch radio astronomy is in several respects rather anomalous in comparison to the development of radio astronomy in other countries. The author describes how these very differences led the Netherlands to become one of the world leaders in radio astronomy. Dominated by the Leiden astronomer Jan Hendrik Oort, the field embarked on an era of success, and to this day, the country still holds a leading position. To tell this story, the book focuses on three key events in the period 1940-1970, namely the construction of the radio telescopes in Kootwijk (1948), in Dwingeloo (1956), and in Westerbork (1970). These projects show that Dutch radio astronomers must not be seen as merely scientists, but also as strategic lobbyists, networkers and organizers in a specific political and economic context. It was in the process of planning, designing and constructing these instruments that the interests of the astronomers, industrial partners, politicians and lobby groups merged to create today's existing research centers for radio astronomy.

"The World Health Organization has acknowledged that the majority of people living in developing countries continue to use traditional medicine. Increased levels of immigration and migration also mean that health professionals are more likely to come into contact with patients using them. Traditional Medicine is therefore a vital and timely book which covers medical systems practised on five continents, including: traditional European folk medicine: Aboriginal/traditional medicine in North America: traditional medicine in the Colombian Amazon Tropical forest: traditional medical practice in Africa: traditional Chinese medicine: Indian Ayurvedic medicine: Japanese Kampo medicine: Korean medicine: traditional medicines in the Pacific; and traditional Jewish medicine."--Publisher's description.

The Cosmos

Understanding Our Universe (Third Edition)

A Model Comparison Perspective, Third Edition

Oxford Textbook of Palliative Social Work

Life in the Milky Way and Beyond

The Rise of Radio Astronomy in the Netherlands

A substantial update of this award-winning and highly regarded cosmology textbook, for advanced undergraduates in physics and astronomy.

A multitude of measurement units exist within astronomy, some of which are unique to the subject, causing discrepancies that are particularly apparent when astronomers collaborate with researchers from other disciplines in science and engineering. The International System of Units (SI) is based on seven fundamental units from which other units may be derived, but many astronomers are reluctant to drop their old and familiar systems. This handbook demonstrates the ease with which transformations from old units to SI units may be made. Using worked examples, the author argues that astronomers would benefit greatly if the reporting of astronomical research and the sharing of data were standardized to SI units. Each chapter reviews a different SI base unit, clarifying the connection between these units and those currently favoured by astronomers. This is an essential reference for all researchers in astronomy and astrophysics, and will also appeal to advanced students.

Survival analysis is a class of statistical methods for studying the occurrence and timing of events. Statistical analysis of longitudinal data, particularly censored data, lies at the heart of social work research, and many of social work research's empirical problems, such as child welfare, welfare policy, evaluation of welfare-to-work programs, and mental health, can be formulated as investigations of timing of event occurrence. Social work researchers also often need to analyze multilevel or grouped data (for example, event times formed by sibling groups or mother-child dyads or recurrences of events such as reentries into foster care), but these and other more robust methods can be challenging to social work researchers without a background in higher math. With clearly written summaries and plentiful examples, all written with social work issues and social work researchers in mind, this pocket guide will put this important statistical tool in the hands of many more social work researchers than have been able to use it before, to the field's benefit.

Updated and expanded to 124 entries, The Cambridge Encyclopedia of Child Development remains the authoritative reference in the field.

Schaum's Outline of Astronomy

An Introduction to Statistical Learning

Using SI Units in Astronomy

Physical Perspective by Kutner, Marc, ISBN

Physics and Chemistry of the Solar System

Designing Experiments and Analyzing Data

Never HIGHLIGHT A Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780521529273.

This open access book on the history of the National Radio Astronomy Observatory covers the scientific discoveries and technical innovations of late 20th century radio astronomy with particular attention to the people and institutions involved. The authors have made extensive use of the NRAO Archives, which contain an unparalleled collection of documents pertaining to the history of radio astronomy, including the institutional records of NRAO as well as the personal papers of many of the pioneers of U.S. radio astronomy. Technical details and extensive citations to original sources are given in notes for the more technical readers, but are not required for an understanding of the body of the book. This book is intended for an audience ranging from interested layreaders to professional researchers studying the scientific, technical, political, and cultural development of a new science, and how it changed the course of 20th century astronomy.

Social psychologist and public policy expert Jack Glaser unpacks a century's worth of social psychological research to provide a clear understanding of how stereotypes, even those operating outside of conscious awareness or control, can cause police to make discriminatory judgments and decisions about whom to suspect, stop, question, search, use force on, and arrest. Glaser argues that stereotyping, even non-conscious stereotyping, is a completely normal human mental process, but that it leads to undesirable discriminatory outcomes.

The Oxford Textbook of Palliative Social Work is a comprehensive, evidence-informed text that addresses the needs of professionals who provide interdisciplinary, culturally sensitive, biopsychosocial-spiritual care for patients and families living with life-threatening illness. Social workers from diverse settings will benefit from its international scope and wealth of patient and family narratives. Unique to this scholarly text is its emphasis on the collaborative nature inherent in palliative care. This definitive resource is edited by two leading palliative social work pioneers who bring together an array of international authors who provide clinicians, researchers, policy-makers, and academics with a broad range of content to enrich the guidelines recommended by the National Consensus Project for Quality Palliative Care.

Issues in Palliative Care Research

Causes and Consequences of Racial Profiling

The Initial Mass Function 50 Years Later

Survival Analysis

Outlines and Highlights for Astronomy

The Biological Universe

Fundamental Astronomy is a well-balanced, comprehensive introduction to classical and modern astronomy. While emphasizing both the astronomical concepts and the underlying physical principles, the text provides a sound basis for more profound studies in the astronomical sciences. This is the fifth edition of the successful undergraduate textbook and reference work. It has been extensively modernized and extended in the parts dealing with extragalactic astronomy and cosmology. You will also find augmented sections on the solar system and extrasolar planets as well as a new chapter on astrobiology. Long considered a standard text for physical science majors, Fundamental Astronomy is also an excellent reference work for dedicated amateur astronomers.

Astronomy Methods is an introduction to basic practical tools, methods and phenomena that underlie quantitative astronomy. Taking a technical approach, the author covers a rich diversity of topics across all branches of astronomy, from radio to gamma-ray wavelengths. Clear, systematic presentations of the topics are accompanied by diagrams and problem sets. Written for undergraduates and graduate students, this book contains a wealth of information that is required for the practice and study of quantitative and analytical astronomy and astrophysics.

A complete and in-depth review of exoplanet research, covering the discovery methods, physics and theoretical background.

Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you Practice problems with full explanations that reinforce knowledge Coverage of the most up-to-date developments in your course field In-depth review of practices and applications Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time-and get your best test scores! Schaum's Outlines-Problem Solved.

The Cambridge Encyclopedia of Child Development

Simplicity of Complexity in Economic and Social Systems

Solutions Manual Astronomy a Physical Perspective

A Research-Based Resource for College Instructors

Introduction to Black Hole Physics

Art and Pornography

Introduction to Astronomy & Cosmology is a modern undergraduate textbook, combining both the theory behind astronomy with the very latest developments. Written for science students, this book takes a carefully developed scientific approach to this dynamic subject. Every major concept is accompanied by a worked example with end of chapter problems to improve understanding Includes coverage of the very latest developments such as double pulsars and the dark galaxy. Beautifully illustrated in full colour throughout Supplementary web site with many additional full colour images, content, and latest developments.

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 some-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

What is a black hole? How many of them are in our Universe? Can black holes be created in a laboratory or in particle colliders? Can objects similar to black holes be used for space and time travel? This book discusses these and many other questions providing the reader with the tools required to explore the Black Hole Land independently.

Written by foremost experts, this short book gives a clear description of the physics of quantum black holes. The reader will learn about quantum black holes in four and higher dimensions, primordial black holes, the production of black holes in high energy particle collisions, Hawking radiation, black holes in models of low scale quantum gravity and quantum gravitational aspects of black holes.

Suspect Race

Astronomy Methods

Conservation Biology for All

With R Applications

Teaching at Its Best

Proceedings of the 54th Winter School of Theoretical Physics, Łańdek Zdrój, Poland, February 18–24th 2018

"Modern astronomical research is beset with a vast range of statistical challenges, ranging from reducing data from megadatasets to characterizing an amazing variety of variable celestial objects or testing astrophysical theory. Yet most astronomers still use a narrow suite of traditional statistical methods. Linking astronomy to the world of modern statistics, this volume is a unique resource, introducing astronomers to advanced statistics through ready-to-use code in the public-domain R statistical software environment".

Symptom control, management of psychosocial and spiritual concerns, decision-making consistent with values and goals, and care of the imminently dying that is appropriate and sensitive are among the critical issues in palliative care. This book explores progress made and future goals.

Physics and Chemistry of the Solar System, 2nd Edition, is a comprehensive survey of the planetary physics and physical chemistry of our own solar system. It covers current research in these areas and the planetary sciences that have benefited from both earth-based and spacecraft-based experimentation. These experiments form the basis of this encyclopedic reference, which skillfully fuses synthesis and explanation. Detailed chapters review each of the major planetary bodies as well as asteroids, comets, and other small orbits. Astronomers, physicists, and planetary scientists can use this state-of-the-art book for both research and teaching. This Second Edition features extensive new material, including expanded treatment of new meteorite classes, spacecraft findings from Mars Pathfinder through Mars Odyssey 2001, recent reflections on brown dwarfs, and descriptions of planned NASA, ESA, and Japanese planetary missions. * New edition features expanded treatment of new meteorite classes, the latest spacecraft findings from Mars, information about 100+ new discoveries of planets and stars, planned lunar and planetary missions, more end-of-chapter exercises, and more * Includes extensive new material and is amply illustrated throughout * Reviews each major planetary body, asteroids, comets, and other small orbits

Written by foremost experts, this short book gives a clear description of the physics of quantum black holes. The reader will learn about quantum black holes in four and higher dimensions, primordial black holes, the production of black holes in high energy particle collisions, Hawking radiation, black holes in models of low scale quantum gravity and quantum gravitational aspects of black holes.

The National Radio Astronomy Observatory and Its Impact on US Radio Astronomy

Introduction to Cosmology

The Exoplanet Handbook

The People and the Politics

A Global Perspective

A Physical Perspective

Current state of play in astrobiology, including exoplanets and their atmospheres, habitable zones and the likelihood of evolution elsewhere.

An Introduction to Statistical Learning provides an accessible overview of the field of statistical learning, an essential toolset for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. This book presents some of the most important techniques, along with relevant applications. Topics include linear regression, classification, resampling methods, shrinkage approaches, tree-based methods, support vector machines, clustering, and more. Color graphics and real-world examples are used to illustrate the methods presented. Since the goal of this textbook is to facilitate the learning techniques by practitioners in science, industry, and other fields, each chapter contains a tutorial on implementing the analyses and methods presented in R, an extremely popular open source statistical software platform. Two of the authors co-wrote The Elements of Statistical Learning (Hastie, Tibshirani and Friedman, 2nd edition) and a book for statistics and machine learning researchers. An Introduction to Statistical Learning covers many of the same topics, but at a level accessible to a much broader audience. This book is targeted at statisticians and non-statisticians alike who wish to use cutting-edge statistical learning techniques to analyze their data. The text assumes linear regression and no knowledge of matrix algebra.

Astronomy, astrophysics and space research have developed extensively and rapidly in the last few decades. The new opportunities for observation afforded by space travel, the development of high-sensitivity light detectors and the use of powerful computers have revealed new aspects of the fascinating world of galaxies and quasars, stars and planets. This completely revised edition of The New Cosmos bears witness to this explosive development. It provides a comprehensive but concise introduction to all of astronomy and astrophysics. It stresses observations and theoretical principles equally, requiring of the reader only basic mathematical and scientific background knowledge. Like its predecessor, The New Cosmos will be welcomed by students and researchers in the fields of astronomy, physics and earth sciences, as well as by serious amateur astronomers.

An exciting introduction to astronomy, using recent discoveries and stunning photography to inspire non-science majors about the Universe and science.

Visualising Skyscapes

Fundamental Astronomy

A Physical Approach to Astronomical Observations

Astronomy in the New Millennium

The Physics of Astronomical Phenomena

Traditional Medicine

Teaching at Its Best This third edition of the best-selling handbook offers faculty at all levels an essential toolbox of hundreds of practical teaching techniques, formats, classroom activities, and exercises, all of which can be implemented immediately. This thoroughly revised edition includes the newest portrait of the Millennial student; current research from cognitive psychology; a focus on outcomes maps; the latest legal options on copyright issues; and how to best use new technology including wikis, blogs, podcasts, vodcasts, and clickers. Entirely new chapters include subjects such as matching teaching methods with learning outcomes, inquiry-guided learning, and using visuals to teach, and new sections address Felder and Silverman's Index of Learning Styles, SCALE-UP classrooms, multiple true-false test items, and much more. Praise for the Third Edition of Teaching at Its BestEveryone—veterans as well as novices—will profit from reading Teaching at Its Best, for it provides both theory and practical suggestions for handling all of the problems one encounters in teaching classes varying in size, ability, and motivation.—Wilbert McKeachie, Department of Psychology, University of Michigan, and coauthor, McKeachie's Teaching TipsThis new edition of Dr. Nilson's book, with its completely updated material and several new topics, is an even more powerful collection of ideas and tools than the last. What a great resource, especially for beginning teachers but also for us veterans!—L. Dee Fink, author, Creating Significant Learning ExperiencesThis third edition of Teaching at Its Best is successful at weaving the latest research on teaching and learning into what was already a thorough exploration of each topic. New information on how we learn, how students develop, and innovations in instructional strategies complement the solid foundation established in the first two editions.—Marilla D. Svinicki, Department of Psychology, The University of Texas, Austin, and coauthor, McKeachie's Teaching Tips

A comprehensive introduction to astronomical objects and phenomena, for undergraduate students.

Astronomy: A Physical PerspectiveCambridge University Press

Designing Experiments and Analyzing Data: A Model Comparison Perspective (3rd edition) offers an integrative conceptual framework for understanding experimental design and data analysis. Maxwell, Delaney, and Kelley first apply fundamental principles to simple experimental designs followed by an application of the same principles to more complicated designs. Their integrative conceptual framework better prepares readers to understand the logic behind a general strategy of data analysis that is appropriate for a wide variety of designs, which allows for the introduction of more complex topics that are generally omitted from other books. Numerous pedagogical features further facilitate understanding: examples of published research demonstrate the applicability of each chapter 's content; flowcharts assist in choosing the most appropriate procedure; end-of-chapter lists of important formulas highlight key ideas and assist readers in locating the initial presentation of equations; useful programming code and tips are provided throughout the book and in associated resources available online, and extensive sets of exercises help develop a deeper understanding of the subject. Detailed solutions for some of the exercises and realistic data sets are included on the website (DesigningExperiments.com). The pedagogical approach used throughout the book enables readers to gain an overview of experimental design, from conceptualization of the research question to analysis of the data. The book and its companion website with web apps, tutorials, and detailed code are ideal for students and researchers seeking the optimal way to design their studies and analyze the resulting data.

Quantum Black Holes

Philosophical Essays

Natural Laws as Dispositions

Open Skies

Modern Statistical Methods for Astronomy

with Applications in R

This book presents the Proceedings of the 54th Winter School of Theoretical Physics on Simplicity of Complexity in Economic and Social Systems, held in Łańdek Zdrój, Poland, from 18 to 24 February 2018. The purpose of the book is to introduce the new interdisciplinary research that links statistical physics, and particular attention is given to link physics of complex systems, with financial analysis and sociology. The main tools used in these areas are numerical simulation of agents behavior and the interpretation of results with the help of complexity methods; therefore a background in statistical physics and in physics of phase transition is necessary to take the first steps towards these research fields called econophysics and sociophysics. In this perspective, the book is intended to graduated students and young researchers who want to begin the study of this established new area, which connects physicists, economists, sociologists and IT professionals, to better understand complexity phenomena existing not only in physics but also in complex systems being seemingly far from traditional view at physics.

This is the first edition [revised on March 13, 2014] of two volumes of notes prepared by David J. Raymond for a physics course at New Mexico Tech. The course used the principles of optics, waves and relativity, rather than classical mechanics, as a foundation for teaching introductory physics. The topics covered are: waves in one, two and three dimensions; geometrical optics; special relativity; acceleration and general relativity; matter waves; Newton's Laws; symmetry and bound states; dynamics of multiple particles; rotational dynamics; and harmonic oscillators. This textbook is available as a PDF file under a GNU Free Documentation License.

Introduction to Astronomy and Cosmology

The New Cosmos