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Prentice Hall Science Explorer NASA Historical Data Book: Programs and projects, 1958-1968 The Decade of Discovery in Astronomy and Astrophysics Semiannual Report to the Congress Reports and Documents Report to the Congress NASA Historical Data Book: Programs and projects, 1969-1978 The Herschels and Modern Astronomy Discovering the Cosmos with Small Spacecraft Space Explorers Astronomy and Astrophysics for the 1980's, Volume 1 Explorers of the Southern Sky On the Job with an Astronomer Software and Data for Practical Astronomers Observational Astronomy A New Science Strategy for Space Astronomy and Astrophysics Issues in Astronomy and Astrophysics: 2013 Edition Astronomy and Astrophysics in the New Millennium United States Space Science Program Experimental Astronomy The Decade of Discovery in Astronomy and Astrophysics Exploring the Unknown Taking Back Astronomy Design Studies for a Multi-TeV [gamma]-ray Telescope Array Portals to the Universe Software and Data for Practical Astronomers Electronic Imaging in Astronomy Weather and Climate To Measure the Sky Space and Astronomy Piloting Through Chaos - The Explorer's Mind Astronomy For Dummies® NASA Historical Data Book Explorer of the Universe: A Biography of George Ellery Hale NASA Historical Data Book. Volume 2: Programs and Projects 1958-1968 Project STAR X-Ray Astronomy New Worlds, New Horizons in Astronomy and Astrophysics Science Explorer C2009 Book F Student Edition ENC Focus

X-Ray Astronomy Jan 20 2020 It was about fourteen years ago that some of us became intrigued with the idea of searching the sky for X-ray and gamma-ray sources other than the Sun, the only celestial emitter of high-energy photons known at that time. It was, of course, clear that an effort in this direction would not have been successful unless there occurred, somewhere in space, processes capable of producing high-energy photons much more efficiently than the processes responsible for the radiative emission of the Sun or of ordinary stars. The possible existence of such processes became the subject of much study and discussion. As an important part of this activity, I wish to recall a one-day conference on X-ray astronomy held at the Smithsonian Astrophysical Observatory in 1960. The theoretical predictions did not provide much encouragement. While several 'unusual' celestial objects were pin-pointed as possible, or even likely, sources of X-rays, it did not look as if any of them would be strong enough to be observable with instru mentation not too far beyond the state of the art. Fortunately, we did not allow our selves to be dissuaded. As far as I am personally concerned, I must admit that my main motivation for pressing forward was a deep-seated faith in the boundless re sourcefulness of nature, which so often leaves the most daring imagination of man far behind.

Software and Data for Practical Astronomers Jan 12 2022 There is a vast amount of astronomical software on the Internet, but unless you're prepared to spend months looking for it and hours downloading it, you won't be able to match this collection!

Electronic Imaging in Astronomy Nov 29 2020 The second edition of Electronic Imaging in Astronomy: Detectors and Instrumentation describes the remarkable developments that have taken place in astronomical detectors and instrumentation in recent years – from the invention of the charge-coupled device (CCD) in 1970 to the current era of very large telescopes, such as the Keck 10-meter telescopes in Hawaii with their laser guide-star adaptive optics which rival the image quality of the Hubble Space Telescope. Authored by one of the world's foremost experts on the design and development of electronic imaging systems for astronomy, this book has been written on several levels to appeal to a broad readership. Mathematical expositions are designed to encourage a wider audience, especially among the growing community of amateur astronomers with small telescopes with CCD cameras. The book can be used at the college level for an introductory course on modern astronomical detectors and instruments, and as a supplement for a practical or laboratory class.

Project STAR Feb 19 2020 The Universe in Your Hands Project STAR (Science Teaching through its Astronomical Roots) is an astronomy course that also teaches real-world math and physics. Project STAR capitalizes on students' inherent interest in the limitless universe that surrounds them. This second edition uses a new approach that is consistent with the philosophy of the authors: students learn science better by making measurements and observations than by memorizing "facts." Each chapter begins with questions to test preheld views on certain subjects. Students then use measurements and observations to explore the models in the chapters. Questions are sprinkled throughout the book to test understanding along with cartoons to leaven the learning with humor. Hands-on activities play an essential role in this 1-year course. In completing these hands-on activities, students will: make observations of the skies build models use models to explain observations and make predictions find everyday applications for such models The Student Text for Project STAR, Second Edition includes updated information, is easier to use and visually more appealing. The material is laid out with new illustrations for greater clarity and understanding. A color plate section supports activities and text related to the study of spectra. A reference section has also been added. It lists astronomy resources on the web. The Astronomy Explorer CD-ROM is included with the Student Text. This interactive CD-ROM contains movies and animations related to astronomy. The student exercises provide an excellent foundation for understanding the complexities of the universe. A glossary of terms is also part of the CD.

Exploring the Unknown May 04 2021 "Exploring the unknown" is a multi-volume series containing a selection of key documents in the history of the U.S. civil space program. Volume V, focusing on the exploration of space by robotic spacecraft that have significantly altered our perspectives on the cosmos, prints 121 key documents

on the history of space science, planetary exploration of the solar system, and space astrophysics, edited for ease of use. Many of these documents are published here for the first time. Each is introduced by a headnote providing context, bibliographical information, and background information necessary to understanding the document. This documentary history is an essential reference for anyone interested in the history of the U.S. civil space program and its development over time. It will serve as a valuable source both for students and scholars. Additional volumes will appear later that trace space science and the programmatic developments in the history of the U.S. exploration of space.

Space and Astronomy Aug 27 2020 Contains a history of the subjects of space and astronomy, providing definitions and explanations of related topics, plus brief biographies of scientists of the twentieth century.

Issues in Astronomy and Astrophysics: 2013 Edition Oct 09 2021 Issues in Astronomy and Astrophysics / 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Planetary Science. The editors have built Issues in Astronomy and Astrophysics: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Planetary Science in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Astronomy and Astrophysics: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

To Measure the Sky Sep 27 2020 With a lively yet rigorous and quantitative approach, this textbook introduces the fundamental topics in optical observational astronomy for undergraduates. It explains the theoretical foundations for observational practices and reviews essential physics to support students' mastery of the subject. Student understanding is strengthened through over 120 exercises and problems.

On the Job with an Astronomer Feb 13 2022 Describes job training and includes activities that focus on a special set of abilities important to the career.

Reports and Documents Oct 21 2022

Astronomy For Dummies® Jun 24 2020 An accessible guide to the wonders of the night sky, now updated From asteroids to black holes, from quasars to white dwarfs, this new edition of Astronomy For Dummies takes backyard stargazers on a grand tour of the universe. Featuring star maps, charts, gorgeous full-color photographs, and easy-to-follow explanations, this fact-filled guide gives readers a leg up on the basic principles of astronomy and shows how to get the most out of binoculars, telescopes, planetarium visits, and other fun astronomical activities. This updated edition includes an updated color signature and covers the many discoveries made in

recent years, as well as new astronomy Web sites.

NASA Historical Data Book May 24 2020

A New Science Strategy for Space Astronomy and Astrophysics Nov 10 2021

New Worlds, New Horizons in Astronomy and Astrophysics Dec 19 2019 Driven by discoveries, and enabled by leaps in technology and imagination, our understanding of the universe has changed dramatically during the course of the last few decades. The fields of astronomy and astrophysics are making new connections to physics, chemistry, biology, and computer science. Based on a broad and comprehensive survey of scientific opportunities, infrastructure, and organization in a national and international context, New Worlds, New Horizons in Astronomy and Astrophysics outlines a plan for ground- and space- based astronomy and astrophysics for the decade of the 2010's. Realizing these scientific opportunities is contingent upon maintaining and strengthening the foundations of the research enterprise including technological development, theory, computation and data handling, laboratory experiments, and human resources. New Worlds, New Horizons in Astronomy and Astrophysics proposes enhancing innovative but moderate-cost programs in space and on the ground that will enable the community to respond rapidly and flexibly to new scientific discoveries. The book recommends beginning construction on survey telescopes in space and on the ground to investigate the nature of dark energy, as well as the next generation of large ground-based giant optical telescopes and a new class of space-based gravitational observatory to observe the merging of distant black holes and precisely test theories of gravity. New Worlds, New Horizons in Astronomy and Astrophysics recommends a balanced and executable program that will support research surrounding the most profound questions about the cosmos. The discoveries ahead will facilitate the search for habitable planets, shed light on dark energy and dark matter, and aid our understanding of the history of the universe and how the earliest stars and galaxies formed. The book is a useful resource for agencies supporting the field of astronomy and astrophysics, the Congressional committees with jurisdiction over those agencies, the scientific community, and the public.

Astronomy and Astrophysics for the 1980's, Volume 1 Apr 15 2022

Space Explorers May 16 2022 The Magic School Bus blasts off on a tour of the Milky Way planets, and the kids discover how the other planets are different from Earth. Not only do they all have different temperatures, but each planet has a different atmosphere as well. Ms. Frizzle's class finds out how far away the planets are, and how long it would really take to get there if they didn't have a Magic School Bus.

NASA Historical Data Book: Programs and projects, 1958-1968 Jan 24 2023

Piloting Through Chaos - The Explorer's Mind Jul 26 2020 Piloting Through Chaos?The Explorer?s Mind presents two books in one, giving readers a fresh way to learn about and navigate the world. Book I introduces the principle of integrity. Integrity is a basic connecting principle of the universe. It can explain what holds things together and why they fall apart. Piloting Through Chaos teaches how to apply this principle

practically in a new and effective system of negotiation. Book II will appeal to adventurers and explorers of both the external and inner worlds. The Explorer?s Mind guides us through 8 interconnected realms: the Past, Wisdom, Beauty, Life Force, Discovery/Invention/Innovation, Philanthropy, the Networked Brain, and the Future. The ?intertidal? zones, where these realms interpenetrate, open a treasure trove of creativity and innovation. Taken together Books I and II provide readers with a road map to a more abundant life and offer a guide on the journey.

Design Studies for a Multi-TeV [gamma]-ray Telescope Array Mar 02 2021 This thesis presents work towards the design of a new array of Image Atmospheric Cherenkov Telescopes (IACTs) to detect multi-TeV (E > 101 2 eV) [gamma]-ray sources. The array consists of 5 telescopes in a square layout with one central telescope, known as the Pevatron eXplorer or PeX. PeX is a PeV (101 5 eV) cosmic ray explorer that aims to study and discover [gamma]-ray sources in the 1 to 500 TeV range. The initial PeX design has been influenced by the HEGRA CT-System and H.E.S.S. configurations. One important feature of multi-TeV air showers is their ability to trigger telescopes at large core distance (> 400 m). PeX will utilise large core distance events to improve the performance and illustrate the viability of a sparse array for multi-TeV [gamma]-ray astronomy. In Chapter 1, I will discuss the astrophysical motivation behind multi-TeV observations. A number of [gamma]-ray sources have shown emission that extends above 10 TeV, for example unidentified source HESS J1908-063. A new multi-TeV detector can provide a new look at the Galactic plane and work towards uncovering the origin of Galactic cosmic ray acceleration. In Chapter 2, I will look at the physics of air showers, which involves the interaction of protons and [gamma]-rays with the atmosphere to form a cascade of particles. I will discuss the lateral distribution for [gamma]-rays and show the importance of large core distance shower for multi-TeV events. Gamma-ray showers with an image size > 60pe can be detected up to 700 m away from PeX for 500 TeV showers. In Chapter 3, I introduce PeX in detail along with the simulation programs used to model it. I discuss the standard shower reconstruction algorithm (Algorithm 1) and an advanced shower reconstruction algorithm (Algorithm 3). I also introduce the image parameters that I will investigate while optimising PeX, which include; site altitude, image triggering conditions, image cleaning conditions, telescope separation and image size cut. In Chapter 4, I have optimised the PeX cell for a low altitude (0.22 km) observational site using Algorithm 1. Parameters such as telescope separation, triggering combination, cleaning combination and image size cut have been varied over a range of values to provide the optimum results for PeX. In Chapter 5, I have optimised the PeX cell for a higher altitude (1.8 km) observational site using Algorithm 1. The same parameter variations considered in Chapter 4 have been used in Chapter 5. It appears that scaling the H.E.S.S. values to appropriate values for PeX provides the near optimum results. A comparison between the site altitudes suggests that a 0.22 km altitude provides the slightly better performance for energy > 10 TeV. In Chapter 6, a new time cleaning cut has been investigated.

The arrival time between photons in two adjacent pixels in the camera is used to apply an extra cut which helps mitigate night sky background. To illustrate the robustness of the time cleaning cut, various level of night sky background have been considered. These levels include: off-Galactic plane, on-Galactic plane and towards the Galactic centre. The most important result is that PeX performance with a time cleaning cut improves results when a high level of night sky background is present. For a Galactic centre level of night sky background there is a factor of 1.5 improvement in angular resolution, effective area and quality factor when a time cleaning cut is applied compared to using no time cleaning cut. In Chapter 7, Algorithm 3 has been considered. A smaller sample of parameter variations has been simulated to confirm that the same trends found in Chapters 4 and 5 appear for Algorithm 3. The site altitude and time cleaning cut have also been considered. Algorithm 3 provides a direction reconstruction improvement over Algorithm 1 especially for large core distance events which are important for PeX. In Chapter 8, I consider some possible enhancements to PeX. These enhancements include: varying pixel size and pixel arrangement in the camera, further cuts to rejection proton events and possible separation between proton and [gamma]-ray pulses. Chapter 8 also provides the flux sensitivity results for multiple PeX configurations. The final configuration and flux sensitivity for PeX is presented in this Chapter. This work shows the value of a sparse array of Cherenkov telescopes to open up the > 10 TeV energy regime.

Astronomy and Astrophysics in the New Millennium Sep 08 2021 In this new book, a distinguished panel makes recommendations for the nation's programs in astronomy and astrophysics, including a number of new initiatives for observing the universe. With the goal of optimum value, the recommendations address the role of federal research agencies, allocation of funding, training for scientists, competition and collaboration among space facilities, and much more. The book identifies the most pressing science questions and explains how specific efforts, from the Next Generation Space Telescope to theoretical studies, will help reveal the answers. Discussions of how emerging information technologies can help scientists make sense of the wealth of data available are also included. Astronomy has significant impact on science in general as well as on public imagination. The committee discusses how to integrate astronomical discoveries into our education system and our national life. In preparing the New Millennium report, the AASC made use of a series of panel reports that address various aspects of ground- and space-based astronomy and astrophysics. These reports provide in-depth technical detail. Astronomy and Astrophysics in the New Millenium: An Overview summarizes the science goals and recommended initiatives in a short, richly illustrated, non-technical booklet.

Portals to the Universe Feb 01 2021 The astronomy science centers established by the National Aeronautics and Space Administration (NASA) to serve as the interfaces between astronomy missions and the community of scientists who utilize the data

have been enormously successful in enabling space-based astronomy missions to achieve their scientific potential. These centers have transformed the conduct of much of astronomical research, established a new paradigm for the use of large astronomical facilities, and advanced the science far beyond what would have been possible without them. Portals to the Universe: The NASA Astronomy Science Centers explains in detail the findings of this report.

Experimental Astronomy Jul 06 2021 Socrates knew all that was known by his contemporaries. But already in the Middle Ages it was becoming difficult for a single man to have a truly encyclopedic view of all human knowledge. It is true that Pico della Mirandola, Pius II, Leonardo da Vinci, and several other great minds were thoroughly in possession of considerable know ledge, and knew all that one could know, except no doubt for some techniques. The encyclopedists of the 18th century had to be content with an admirable survey: they could not go into details, and their work is a collective one, the specialized science of each collaborator compensating for the insufficiencies of the others. We know very well that our science of today is a science of specialists. Not only is it impossible for anyone person to assimilate the totality of human knowledge, it is impossible even to know ones own discipline perfectly thoroughly. Each year the presses of science pro duce a frightening quantity of printed paper. Even in very limited fields, new journals are created every day, devoted to extremely specialized, often very narrowly defined subjects. It is indeed evident that in a field whose scope extends well beyond astronomical or astrophysical research, it is materially impossible to be informed of everything, even with the richest of libraries at hand.

Semiannual Report to the Congress Nov 22 2022

The Decade of Discovery in Astronomy and Astrophysics Jun 05 2021 Astronomers and astrophysicists are making revolutionary advances in our understanding of planets, stars, galaxies, and even the structure of the universe itself. The Decade of Discovery presents a survey of this exciting field of science and offers a prioritized agenda for space- and ground-based research into the twenty-first century. The book presents specific recommendations, programs, and expenditure levels to meet the needs of the astronomy and astrophysics communities. Accessible to the interested lay reader, the book explores: The technological investments needed for instruments that will be built in the next century. The importance of the computer revolution to all aspects of astronomical research. The potential usefulness of the moon as an observatory site. Policy issues relevant to the funding of astronomy and the execution of astronomical projects. The Decade of Discovery will prove valuable to science policymakers, research administrators, scientists, and students in the physical sciences, and interested lay readers. Alternate Selection, Astronomy Book Club

Taking Back Astronomy Apr 03 2021 "This book is meant to be an introduction only - a starting point to a biblical view of the universe. . . . Who knows what amazing truths are waiting to be discovered if only the shackles of secular thinking are

removed. Now is the time of discovery..." Take a breathtaking look at the universe that is comprehensive guide to the heavens! Sit back and explore the world at your fingertips in this book which: Explains the scale and size of the universe that is hard for our minds to imagine - yet can only indicate the Master's hand at work. Over 50 full-color, rarely seen photos of stars, nebulas, and galaxies. Filled with facts that challenge secular theories and models of the universe - how it began and how it continues to amaze the scientific community. Explores numerous evidences that point to a young universe: magnetic poles of planets, the spiral shape of galaxies, comets and how long scientists think they can last, and much more. With a doctorate in astrophysics from the University of Colorado, Dr. Jason Lisle is your guide to the universe beyond our world in this remarkable book. Step out among the stars and experience the truly awesome power of God through this glimpse of His vast creation.

United States Space Science Program Aug 07 2021

Weather and Climate Oct 29 2020

The Herschels and Modern Astronomy Jul 18 2022 The Herschels and Modern Astronomy by Agnes M. Clarke is a historical biography of the lives of Sir William Herschel (1738 - 1822), his sister Caroline, and his son Sir John Herschel and the influence of their work in the field of modern astronomy. The book is a recollection of Herschel's scientific writing, journal and monograph pieced together to make a 10-chapter book. It is a scientific literary treasure worth reading if you are interested in the history of astronomy and the lives of the people that shaped modern astronomy.

Report to the Congress Sep 20 2022

Software and Data for Practical Astronomers Dec 31 2020 The Internet contains so much information and data for astronomers that just finding what you want is a daunting task, and downloading can take hours of computer and telephone time.

Prentice Hall Science Explorer Feb 25 2023

Explorers of the Southern Sky Mar 14 2022 The most comprehensive account of Australian astronomy to date.

ENC Focus Oct 17 2019

The Decade of Discovery in Astronomy and Astrophysics Dec 23 2022 Astronomers and astrophysicists are making revolutionary advances in our understanding of planets, stars, galaxies, and even the structure of the universe itself. The Decade of Discovery presents a survey of this exciting field of science and offers a prioritized agenda for space- and ground-based research into the twenty-first century. The book presents specific recommendations, programs, and expenditure levels to meet the needs of the astronomy and astrophysics communities. Accessible to the interested lay reader, the book explores: The technological investments needed for instruments that will be built in the next century. The importance of the computer revolution to all aspects of astronomical research. The potential usefulness of the moon as an observatory site. Policy issues relevant to the funding of astronomy and the

execution of astronomical projects. The Decade of Discovery will prove valuable to science policymakers, research administrators, scientists, and students in the physical sciences, and interested lay readers.

NASA Historical Data Book: Programs and projects, 1969-1978 Aug 19 2022

Explorer of the Universe: A Biography of George Ellery Hale Apr 22 2020 "George Ellery Hale [1868-1938] is the subject of this impressive biography... Wright charts Hale's steady progress towards leadership in the nascent field of astrophysics from his childhood experiments at home in Chicago, through student days at MIT, to his first observatory at Kenwood, all of which demonstrate his passion for unravelling the secrets of nature through the then new medium of spectroscopy. This enthusiasm led him into contact with most of his peers both in America and beyond (Lockyer, Huggins, Pickering, Rowland, and many more), many of whom remained close associates and correspondents for years after. Probably this sense of community made Hale so active in the organization of science, including the formation of the AAS [American Astronomical Society], the IAU [International Astronomical Union], and ICSU [International Council of Scientific Unions]. It also gave him the contacts to give the Astrophysical Journal such a good start in 1895. Perhaps the greatest debt we owe Hale is for his relentless drive towards the creation of ever bigger and better facilities, starting with the still unsurpassed Yerkes refractor, continuing with the solar telescopes on Mt. Wilson and then the 60- and 100-inch telescopes on the same peak, and concluding with the 200-inch [at Mt. Palomar]... Scientifically, Hale's lifelong affair with the Sun brought him success in the detection of magnetic fields and early studies of surface activity by means of the spectroheliograph he developed, and for which he was duly fêted, and the frustrations of trying to record the corona. But these were early successes and as astropolitics and finance took an ever increasing share of his time, he was able to contribute less than he would have liked. Part of the problem was the illness, with both physical and mental symptoms, which progressively plagued the life of this hyperactive polymath; it is sad to note his decline which prevented him playing a fuller part in the creation of what was to become his memorial... this [biography] is something of a classic on one of astronomy's giants." — David Strickland, The Observatory "This important biography is well written and is highly recommended." — A. E. Covington, Journal of the Royal Astronomical Society of Canada "[An] outstanding biography of this most remarkable man... Helen Wright has done a superb job of tracing Hale's development not only of new and powerful instruments and of his important discoveries of sunspot magnetic fields and the law of reversing polarities, but also of the embryonic state of American science in the early days of this century... an authoritative biography of one of the most influential men of science this country has produced. The hook will bring to contemporary scientists and historians the story of this unique astronomer whose life is of such special interest to the Caltech community." — Allan Sandage, Caltech Magazine (formerly Engineering and Science) "Helen Wright gives a detailed account of the life and almost frantic activities of this remarkable scientific leader... In

summarizing astrophysical events of the years 1880 to 1950... Wright has provided a useful and fascinating account of scientific development that led to the preeminence of the United States." — Thornton Page, Science "In writing the story of Hale's origins, career and bequest to posterity Helen Wright has richly served her fellow astronomers. No one else could have done so well. Her account preserves an admirable balance in presenting Hale not only as a doer but also as a dreamer... Miss Wright's excellent biography covers the highlights of his career... Miss Wright's book is highly authentic." — Harlow Shapley, Scientific American Published under license from Springer Science+Business Media, LLC, part of Springer Nature

NASA Historical Data Book. Volume 2: Programs and Projects 1958-1968 Mar 22 2020

Discovering the Cosmos with Small Spacecraft Jun 17 2022 Explorer was the original American space program and Explorer 1 its first satellite, launched in 1958. Sixty years later, it is the longest continuously running space program in the world, demonstrating to the world how we can explore the cosmos with small spacecraft. Almost a hundred Explorers have already been launched. Explorers have made some of the fundamental discoveries of the Space Age. Explorer 1 discovered Earth's radiation belts. Later Explorers surveyed the Sun, the X-ray and ultraviolet universes, black holes, magnetars and gamma ray bursts. An Explorer found the remnant of the Big Bang. One Explorer chased and was the first to intercept a comet. The program went through a period of few launches during the crisis of funding for space science in the 1980s. However, with the era of 'faster, cheaper, better,' the program was reinvented, and new exiting missions began to take shape, like Swift and the asteroid hunter WISE. Discovering the Cosmos with Small Spacecraft gives an account of each mission and its discoveries. It breaks down the program into its main periods of activity and examines the politics and debate on the role of small spacecraft in space science. It introduces the launchers (Juno, Thor, etc.), the launch centers, the ground centers and key personalities like James Van Allen who helped develop and run the spacecraft's exciting programs.

Science Explorer C2009 Book F Student Edition Nov 17 2019 1. Plate Tectonics 2. Earthquakes 3. Volcanoes 4. Minerals 5. Rocks

Observational Astronomy Dec 11 2021 New and updated edition of advanced undergraduate or beginning graduate textbook on observational astronomy.