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is black and white. This book features numerous NASA space photos. (NASA did not participate in the writing or publication of this eBook.) Many diagrams, like the heliocentric and geocentric models or explaining the phases of the moon, were constructed by combining together NASA space photos instead of simply drawing circles. Teachers who purchase one copy of this book or borrow one copy of this book from a library may reproduce selected

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pages for the purpose of teaching astronomy concepts to their own students. The content is suitable for a general interest audience, as well as those who may be learning astronomy and are looking for some supplemental instruction that is highly visual and focused on a variety of fundamental concepts. (This book is also available in a full-color edition.)

The seventh edition of Explorations: An Introduction to Astronomy strives to

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central observational feature of the universe. The various theories and ideas in "big bang" cosmology are discussed, providing an insight into current problems. The book is written at an intermediate level, beyond that of the many elementary books on cosmology, as an introduction to the more advanced works and research literature.

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

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Astronomy, perhaps the first of the sciences, was already well developed by the time of Christ. Seventeen centuries later, after Newton showed that the movements of the planets could be explained in terms of gravitation, it became the paradigm for the mathematical sciences. In the nineteenth century the analysis of star-light allowed astrophysicists to determine both the chemical composition and the radial velocities of celestial bodies, while the development of photography enabled distant objects invisible to the human eye, to be studied and measured in comfort. Technical

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developments during and since the Second World War have greatly enlarged the scope of the science by permitting the study of radiation. This is a fascinating introduction to the history of Western astronomy, from prehistoric times to the origins of astrophysics in the mid-nineteenth century. Historical records are first found in Babylon and Egypt, and after two millennia the arithmetical astronomy of the Babylonians merged with the Greek geometrical approach to culminate in the Almagest of Ptolemy. This legacy was transmitted to the Latin West via Islam, and led to Copernicus's claim that the Earth is in motion. In justifying this Kepler converted astronomy into a branch of dynamics, leading to Newton's universal law of gravity. The book concludes with eighteenth- and nineteenth-century

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applications of Newton's law, and the first explorations of the universe of stars. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

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modern observational and theoretical cosmology, the focus turns to the formation of structures and astronomical objects in the early Universe. The basics of classical astronomy and stellar astrophysics needed for extragalactic astronomy are provided in the appendix. While this book has grown out of introductory university courses on astronomy and astrophysics and includes a set of problems and solutions, it will not only benefit undergraduate students and lecturers; thanks to the comprehensive coverage of the field, even graduate students and researchers specializing in related fields will appreciate it as a valuable reference work.

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Big Ideas Simply Explained

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The eighth edition of *Explorations: An Introduction to Astronomy* strives to share with students a sense of wonder about the universe and the dynamic, ever-changing science of astronomy. Written for students of various educational backgrounds, *Explorations* emphasizes current information, a

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visually exciting art package, accessible writing, and accuracy. The new edition also features the most complete technology support package offered with any astronomy text. Distance determination is an essential technique in astronomy, and is briefly covered in most textbooks on astrophysics and cosmology. It is rarely covered as a coherent topic in its own right. When it is discussed the approach is frequently very dry,

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splitting the teaching into, for example, stars, galaxies and cosmologies, and as a consequence, books lack depth and are rarely comprehensive. Adopting a unique and engaging approach to the subject An Introduction to distance Measurement in Astronomy will take the reader on a journey from the solar neighbourhood to the edge of the Universe, discussing the range of distance measurements methods on the way. The book will focus

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on the physical processes discussing properties that underlie each method, rather than just presenting a collection of techniques. As well as providing the most compressive account of distance measurements to date, the book will use the common theme of distance measurement to impart basic concepts relevant to a wide variety of areas in astronomy/astrophysics. The book will provide an updated account of the progress made in a large number of

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subfields in astrophysics, leading to improved distance estimates particularly focusing on the underlying physics. Additionally it will illustrate the pitfalls in these areas and discuss the impact of the remaining uncertainties in the complete understanding of the Universes at large. As a result the book will not only provide a comprehensive study of distance measurement, but also include many recent advances in astrophysics.

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Astronomy, astrophysics and space research have witnessed an explosive development over the last few decades. The new observational potential offered by space stations and the availability of powerful and highly specialized computers have revealed novel aspects of the fascinating realm of galaxies, quasars, stars and planets. The present completely revised 5th edition of The New Cosmos provides ample evidence of these dramatic developments. In a

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concise presentation, which assumes only a modest prior knowledge of mathematics and physics, the book gives a coherent introduction to the entire field of astronomy and astrophysics. At the same time it takes into account the art of observation and the fundamental ideas behind their interpretation. Like its predecessors, this edition of The New Cosmos will provide new insight and enjoyment not only to students and researchers in the fields of astronomy,

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physics will find here an appealing introduction to the subject. This fourth edition has been updated and revised with respect to the latest developments in astronomy. The chapter on mathematical methods has been redesigned and the software used is now exclusively Python. From the contents: Spherical astronomy - History of astronomy - Celestial mechanics - Astronomical instruments - Physics of the bodies of the solar system - The Sun - State variables of the stars - Stellar atmospheres - Stellar structure - Stellar evolution - Interstellar matter - The Galaxy -

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Extragalactic systems - Cosmology - Astrobiology - Mathematical methods. This book is a translation of the original German 4th edition Einführung in Astronomie und Astrophysik by Arnold Hanslmeier, published by Springer-Verlag GmbH Germany, part of Springer Nature in 2020. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to

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This well-established, graduate-level textbook is a thorough introduction to radio telescopes and techniques for students and researchers new to the subject.

The ninth edition of *Explorations: An Introduction to Astronomy* continues to share with students a sense of wonder about the universe and the dynamic, ever-changing science of astronomy. Written for students of various educational

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Crispus Attucks to Colin Powell, Buckley presents a history of bravery, valor, patriotism, and extraordinary personal courage both on and off the battlefield. American Patriots is one of the great untold stories in American history. There have been books on individual black soldiers, but this is the first to tell the full story of the black American military experience, starting with the Revolution & culminating with Desert Storm. The best histories are about more than facts & events-they capture the spirit that drives men to better their lives & to demand of themselves the highest form of sacrifice. That spirit permeates Gail Buckley's dramatic, deeply moving, & inspiring book. You'll meet the men who fought in the decisive engagements of the Revolution, the legendary

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Buffalo Soldiers, & the heroic black regiments of the Civil War. You'll meet some of America's greatest patriots-men who fought in the First & Second World Wars when their country denied them access to equipment & training, segregated the ranks, & did all it could to keep them off the battlefield. You'll meet the heroes of Korea, Vietnam, & Desert Storm. And you'll meet two families, the Lews & the Pierces, who have served in every major American engagement since the Revolution. FDR used to say that Americanism was a matter of the mind & heart, not of race & ancestry. With photographs throughout & dozens of original interviews with veterans, American Patriots is a tribute to the black American men & women who fought & often gave their lives in the service of that ideal.

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The Middle East is the birthplace of astronomy and the centre for its development during the medieval period. In this brief introduction John Steele offers an intriguing insight into Middle Eastern achievements in astronomy and their profound influence on the rest of the world. Amongst other things, the book traces the Late Babylonians' ingenious schemes for modelling planetary motion. It also reveals how medieval Islamic advances in the study of the heavens, and the design of precise astronomical instruments, led to breakthroughs by Renaissance practitioners such as Copernicus and Kepler. An invaluable introduction to one of the oldest sciences in the world.

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A thorough introduction to modern ideas on

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cosmology and on the physical basis of the general theory of relativity, An Introduction to the Science of Cosmology explores various theories and ideas in big bang cosmology, providing insight into current problems.

Assuming no previous knowledge of astronomy or cosmology, this book takes you beyond introductory texts to the point where you are able to read and appreciate the scientific literature, which is broadly referenced in the book. The authors present the standard big bang theory of the universe

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and provide an introduction to current inflationary cosmology, emphasizing the underlying physics without excessive technical detail. The book treats cosmological models without reliance on prior knowledge of general relativity, the necessary physics being introduced in the text as required. It also covers recent observational evidence pointing to an accelerating expansion of the universe. The first several chapters provide an introduction to the topics discussed later in the book. The next few chapters introduce

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relativistic cosmology and the classic observational tests. One chapter gives the main results of the hot big bang theory. Next, the book presents the inflationary model and discusses the problem of the origin of structure and the correspondingly more detailed tests of relativistic models. Finally, the book considers some general issues raised by expansion and isotropy. A reference section completes the work by listing essential formulae, symbols, and physical constants. Beyond the level of many

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elementary books on cosmology, An Introduction to the Science of Cosmology encompasses numerous recent developments and ideas in the area. It provides more detailed coverage than many other titles available, and the inclusion of problems at the end of each chapter aids in self study and makes the book suitable for taught courses. An introduction to the history of Western astronomy from prehistoric times to the origins of astrophysics in the mid nineteenth century. Emphasis is given to such topics as

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the merging of Babylonian and Greek astronomy in later Antiquity, Kepler's conversion of astronomy into a branch of dynamics, and the first explorations of the universe of stars.

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

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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

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