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A Child's Introduction to the Night Sky Michael Driscoll 2004 Children eight and up will enjoy this conversational but information-packed introduction to astronomy and stargazing, which includes the achievements of the great scientists, the history of space exploration, the story of our solar system, the myths behind the constellations, and how to navigate the night sky. Whimsical color illustrations on every page and handy definitions and sidebars help engage younger readers and develop their interest. The special star wheel helps locate stars and planets from any location at any time of year. This is the third in Black Dog & Leventhal's successful series including *The Story of the Orchestra* and *A Child's Introduction to Poetry*.

Beastie Boys Book Michael Diamond 2018-10-30 #1 NEW YORK TIMES BESTSELLER • A panoramic experience that tells the story of Beastie Boys, a book as unique as the band itself—by band members ADROCK and Mike D, with contributions from Amy Poehler, Colson Whitehead, Wes Anderson, Luc Sante, and more. The inspiration for the Emmy-nominated Apple TV+ “live documentary” *Beastie Boys Story*, directed by Spike Jonze NAMED ONE OF THE BEST BOOKS OF THE YEAR BY Rolling Stone • The Guardian • Paste Formed as a New York City hardcore band in 1981, Beastie Boys struck an unlikely path to global hip hop superstardom. Here is their story, told for the first time in the words of the band. Adam “ADROCK” Horowitz and Michael “Mike D” Diamond offer revealing and very funny accounts of their transition from teenage punks to budding rappers; their early collaboration with Russell Simmons and Rick Rubin; the debut album that became the first hip hop record ever to hit #1, *Licensed to Ill*—and the album’s messy fallout as the band broke with Def Jam; their move to Los Angeles and rebirth with the genre-defying masterpiece *Paul’s Boutique*; their evolution as musicians and social activists over the course of the classic albums *Check Your Head*, *Ill Communication*, and *Hello Nasty* and the Tibetan Freedom Concert benefits conceived by the late Adam “MCA” Yauch; and more. For more than thirty years, this band has had an inescapable and indelible influence on popular

culture. With a style as distinctive and eclectic as a Beastie Boys album, *Beastie Boys Book* upends the typical music memoir. Alongside the band narrative you will find rare photos, original illustrations, a cookbook by chef Roy Choi, a graphic novel, a map of Beastie Boys' New York, mixtape playlists, pieces by guest contributors, and many more surprises. Praise for *Beastie Boys Book* "A fascinating, generous book with portraits and detail that float by in bursts of color . . . As with [the band's] records, the book's structure is a lyrical three-man weave. . . . Diamond's voice is lapidary, droll. Horovitz comes on like a borscht belt comedian, but beneath that he is urgent, incredulous, kind of vulnerable. . . . Friendship is the book's subject as much as music, fame and New York."—*The New York Times Book Review* "Wild, moving . . . resembles a Beastie Boys LP in its wild variety of styles."—*Rolling Stone*

Understanding Variable Stars John R. Percy 2007-05-24 This book was first published in 2007. Variable stars are those that change brightness. Their variability may be due to geometric processes such as rotation, or eclipse by a companion star, or physical processes such as vibration, flares, or cataclysmic explosions. In each case, variable stars provide unique information about the properties of stars, and the processes that go on within them. This book provides a concise overview of variable stars, including a historical perspective, an introduction to stars in general, the techniques for discovering and studying variable stars, and a description of the main types of variable stars. It ends with short reflections about the connection between the study of variable stars, and research, education, amateur astronomy, and public interest in astronomy. This book is intended for anyone with some background knowledge of astronomy, but is especially suitable for undergraduate students and experienced amateur astronomers who can contribute to our understanding of these important stars.

Extragalactic Novae Allen Wayne Shafter 2019 *Extragalactic Novae: A historical perspective* takes the reader on a journey chronicling the study of a class of eruptive variable stars known as "Novae Stella", Latin for "New Stars". These mysterious transient objects, now referred to simply as novae, have been recognized since antiquity, suddenly appearing in the night sky before slowly fading back into obscurity. The book begins with a brief introduction to the early observations, including an overview of the role that novae played in the birth of extragalactic astronomy, and concludes with a discussion of how nova observations over the past century have contributed to our knowledge of close binary star populations in nearby galaxies. Along the way, the history of our understanding of the nova phenomena, in the Milky Way and beyond, is unveiled. In particular, the author describes how the enigmatic nova eruptions were finally realized to be the result of thermonuclear runaways on the surfaces of accreting white dwarf stars, how a controversial correlation between a nova's peak luminosity and its rate of decline (the MMRD relation) has been used in extragalactic distance determinations, and how recent observations have bolstered the case that novae may form a significant channel for the production of Type Ia supernovae. These topics, and more, are recounted by an observer who has spent the past 35 years studying these fascinating objects.

An Introduction to the Theory of Stellar Structure and Evolution Dina Prialnik 2009-10-29 Using fundamental physics, the theory of stellar structure and evolution can predict how stars are born, how their complex internal structure changes, what nuclear fuel they burn, and their ultimate fate. This textbook is a stimulating introduction for undergraduates in astronomy, physics and applied mathematics, taking a course on the physics of stars. It uniquely emphasizes the basic physical principles governing stellar structure and evolution. This second edition contains two new chapters on mass loss from stars and interacting binary stars, and new exercises. Clear and methodical, it explains the processes in simple terms, while maintaining mathematical rigor. Starting from general principles, this textbook leads students step-by-step to a global, comprehensive understanding of the subject. Fifty exercises and full solutions allow students to test their understanding. No prior knowledge of astronomy is required, and only a basic background in physics and mathematics is necessary.

Light Curve Modeling of Eclipsing Binary Stars E.F. Milone 1993 In the two decades since the development of the first eclipsing-binary modeling code, new analytic techniques and the availability of powerful, sometimes dedicated computing facilities have made possible vastly improved determinations of fundamental and even transient stellar parameters. The scale of these developments, of course, raises questions about modeling tools, techniques, and philosophies, such as: Who will maintain and upgrade the codes? Will the codes be open to improvement by outsiders, and if so, how? And, indeed, what should be the goals of a modeling program? Such questions had not been aired for a long time and, for this reason alone, deserved to be discussed in as general a forum as the community provides. This volume contains material presented by Commission 42 (Close Binary Stars) during the International Astronomical Union's XXI General Assembly in Argentina, July 1991, and during IAU Colloquium 151, Cordoba, Argentina, August 1991. The techniques discussed include simulations of stellar bright and dark spots, streams, partial and complete stellar disks, prominences, and other features characterizing active stars; modeling of polarization parameters; models that use radial velocities as well as line profile simulations to model velocity field variation across stellar disks; the weighted effects of brightness asymmetries; and models for translucent eclipsing agents such as stellar winds.

At the End of Everything Marieke Nijkamp 2022-01-25 From the #1 New York Times bestselling author of *This Is Where It Ends* comes another heartbreaking, emotional and timely page-turner that will keep you on the edge of your seat. The Hope Juvenile Treatment Center is ironically named. No one has hope for the delinquent teenagers who have been exiled there; the world barely acknowledges that they exist. Then the guards at Hope start acting strange. And one day...they don't show up. But when the teens band together to make a break from the facility, they encounter soldiers outside the gates. There's a rapidly spreading infectious disease outside, and no one can leave their houses or travel without a permit. Which means that they're stuck at Hope. And this time, no one is watching out for them at all. As supplies quickly dwindle and a deadly plague tears through their ranks, the group has to decide whom among

them they can trust and figure out how they can survive in a world that has never wanted them in the first place. Also by Marieke Nijkamp: *This Is Where It Ends Even If We Break Before I Let Go* Praise for Marieke Nijkamp: "Immersive and captivating. Thrilling in every sense of the word."—Karen M. McManus, #1 New York Times bestselling author of *One of Us is Lying* on Even If We Break "With exceptional handling of everything from mental illness to guilt and a riveting, magic realist narrative, this well wrought, haunting novel will stick with readers long after the final page."—Booklist on *Before I Let Go* *STARRED REVIEW* "A compelling, brutal story of an unfortunately all-too familiar situation: a school shooting. Nijkamp portrays the events thoughtfully, recounting fifty-four intense minutes of bravery, love, and loss."—BookRiot on *This Is Where It Ends*

Planets in Binary Star Systems Nader Haghighipour 2010-06-03 In 1988, in an article on the analysis of the measurements of the variations in the radial velocities of a number of stars, Campbell, Walker, and Yang reported an interesting phenomenon; the radial velocity variations of Cephei seemed to suggest the existence of a Jupiter-like planet around this star. This was a very exciting and, at the same time, very surprising discovery. It was exciting because if true, it would have marked the detection of the first planet outside of our solar system. It was surprising because the planet-hosting star is the primary of a binary system with a separation less than 19 AU, a distance comparable to the planetary distances in our solar system. The moderately close orbit of the stellar companion of Cephei raised questions about the reality of its planet. The skepticism over the interpretation of the results (which was primarily based on the idea that binary star systems with small separations would not be favorable places for planet formation) became so strong that in a subsequent paper in 1992, Walker and his colleagues suggested that the planet in the Cephei binary might not be real, and the variations in the radial velocity of this star might have been due to its chromospheric activities.

The Charm Offensive Alison Cochran 2021-09-07 A MOST ANTICIPATED ROM-COM SELECTED BY * BUZZFEED * LGBTQ READS * BUSTLE * THE NERD DAILY * ENTERTAINMENT TONIGHT * FROLIC MEDIA * AND MORE! A BEST BOOK PICK BY * HARPER'S BAZAAR * ENTERTAINMENT WEEKLY "The Charm Offensive will sweep you off your feet." —PopSugar In this witty and heartwarming romantic comedy—reminiscent of *Red, White & Royal Blue* and *One to Watch*—an awkward tech wunderkind on a reality dating show goes off-script when sparks fly with his producer. Dev Deshpande has always believed in fairy tales. So it's no wonder then that he's spent his career crafting them on the long-running reality dating show *Ever After*. As the most successful producer in the franchise's history, Dev always scripts the perfect love story for his contestants, even as his own love life crashes and burns. But then the show casts disgraced tech wunderkind Charlie Winshaw as its star. Charlie is far from the romantic Prince Charming *Ever After* expects. He doesn't believe in true love, and only agreed to the show as a last-ditch effort to rehabilitate his image. In front of the cameras, he's a stiff, anxious mess with no idea how to date twenty women on national television. Behind the scenes, he's cold, awkward, and emotionally closed-off.

As Dev fights to get Charlie to connect with the contestants on a whirlwind, worldwide tour, they begin to open up to each other, and Charlie realizes he has better chemistry with Dev than with any of his female co-stars. But even reality TV has a script, and in order to find to happily ever after, they'll have to reconsider whose love story gets told.

Dynamics of Close Binary Systems Zdenek Kopal 2012-12-06 The aim of the present book will be to provide a comprehensive account of our present knowledge of the theory of dynamical phenomena exhibited by close binary systems; and on the basis of such phenomena as have been attested by available observations to outline probable evolutionary trends of such systems in the course of time. The evolution of the stars - motivated by nuclear as well as gravitational energy sources - constitutes nowadays a well-established branch of stellar astronomy. No theories of such an evolution are as yet sufficiently specific - let alone infallible - not to require continual tests by a confrontation of their consequences with the observed properties of actual stars at different stages of their evolution. The discriminating power of such tests depends, of course, on the range of information offered by the test objects. Single stars which move alone in space are now known to represent only a minority of objects constituting our Galaxy (cf. Chapter 1-2); and are, moreover, not very revealing of their basic physical characteristics - such as their masses or absolute dimensions. If there were no binary systems in the sky, the only star whose vital statistics would be fully known to us would be our Sun.

An Introduction to the Theory of Stellar Structure and Evolution Dina Prialnik 2009-10-29 Using fundamental physics, the theory of stellar structure and evolution can predict how stars are born, how their complex internal structure changes, what nuclear fuel they burn, and their ultimate fate. This textbook is a stimulating introduction for undergraduates in astronomy, physics and applied mathematics, taking a course on the physics of stars. It uniquely emphasises the basic physical principles governing stellar structure and evolution. This second edition contains two new chapters on mass loss from stars and interacting binary stars, and new exercises. Clear and methodical, it explains the processes in simple terms, while maintaining mathematical rigour. Starting from general principles, this textbook leads students step-by-step to a global, comprehensive understanding of the subject. Fifty exercises and full solutions allow students to test their understanding. No prior knowledge of astronomy is required, and only a basic background in physics and mathematics is necessary.

Introduction to Astronomy and Cosmology Ian Morison 2013-03-18 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.

Spherical Astronomy Robin M. Green 1985-10-31 This introductory textbook assumes no prior knowledge of classical astronomy but is sufficiently comprehensive to be useful as a background reference work. It provides the essential background on mathematical technique and coordinate systems and discusses in detail, refraction, aberration, stellar parallax, precession, nutation and proper motion.

Language of the Stars Zdenek Kopal 1979-11-30 Eclipsing Variables - What They can Tell Us and What We can do with Them The aim of the present book will be to provide an introduction to the interpretation of the observed light changes of eclipsing binary stars and their analysis for the elements of the respective systems. Whenever we study the properties of any celestial body - be it a planet or a star - all information we wish to gain can reach us through two different channels: their gravitational attraction, and their light. Gravitational interaction between our Earth and its celestial neighbours is, however, measurable only at distances of the order of the dimensions of our solar system; and the only means of communication with the realm of the stars are their nimble-footed photons reaching us - with appropriate time-lag - across the intervening gaps of space. As long as a star is single and emits constant light, it does not constitute a very revealing source of information. A spectrometry of its light can disclose, to be sure, the temperature (colour, or ionization) of the star's semi-transparent outer layers, their chemical composition, and prevalent pressure (through Stark effect) or magnetic field (Zeeman effect), it can disclose even some information about its absolute luminosity or rate of spin. It cannot, however, tell us anything about what we should like to know most - namely, the mass or size (i.e., density) of the respective configuration; its absolute dimensions, or its internal structure.

Supernova Explosions David Branch 2017-08-02 Targeting advanced students of astronomy and physics, as well as astronomers and physicists contemplating research on supernovae or related fields, David Branch and J. Craig Wheeler offer a modern account of the nature, causes and consequences of supernovae, as well as of issues that remain to be resolved. Owing especially to (1) the appearance of supernova 1987A in the nearby Large Magellanic Cloud, (2) the spectacularly successful use of supernovae as distance indicators for cosmology, (3) the association of some supernovae with the enigmatic cosmic gamma-ray bursts, and (4) the discovery of a class of superluminous supernovae, the pace of supernova research has been increasing sharply. This monograph serves as a broad survey of modern supernova research and a guide to the current literature. The book's emphasis is on the explosive phases of supernovae. Part 1 is devoted to a survey of the kinds of observations that inform us about supernovae, some basic interpretations of such data, and an overview of the evolution of stars that brings them to an explosive endpoint. Part 2 goes into more detail on core-collapse and superluminous events: which kinds of stars produce them, and how do they do it? Part 3 is concerned with the stellar progenitors and explosion mechanisms of thermonuclear (Type Ia) supernovae. Part 4 is about consequences of supernovae and some applications to astrophysics and cosmology. References are provided in sufficient number to

help the reader enter the literature.

Modeling and Analysis of Eclipsing Binary Stars Andrej Prša 2018 "The fascinating and observationally spectacular world of binary stars is a vast and beautiful one that is a significant aspect of many astrophysical studies. Modeling and Analysis of Eclipsing Binary Stars gives a comprehensive analysis and description of the science behind eclipsing binaries. It also explores the assumptions and the difficulties that can occur when using the modeling principles of the classical codes as well as introducing PHOEBE (the PHysics Of Eclipsing BinariEs)--a modern suite for modeling binary stars. PHOEBE was conceived by Andrej Prša and his collaborators, and has become one of the standard tools in the eclipsing binary field."--Source : résumé de l'éditeur.

Advanced Stellar Astrophysics William K. Rose 1998-04-16 This advanced 1998 textbook on stellar astrophysics provides a comprehensive and self-contained introduction for graduate students.

Celestial Calculations J. L. Lawrence 2019-05-14 How to predict and calculate the positions of stars, planets, the sun, the moon, and satellites using a personal computer and high school mathematics. Our knowledge of the universe is expanding rapidly, as space probes launched decades ago begin to send information back to earth. There has never been a better time to learn about how planets, stars, and satellites move through the heavens. This book is for amateur astronomers who want to move beyond pictures of constellations in star guides and solve the mysteries of a starry night. It is a book for readers who have wondered, for example, where Saturn will appear in the night sky, when the sun will rise and set, or how long the space station will be over their location. In Celestial Calculations, J. L. Lawrence shows readers how to find the answers to these and other astronomy questions with only a personal computer and high school math. Using an easy-to-follow step-by-step approach, Lawrence explains what calculations are required, why they are needed, and how they all fit together. Lawrence begins with basic principles: unit of measure conversions, time conversions, and coordinate systems. He combines these concepts into a computer program that can calculate the location of a star, and uses the same methods for predicting the locations of the sun, moon, and planets. He then shows how to use these methods for locating the many satellites we have sent into orbit. Finally, he describes a variety of resources and tools available to the amateur astronomer, including star charts and astronomical tables. Diagrams illustrate the major concepts, and computer programs that implement the algorithms are included. Photographs of actual celestial objects accompany the text, and interesting astronomical facts are interspersed throughout. Source code (in Python 3, JAVA, and Visual Basic) and executables for all the programs and examples presented in the book are available for download at <https://CelestialCalculations.github.io>.

Finding Charts AM Cherepashchuk 1996-09-01 This two-part set provides a summary of data on approximately 500 close binary systems in the later evolutionary stages, all of which are currently major topics of binary star research. The

main parameters are presented for close binaries containing peculiar companions: Wolf-Rayet stars, white dwarfs, neutron stars and black holes.

An Introduction to Close Binary Stars R. W. Hilditch 2001-03-12 This 2001 book was the first to provide a pedagogical and comprehensive introduction to binary stars for advanced students.

An Introduction to the Evolution of Single and Binary Stars Matthew Benacquista 2012-11-28 An Introduction to the Evolution of Single and Binary Stars provides physicists with an understanding of binary and single star evolution, beginning with a background and introduction of basic astronomical concepts. Although a general treatment of stellar structure and evolution is included, the text stresses the physical processes that lead to stellar mass compact object binaries that may be sources of observable gravitational radiation. Basic concepts of astronomy, stellar structure and atmospheres, single star evolution, binary systems and mass transfer, compact objects, and dynamical systems are covered in the text. Readers will understand the astrophysics behind the populations of compact object binary systems and have sufficient background to delve deeper into specific areas of interest. In addition, derivations of important concepts and worked examples are included. No previous knowledge of astronomy is assumed, although a familiarity with undergraduate quantum mechanics, classical mechanics, and thermodynamics is beneficial.

Fundamental Astronomy Hannu Karttunen 2007-06-27 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.

Accretion Power in Astrophysics Juhan Frank 2002-01-17 An updated version of the popular graduate text on accretion in astrophysics.

Literature 1997, Part 1 Astronomisches Rechen-InstitutARI 2013-11-11 Astronomy and Astrophysics Abstracts is devoted to the recording, summarizing and indexing of astronomical publications throughout the world. Two volumes are scheduled to appear per year. Volume 67 records 10,903 papers covering besides the classical fields of astronomy and astrophysics such matters as space flights related to astronomy, lunar and planetary probes and satellites, meteorites and interplanetary matter, X rays and cosmic rays, quasars and pulsars. The abstracts are classified under more than one hundred subject categories thus permitting quick surveying of the bulk of material published on the same topic within six months. For instance, this volume records 119 papers

on minor planets, 155 papers on supernovae, and 554 papers on cosmology.

A Guide to Close Binary Systems Edwin Budding 2022-05-12 Introduction to Close Binary Systems provides a comprehensive survey and guide to the fast-moving field of multiple, specifically binary, stars, with an up to date account of research around 'close', i.e. interacting pairs. Such interactions allow direct quantification of stellar properties, opening up factual insights into basic building blocks of the Universe. The book provides a much needed update for the seminal Close Binary Systems of Zdeněk Kopal. Following a comparable plan, it presents relevant subject matter with an emphasis on building a framework of understanding to serve as a supporting resource for students and researchers. The text starts from a general historical background and progresses into the main theoretical ideas supporting our prima facie interpretation of observations. The central chapters explore further into these observational methods, arranged according to the classic subdivisions of astrometry, spectroscopy and photometry. Optimal inversion of observational data into model parametrization is a theme through these chapters. Significant here is the problem of how non-uniqueness in modelling affects interpretation. The underlying issues of stellar evolution bearing on observational evidence become paramount in the last four chapters. The book proceeds step-by-step from directly understandable examples of unevolved pairs to the challenging cases where stars are found in more and more extreme conditions, leading up to the mergers of massive black hole pairs seen in the new field of gravitational wave astronomy. This is a valuable reference for postgraduate and advanced undergraduate students working in mainstream areas of stellar astrophysics, with applications also to exoplanet research which shares some methodological features. Course designers for stellar astrophysics will find a useful selection of topics within this book. Key features: • Provides a well-explained and backgrounded, up-to-date account of close binary systems, in a fast-moving field of research that is growing in scientific importance • Surveys a wide range of case-studies within the context of binary and multiple star systems • Fills an acknowledged gap in current literature

Stellar Rotation Jean-Louis Tassoul 2000-04-13 Like the Earth and planets, stars rotate. Understanding how stars rotate is central to modelling their structure, formation and evolution, and how they interact with their environment and companion stars. This authoritative volume, first published in 2000, provides a lucid introduction to stellar rotation and the definitive reference to the subject. It combines theory and observation in a comprehensive survey of how the rotation of stars affects the structure and evolution of the Sun, single stars and close binaries. This book will be of primary interest to graduate students and researchers studying solar and stellar rotation and close binary systems. It will also appeal to those with a more general interest in solar and stellar physics, star formation, binary stars and the hydrodynamics of rotating fluids - including geophysicists, planetary scientists and plasma physicists.

Introduction to Stars and Planets Alan Hirshfeld 2020-12-22 How do astronomers

know what they know about the stars and planets? That is the question behind today's rapid pace of cosmic discovery, for every new finding rests upon a centuries-long foundation of astronomical practice. Introduction to Stars and Planets: An activities-based exploration reveals the methods by which Earthbound observers have deduced the physical attributes of celestial bodies, whether situated within our solar neighborhood or at the far ends of the galaxy. The book's 28 mildly mathematical activities invite readers to carry out the essential work of the astronomer by utilizing real observational data sets and high-quality celestial photographs to establish the innate properties of a range of cosmic systems. Taken in sequence, these activities illustrate the epic advancement of stellar and planetary astronomy over the past century, up to the present day. Key Features Wide-ranging topical coverage of both historical and up-to-the-minute aspects of astronomical discovery Uses a learning-by-doing approach Structured, goal-oriented framework centered on the methods and physical principles by which astronomers study the universe Provides real-time educational feedback to students Introduces elementary mathematics for students to gain a truer sense of the work astronomers do

The Little Book of Black Holes Steven S. Gubser 2017-09-25 Dive into a mind-bending exploration of the physics of black holes Black holes, predicted by Albert Einstein's general theory of relativity more than a century ago, have long intrigued scientists and the public with their bizarre and fantastical properties. Although Einstein understood that black holes were mathematical solutions to his equations, he never accepted their physical reality—a viewpoint many shared. This all changed in the 1960s and 1970s, when a deeper conceptual understanding of black holes developed just as new observations revealed the existence of quasars and X-ray binary star systems, whose mysterious properties could be explained by the presence of black holes. Black holes have since been the subject of intense research—and the physics governing how they behave and affect their surroundings is stranger and more mind-bending than any fiction. After introducing the basics of the special and general theories of relativity, this book describes black holes both as astrophysical objects and theoretical “laboratories” in which physicists can test their understanding of gravitational, quantum, and thermal physics. From Schwarzschild black holes to rotating and colliding black holes, and from gravitational radiation to Hawking radiation and information loss, Steven Gubser and Frans Pretorius use creative thought experiments and analogies to explain their subject accessibly. They also describe the decades-long quest to observe the universe in gravitational waves, which recently resulted in the LIGO observatories' detection of the distinctive gravitational wave “chirp” of two colliding black holes—the first direct observation of black holes' existence. The Little Book of Black Holes takes readers deep into the mysterious heart of the subject, offering rare clarity of insight into the physics that makes black holes simple yet destructive manifestations of geometric destiny.

A Voyage to Arcturus (□□□□) David Lindsay 2011-10-15 Scottish novelist David Lindsay (1876-1945) was born to a middle-class Calvinist family, forced by

poverty to work as an insurance clerk instead of attending university, and at the age of forty took up the cause and worked his way to Corporal of the Royal Army Pay Corps in World War I. After the war he moved to Cornwall with his wife and began writing full-time, publishing his first novel, "A Voyage to Arcturus," in 1920. Although the science fiction novel initially sold less than six hundred copies, it has come to be known as a major "underground" novel of the 20th century, and heavily influenced C.S. Lewis's "Out of the Silent Planet." The story is set at Tormance, an imaginary planet orbiting Arcturus, where an adventurous Scot named Muskall has travelled and where he encounters myriad characters and lands that reflect Lindsay's critique of various philosophical systems.

Structure and Evolution of Single and Binary Stars C. de Loore 2012-12-06
Classical stellar evolution theories have undergone some drastic changes in recent decades. New insights into the development of stellar interiors were obtained from studying stars in various stages of their lives, as well as with the help of fast computers, which gave a boost to the branch of numerical modelling of stellar structure and evolution. This book is divided into two parts. The first part deals with the general aspects of stellar structure and evolution including a chapter on numerical modelling. The second part deals with specific evolutionary aspects of single and binary stars with a variety of masses. The last chapter gives several models of stars with specific masses. The book is intended as an introduction for students, as well as a reference for researchers.

Stars: A Very Short Introduction A. R. King 2012-07-26 Stars are a constant source of fascination. In this Very Short Introduction Andrew King introduces us to the science of stars; how they are born, how they live, and how they die. He shows how understanding the stars is the key to understanding the galaxies they inhabit, and how they provide us with clues to the existence of planets like our own.

An Introduction to the Sun and Stars Simon F. Green 2015-02-19 Compiled by a team of experts, this textbook introduces the properties and evolution of the most immediately visible objects in the Universe - stars. Designed for elementary university courses in astronomy and astrophysics, it starts with a detailed discussion of our nearest star, the Sun, and describes how solar physicists have come to understand its internal workings. It then considers how we study the basic physical properties and life-cycles of more distant stars, culminating with a discussion of more 'exotic' objects, such as neutron stars and black holes. This second edition has a greater emphasis on the physical and spectral properties of stars, introducing stellar atmospheres, spectral line formation and the role of binary stars in the formation of compact objects. Avoiding complex mathematics, and generously illustrated in colour throughout, this accessible text is ideal for self-study and will appeal to both amateur astronomers and undergraduate students.

Evolutionary Processes in Binary and Multiple Stars Peter Eggleton 2006-07-20

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Binary systems of stars are as common as single stars. Stars evolve primarily by nuclear reactions in their interiors, but a star with a binary companion can also have its evolution influenced by the companion. Multiple star systems can exist stably for millions of years, but can ultimately become unstable as one star grows in radius until it engulfs another. This volume, first published in 2006, discusses the statistics of binary stars; the evolution of single stars; and several of the most important kinds of interaction between two (and even three or more) stars. Some of the interactions discussed are Roche-lobe overflow, tidal friction, gravitational radiation, magnetic activity driven by rapid rotation, stellar winds, magnetic braking and the influence of a distant third body on a close binary orbit. A series of mathematical appendices gives a concise but full account of the mathematics of these processes.

An Introduction to Modern Astrophysics Bradley W. Carroll 2017-09-07 A comprehensive and engaging textbook, covering the entire astrophysics curriculum in one volume.

Fundamentals of Astrodynamics Roger R. Bate 1971-01-01 Teaching text developed by U.S. Air Force Academy and designed as a first course emphasizes the universal variable formulation. Develops the basic two-body and n-body equations of motion; orbit determination; classical orbital elements, coordinate transformations; differential correction; more. Includes specialized applications to lunar and interplanetary flight, example problems, exercises. 1971 edition.

Stellar Evolution Amos Harpaz 1993-06-15 This book addresses the fascinating subject of astrophysics from its theoretical basis to predominant research conducted in the field today. An accomplished researcher in the field and a well-known expositor, the author strikes a balance that allows the serious reader to appreciate the current issues without previous knowledge of the subject. Astron

Eclipsing Binary Stars Josef Kallrath 2013-11-11 Focussing on the formulation of mathematical models for the light curves of eclipsing binary stars, and on the algorithms for generating such models, this book provides astronomers, both amateur and professional, with a guide for - specifying an astrophysical model for a set of observations - selecting an algorithm to determine the parameters of the model - estimating the errors of the parameters. It is written for readers with knowledge of basic calculus and linear algebra; appendices cover mathematical details on such matters as optimisation, co-ordinate systems, and specific models. While emphasising the physical and mathematical framework, the discussion remains close to the problems of actual implementation. The book concludes with chapters on specific models and approaches and the authors' views on the structure of future light-curve programs.

Radiative Transfer Subrahmanyan Chandrasekhar 2013-04-15 This book by a Nobel Laureate provides the foundation for analysis of stellar atmospheres, planetary illumination, and sky radiation. Suitable for students and professionals in

physics, nuclear physics, astrophysics, and atmospheric studies. 1950 edition.

Lectures on Astrophysics Steven Weinberg 2019-11-30 An account of classic and contemporary aspects of astrophysics, with an emphasis on analytical calculations and physical understanding.

Highly Evolved Close Binary Stars Anatoliĭ Mikhaĭlovich Cherepashchuk 1996