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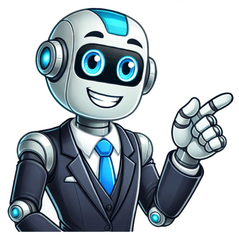

AttributionCC BY Learn more about reviews.Reviewed by Liliana Rivera Sandoval, Assistant professor, University of Texas Rio Grande Valley on 12/5/22The book covers a great variety of topics, relevant in modern astronomy. They go from Earth to cosmology. The level is appropriate for an introductory course for non-science majors. Each chapter is very complete and well organized. Accompanying...read moreReviewed by Liliana Rivera Sandoval, Assistant professor, University of Texas Rio Grande Valley on 12/5/22Comprehensivenessrating:5see lessThe book covers a great variety of topics, relevant in modern astronomy. They go from Earth to cosmology. The level is appropriate for an introductory course for non-science majors. Each chapter is very complete and well organized. Accompanying images are also illustrative and relevant to the topic. Problems that include calculations and formulae are simple but useful, they are relevant to the information discussed. I liked the inclusion of biographies of astronomers along history, including several women.Content Accuracyrating:5The text appears to be accurate. The images are well explained and well labeled, most of them come from reliable sources such as NASA, ESA, ESO, etc. Many videos also come from reliable sources such as national museums. Unfortunately, some videos are not available anymore on the Youtube platform. I wish they were in a book's dedicated Youtube channel, so the videos would always be available.Relevance/Longevityrating:5I was pleasantly surprised to discover that this book is mostly up-to-date, the online version more than the printed one which makes sense considering is easier to update things digitally. Sure, some topics are not included (e.g. the Artemis mission) but information about relevant astronomical findings such as the detection of gravitational waves with LIGO/VIRGO is included. Other recently launched NASA satellites such as the asteroid mission DART and the amazing JWST are also mentioned. Clarityrating:5The book is very easy to understand, very descriptive and virtually no mathematics are included (the solved exercises included are easy to understand and involve simple formulae). This is a great resource for introducing astronomy to non-science majors. There are many analogies to make the concepts easier to understand, even complex concepts are explained in a very digestible way.Consistencyrating:5The difficulty level of all the chapters in the book is the same. The structure and organization is consistent throughout the whole text. The writing style is also consistent.Modularityrating:5Text is concise which keeps the attention of the reader focussed. At the end of each chapter there is a summary with the key terms introduced/described in that module, as well as a summary of each subtopic. It also includes references, activities, websites, exercises and videos that help to reinforce the concepts explained. Since the chapters are well defined and organized, one can skip sections or select only the necessary material when explaining a topic.Organization/Structure/Flowrating:5The structure of the book is overall very good. The complexity and content of the chapters build over the previous ones. Also, each chapter has its outline and a brief introduction which usually include some open questions. The idea is to make the reader think ahead about topics that will be covered in the chapter.Interfacerating:5The online version and PDF worked well. Unfortunately some links to the (YouTube) videos do not work anymore, the owner has removed the content. Hyperlinks between the chapters in the PDF or online version work without problems.Grammatical Errorsrating:5I did not detect any relevant one. Perhaps a typo, but it did not alter the meaning of the concept explained.Cultural Relevancerating:3As a female astronomer I really appreciated the sections dedicated to the contributions of women to astronomy along history. However, I would have liked to see more diversity, i.e. contributions from women/men of color. Similarly, I think the contributions from other nations should be mentioned in a more extensive way, for example the launching of different missions to explore the cosmos. A less biased view to the USA contributions to astronomy would be appreciated. Contributions from Latin American astronomers (e.g. Guillermo Haro, hence Herbig-Haro objects) were not mentioned at all, only the Mayans were briefly mentioned at the beginning of the book. CommentsOverall this book is very good for a course of introduction to Astronomy. Best part is that it is accessible to everyone. I think I will keep using it and I would recommend other astronomers to do so. I mostly criticize the lack of diversity. A less biased view to the USA contributions to astronomy would be appreciated since several countries and people of color have done, and are doing great contributions to astronomy. Also, I think a YouTube channel including copies of the videos (of course with the appropriate credits mentioned) currently listed in the book would be useful in case the videos are deleted in their original host channels, though I also understand this might not be possible due to permission issues.Reviewed by Doug Patterson, Professor, Johnson County Community College on 4/28/22There are a few subjects which I feel are underrepresented in this text. Most notably, the discussions regarding binary stars is rather terse. I did not find a discussion of the various physical types of binaries (contact, semi-detached, and...read moreReviewed by Doug Patterson, Professor, Johnson County Community College on 4/28/22Comprehensivenessrating:4see lessThere are a few subjects which I feel are underrepresented in this text. Most notably, the discussions regarding binary stars is rather terse. I did not find a discussion of the various physical types of binaries (contact, semi-detached, and detached) and a discussion of detection methods is rather lightweight. A global issue throughout all sections of the text is minimal numeric analysis. Three key examples are a lack of showing how Kepler's Third Law can be derived using Newton's laws to determine mass of not just stars, but for any two-body system; the lack of any treatment of absolute magnitude and its use in determining stellar distances; and the lack of demonstrating how the individual masses in a binary star system can be found. The mathematical treatments in this text seem more geared to a high-school level than to a college level setting.Content Accuracyrating:5I found no inaccuracies in my reading. Omissions, but not inaccuracies.Relevance/Longevityrating:5Astronomy is a difficult topic in which to maintain currency. With the rapid evolution of our understanding of the Universe, a traditional print textbook becomes outdated almost before it arrives in the classroom. The authors of this text do a good job at keeping the text current. Clarityrating:5The prose of the text is well-written and is readable and digestible by those who are new to astronomy.Consistencyrating:5The writing style and chapter structures are consistent throughout the text.Modularityrating:5I like that not only can each chapter in the text be uniquely referenced and linked, but so can individual sections. This makes arranging the sections in the order in which I present the material in my classroom significantly easier.Organization/Structure/Flowrating:4The organization is consistent with other industry-standard texts, but that doesn't make it the most effective structure.Interfacerating:5I appreciate that there are multiple methods of interacting with this text. While I prefer interacting directly through the website, I also enjoy having the PDF to use as a back-up.Grammatical Errorsrating:5I have encountered no grammatical errors in my reading of the text.Cultural Relevancerating:5I was pleased to see the contributions of women astronomers has a strong presence in this text. CommentsI would like to see the text use more interactive tools and demonstrations as embedded elements within the text.Reviewed by Ashley Pagnotta, Assistant Professor, College of Charleston on 9/23/21This textbook is fairly comprehensive, covering astronomy from its early development in the Middle East to relatively modern discoveries. The breadth and depth seem similar to other intro astro textbooks I have used. One topic I found to be...read moreReviewed by Ashley Pagnotta, Assistant Professor, College of Charleston on 9/23/21Comprehensivenessrating:4see lessThis textbook is fairly comprehensive, covering astronomy from its early development in the Middle East to relatively modern discoveries. The breadth and depth seem similar to other intro astro textbooks I have used. One topic I found to be somewhat lacking was exoplanets, with small bits of information scattered across a few different chapters, instead of a dedicated chapter, which I'd say is warranted given their recent dominance of astronomy in general.Content Accuracyrating:5The book is kept highly accurate thanks to the ongoing process of identifying and fixing errata, along with improving some of the wording, via the publicly available Errata Release Notes. I find this to be one of the big advantages of textbooks like this.Relevance/Longevityrating:5The material in the book is nicely up-to-date. I appreciate how quickly big discoveries (e.g. the imaging of the M87 supermassive black hole) are added into the text. While the majority of the content is "classic" astronomy that isn't changing, it's nice to have updates about the "newsworthy" topics. Clarityrating:5The book is easy to read, with well-explained examples and useful analogies. I appreciate how the online and app versions have live links to other chapters that are referred to, which is handy for going back and looking up terms and concepts that have been forgotten. Occasionally the chapter titles are a bit vague, but the ease of searching the full text makes up for this.Consistencyrating:5The book is consistent throughout.Modularityrating:5Each chapter is broken down into an appropriate number of sections which can easily be assigned in advance of the day they will be covered in class. The instructor resources provide a few course sequence options for different types/scopes of classes, which is really helpful.Organization/Structure/Flowrating:4The organization is similar to that of similar textbooks. It starts with a brief intro to the history and process of science, covers the solar system then the sun, and then moves out to stars and galaxies. My only quibble is what I mentioned above about exoplanet information between split between a few chapters instead of getting a dedicated, more comprehensive treatment.Interfacerating:4I personally dislike the standard online textbook interface of having each section on a different page, because it makes it difficult to digitally "flip through" a chapter looking for something specific. It's probably good for students reading the book for the first time, though. In the app version, there is no easy way to advance to the next section; you have to go back to the chapter table of contents and select the next section from there. The online/browser version at least has Previous and Next buttons that allow you to directly to the neighboring sections. The fact that there are online/browser-based, PDF, and app/tablet versions is very nice.Grammatical Errorsrating:5I did not find any grammatical errors. Any that are discovered are quickly corrected via the ongoing errata process.Cultural Relevancerating:4I did not find any culturally offensive parts of the text. Many early women astronomers are mentioned in this textbook; they are often omitted from other similar books. There could be a better representation of non-White astronomers and cultures in the book itself, but there are at least comprehensive resource guides available from the author that cover astronomy in non-Western cultures, Black astronomers, etc. CommentsI really like the "For Further Exploration" section at the end of each chapter. This is a nice bonus for interested students, as well as a convenient way for instructors to find additional resources that might be useful either in class or out of class for projects. I also really appreciate the extensive amount of supplementary material provided by the author and others: videos, slides, online labs, links, compilations of supplemental information, etc. It is a really well-supported book. There is an answer key for the chapter exercises. There is also a test bank, but I couldn't find answers to the test bank questions. Online homework is available through WebAssign.Reviewed by Michael Marks, Instructor in Astronomy, Bristol Community College on 6/30/21The book stated mission is to cover astronomy material encountered in both one-part and two-part introductory Astronomy courses. The text succeeds in this mission with 30 chapters of coverage beginning with fundamental ideas and background, then...read moreReviewed by Michael Marks, Instructor in Astronomy, Bristol Community College on 6/30/21Comprehensivenessrating:5see lessThe book stated mission is to cover astronomy material encountered in both one-part and two-part introductory Astronomy courses. The text succeeds in this mission with 30 chapters of coverage beginning with fundamental ideas and background, then moving on to relevant early chapter solar system oriented material up to the Sun, and then continuing to chapters covering the rest of the Universe topics. The breath and depth of coverage is impressive with many relevant clarifying images, comparative tables, references, glossaries of key terms, and historical vignettes about key contributors and events in the field. The information provided is fairly contemporary since the Web-based text can be updated regularly with new developments and discoveries as well as corrections.Content Accuracyrating:5Sufficient technical detail and well as historical context is provided throughout the text. The text has received significant review and usage to remove many obvious inaccuracies in the past and none were noted during this review.Relevance/Longevityrating:5The content is long-lived and is as contemporary as can be expected for any Web-based resource. Requests for software updates can appear while working within any given chapter. There was no notice about the update details. There is a system for submitting errata information by users and is done periodically to make corrections. Material relevant to a topic previously covered is linked in the current section of a chapter. If any material requires editing or changes, it can be easily done without disruption. Although a mission like Perseverance to Mars is fairly recent (2021), it has been in the planning stages for many years and there is no mention about it currently in the text using the Search tool. The cycle for updating the web-based text should be shorter than that of traditional hardcopy textbooks so new material can be included as appropriate. Clarityrating:5The book is well-written and easily understood. Terms used are appropriate to the context. Sufficient details are provided to make concepts easily learnable. Supplemental material and references allow the reader to explore most topics in more depth. Appropriate mathematical examples of many principles and concepts are well-developed and expressions and formulae are clearly presented. The mathematical material is mostly separated from the rest of the content to allow coverage as appropriate to the level of rigor undertaken. Many examples are provided in anecdotal format that makes material more easy to grasp.Consistencyrating:5The book is very consistent in its use of terminology. Key terms are referenced in chapter glossaries and used where appropriate in the same manner throughout the text. The format is the same in every chapter after the first few introductory chapters: Thinking Ahead, a preface to the chapter with chapter outline; Content Sections per outline; Key Terms; Summary; Further Explorations (articles, websites, videos); Collaborative Group Activities; Exercises consisting of Review Questions, Thought Questions, and Figuring for Yourself (tackling relevant math from the chapter).Modularityrating:4The book is very modular with many intra-chapter links to other chapter content in addition to outside references. This approach makes for considerable flexibility and modularity. However, it was not obvious how this approach would impact course topic planning as all of these linkages would need to be traced or tested to ensure students are not taken out of the main chapters of concentration as would be documented in a syllabus. Such an investigation was beyond the scope of this review.Organization/Structure/Flowrating:5The organization of the book is familiar to anyone who teaches introductory astronomy. However, it uses a refreshing approach with chapters more "chunked" into easily digestible sections like many of us may teach the material. For example, multiple chapters are devoted to terrestrial planets with one for Earth; another for the cratered worlds of the Moon and Mercury, paired for comparison; finally a discussion of the Earth-like planets of Venus and Mars, treated as a separate chapter. Consequently, students may find it easier to follow and assimilate topics since they are presented in a simplified format. making content easier to comprehend. Each section of each chapter is accompanied by its own learning objectives. There are about a dozen appendices covering supplemental material such as: a review of scientific notation with practical examples; units used in science; selected moons of planets; some useful constants for astronomy; the 20 brightest stars. There is also an exquisitely detailed index with links for every entry.Interfacerating:5The interface to this text makes it easy to use and is free of any artifacts that would impede its use. Resolution of images is sufficiently high to make these appear sharp with excellent color rendition. These are not clickable and do not open as separate, larger images. No distorted images were noted and navigation using the Table of Contents as well as inter-chapter links worked flawlessly. The Search feature helps you find words, topics of interest, or names, and easily returns you to your point of origin. Tables are effectively used to allow comparing and contrasting physical attributes and various characteristics. There is no integrated word-to-text reader feature to improve accessibility.Grammatical Errorsrating:5The text is written in clear, grammatically correct English. I would expect just about every word and punctuation has been reviewed thoroughly multiple times during the life time of this OER text.Cultural Relevancerating:5The text covers a wide range of global cultural contributors and references more than many traditional textbooks. Since the text excels in emphasizing historical developments, it naturally touches on the origins of these including many references to cultural backgrounds. There is fair and equitable coverage in this respect with references provided to additional details. It highlights the many challenges women encountered still reflected in current society. The story of the group of women employed as Harvard Computers, as they were known, is particularly ironic since they were paid a fraction of what their male colleagues would have commanded, yet none to their male counterparts are remembered today, but several of these women became famous for their contributions! CommentsReading and reviewing this book was an enlightening experience as my first exposure to OER course material. I was pleased to find the wide range of material covered. I found it extremely informative with many insights into the behind-the-scenes stories about much of material presented. There are numerous learning activities offered as well as thought-provoking questions for individuals and groups to answer at the end of each chapter. The imagery is exemplary and an important visual re-enforcement. Given the vast amount of content provided, I would conduct a pilot OER program first using this OER text as a supplement to my regular course text book. This approach will allow for gauging student reaction to this material and its suitability to their learning styles, especially with the digital technology divide prevalent in many regions and communities of the country. It will also allow exploring the supplemental material available such as the library of test questions. The printed editions of the text are all listed as first edition, 2016, so I would have to consider the customized print option mentioned in the Preface to provide my students with an up-to-date version. While many notable people are discussed in this text, I was surprised that contributors often highlighted in other astronomy educational sources were absent. These include Vera Rubin, Fritz Zwicky, Daniel Kirkwood, Chushiro Hayashi, Joseph-Louis Lagrange, and Edouard Roche. I am unclear why these well-known scientists were omitted.Reviewed by K. Phillip Nelson, Physics instructor, Virginia Tech on 5/19/21This book is a clear, conceptual treatise for a two-semester introductory astronomy course. It offers a comprehensive and accurate coverage of the entire scope and scale of astronomical topics from the core of the Earth to the edges of the...read moreReviewed by K. Phillip Nelson, Physics instructor, Virginia Tech on 5/19/21Comprehensivenessrating:5see lessThis book is a clear, conceptual treatise for a two-semester introductory astronomy course. It offers a comprehensive and accurate coverage of the entire scope and scale of astronomical topics from the core of the Earth to the edges of the visible Universe and from subatomic scales to vast spans between galaxies.Content Accuracyrating:5The information is accurate and can be updated as new science becomes available.Relevance/Longevityrating:5The fundamentals of astronomy have been established and are well known. The division of the chapters into specific, logical sections, however, makes it easy to amend information as new discoveries are made. Clarityrating:5The information is presented in a clear, concise manner.Consistencyrating:5The formatting and diction do not vary over the course of the book.Modularityrating:5The chapters are divided into easy to digest sections.Organization/Structure/Flowrating:5I like the delineation of the chapter into several easily-managed sections that contain relevant information for beginning astronomers.Interfacerating:5The online version of this text is easy to use. Hyperlinks to sections, chapters, and external content make it very easy to jump to the relevant section. The downloadable pdf is almost as easy to navigate. The table of contents in the pdf version, however, has a 'Glossary' section for each chapter that contains several sections - Review Questions from the Chapter, Thought Questions to prompt students to think deeper about the ideas, and Figure for Yourself numerical calculation problems. These sectinos are linked separately in the online version.Grammatical Errorsrating:5There are no grammatical or spelling errors in evidence.Cultural Relevancerating:3The text should not offend anyone, except perhaps those who still adhere to the belief that astrology and horoscopes can accurately predict behavior or future events. The book does focus heavily on observations by European cultures but ignores the contribution of other cultures to the subject. CommentsThis text works well for both those trying to meet a general education requirement and students who are heading into a minor or major in astronomy and astrophysics. There is just enough math to give a flavoring of the science behind the pretty pictures but not so much as to overwhelm the beginner who hasnt taken a math course in a few years. This book is not mathematically intense and does not contain a large number of equations, which could be considered a downside for those searching for a more rigorous, mathematical treatment. However, as many students in the sciences tend to ignore concepts over equations, this book emphasizes the concepts and applies them with a minimal number of quantitative questions. While this book doesnt stand out from the typical introductory astronomy text in its coverage, it does provide a nice set of links to external resources image and video libraries, simulations, and articles for beginning to intermediate readers. Nearly each chapter includes a section of exercises containing chapter review questions, questions for deeper thought, and numerical problems (Figuring for Yourself). The book is easy to read and provides a nice index of important terms at the end of each chapter. Astronomy is more than just pretty pictures but, there are enough of those included to break up the tedium of reading a text and to illustrate the ideas being presented. The hyperlinks make it easy to navigate to a specific section or chapter and directly to the external resources. The organization follows a standard, logical progression from history and methods, to solar system and planets, to stars and galaxies.Reviewed by Jens Noeckel, Associate Professor, University of Oregon on 12/3/20I have used this text for an introductory one-term course on galaxies and cosmology, and am planning to use it for another one-term intro course on the solar system. The text is sufficiently comprehensive to provide ample material for a full-year...read moreReviewed by Jens Noeckel, Associate Professor, University of Oregon on 12/3/20Comprehensivenessrating:4see lessI have used this text for an introductory one-term course on galaxies and cosmology, and am planning to use it for another one-term intro course on the solar system. The text is sufficiently comprehensive to provide ample material for a full-year introductory course. The students will come away with a complete overview of the field, and an appreciation for both the history and the most important recent discoveries in astronomy. Every instructor is different, so it's not surprising that I found some missing topics of lesser importance, that I personally consider valuable. For example, the principles behind the sundial could have been used to explain the celestial sphere, but the text only mentions it in passing. I also like to spend more time discussing the tides, although I think the short section in the text does a good job given how short it is. In the chapter on telescopes, I would have liked a mention polar tracking without which no fancy telescope design would work at all. This will also remind readers how important the rotation of the Earth is in observational astronomy. In cosmology, there is obviously a huge amount of material that exists in the popular literature (Hawking, Thorne, and others), and the textbook offers a sparse selection by comparison. However, it's an adequate balance overall.Content Accuracyrating:4There are some small inaccuracies that could lead to confusion. In section 3.3, Newtons Law of Universal Gravitation as stated applies to spherically symmetric objects or points, but not to mass distributions of arbitrary shape - except in the far field. To avoid later confusion, I would have explained that the gravitational force of an arbitrary object is the sum of the attractions from all its parts, keeping track of the directions. In the same section, Newton's modification of Kepler's Third Law is discussed, and a formula is stated relating the period to a quantity "a". Here there is an omission that will make it impossible for the student to understand what's really going on. In the case of arbitrary masses to which the formula is supposed to apply, the definition of "a" in terms of the relative coordinate is essential because neither object can be assumed to be fixed. Without this information, there is no way for the student to actually make quantitative use of this formula, except in the special case covered in the example: that of an immovable center. But for that special case, it would not have been necessary to introduce two new variables M1 and M2 for the masses of both objects. In fact, the example immediately sets M1=1. To make the description more accurate, I'd replace M1=1 from the start so that "a" can retain its earlier definition. There is an application of the more general case in the context of binary stars later in the text, but no formulas are referenced at that point. In section 3.5, the text states "the landed payload must include enough propulsive power...". What it should say instead is "the landed payload must include enough energy" - you can't store power, only energy! In chapter 5, it should be pointed out that not all waves are repeating phenomena (as the text states). Whats discussed in the text are harmonic waves. Pulses are also waves, but need not repeat.Relevance/Longevityrating:5The book is very up-to-date, as far as I can tell. This is actually one of the main advantages I see compared to other texts. Perhaps the book shows its age just a tiny bit in one statement at the end of chapter 3: Calculating orbits in N body problems of moderate size no longer requires large computers. Even tablets can do it. The book says that "calculating the gravitational interaction of more than two objects is complicated and requires large computers". On large computers, people nowadays solve N-body problems for very large N. Clarityrating:5The authors clearly worked hard to avoid unnecessary jargon. At some point they even mention how they debated omitting the "magnitude" classification of stars because it's so cryptic. Then they do include that concept after all, but fortunately don't use it much after that. The text has many nice figures that help immensely because astronomy is a very visual subject. One place where I thought an additional figure was needed is chapter 4.1, explaining the coordinates on the celestial sphere. In figure 5.8, there is a lot of information that may be difficult for the student to absorb. For that reason, I found the labels somewhat wanting. First of all the label "K" for Kelvin isn't defined until two pages later. Second, the "Intensity" axis should be called spectral intensity because its intensity per unit wavelength. Intensity is also not just power, but power per unit area. Instead of arbitrary units, one could write actual units so the student can connect them to the definitions in the text. Most readers will be confused by arb. units because it involves the additional step of introducing a reference irradiance (which experts take for granted). Since astronomy is a very visual science, its useful that a curated list of video and image links is provided at the end of each chapter.Consistencyrating:4In the context of Kepler's Laws, conic Sections are introduced in general in fig. 3.3, but the significance of parabola and hyperbola is not mentioned. This should be done at least by the time we reach Newtons theory. One of the biggest issues I had was that the concept of energy is used quite a lot without ever being properly explained or defined. Energy is used a lot especially in the chapter on radiation and spectra. Without a prior definition, students may end up viewing energy as synonymous with photon number, but the connection to other forms of energy remains vague. Given that energy is mentioned in the context of rocket launches much earlier, it would have made sense to properly define kinetic energy there. Thats really the gold standard for energy, and all other forms can be related to it, thereby providing a more unified view. Kinetic energy is used without definition in 15.2. To explain the gravitational constant G, one should also mention Cavendishs torsion balance experiment. Otherwise theres a logical gap in figuring out the acceleration g on Earth, because you first have to know the mass of the Earth itself. And obviously Newton didn't know that quantity when he first proved the inverse-square law (Newton wasn't the first to postulate this famous law). In the discussion of "wave-like characteristics of light," interference should be mentioned, instead of being left until the next chapter (6). Interference is how the wave nature of light was experimentally demonstrated.Modularityrating:5The text can't be completely modular because the topics necessarily build on each other to a certain extent. But that's not a shortcoming in a science text. It's to be desired, in order to tell a coherent story. I've used the text in a self-contained way to teach mainly galaxies and cosmology. With the addition of chapters 1-3 and 5, 6, I felt the text covered everything I needed. These early chapters are probably always good to include in any astronomy introduction that aims to be self-contained. The structure of each chapter adheres to a consistent pattern, and the lengths of the sections are reasonably well-balanced. This makes it quite convenient to assign readings based on sections because you can be confident that the number of pages will be approximately the same for each section.Organization/Structure/Flowrating:4The order in which the topics are presented follows a rather standard list. There are only two minor issues I noticed: In chapter 8, the atmosphere (section 8.3) may be better to discuss first because it allows us to define pressure. Pressure is used in section 8.1 (on the solid Earth) without explanation, so that section should appear after talking about the atmosphere. The concept of "center of mass" is discussed in chapter 18, but it really belongs in chapter 3, as it is crucial in Newton's treatment of Kepler's laws.Interfacerating:5The text is available as PDF, as an app, and online as fully linked HTML. The latter is very convenient because it allows the instructor to post links to individual sections directly, without looking up page numbers. The electronic formats are free of technical issues, and the searchability they provide is of great practical use. Images are of high quality, and the typesetting is professional-looking.Grammatical Errorsrating:5There are no grammatical issues that I was able to identify.Cultural Relevancerating:5The text contains several historical excursions in which the role of women in astronomy is explicitly pointed out. There are also several references to the achievements of Chinese astronomers, in addition to the traditional references to the ancient Greeks. This is a level of diversity that seems appropriate in the context of a text whose main objective is to tell a coherent story of the universe, not necessarily paint a complete picture of all the relevant historical developments. CommentsI'm definitely going to use this text again.Reviewed by Andrea Goering, Instructor, Lane Community College on 6/14/20This textbook is appropriately comprehensive for an introductory astronomy class. Content is covered at a breadth typical of other intro astronomy textbooks. The index is high-quality (with links back to specific sections). Instead of an overall...read moreReviewed by Andrea Goering, Instructor, Lane Community College on 6/14/20Comprehensivenessrating:5see lessThis textbook is appropriately comprehensive for an introductory astronomy class. Content is covered at a breadth typical of other intro astronomy textbooks. The index is high-quality (with links back to specific sections). Instead of an overall glossary, key terms are listed within each chapter. Some content is covered in less depth or detail, and this has the benefit of keeping the focus on the big picture. Some topics (cosmic rays, the difference between population I and II stars, gamma ray bursts, the anthropic principle) are not covered in some texts yet are topics that my own students have broached in term papers and discussions - so I am glad to see them here.Content Accuracyrating:5Errata are openly documented and are on a transparent timetable, with details given for errata not corrected. These are even interesting to read through, as some of them are pedagogical in nature and provide instructors designing their courses with food for thought.Relevance/Longevityrating:5The errata mechanism ensures that factual errors arising from new and changing science can be easily updated, on a regular timetable, guaranteeing that the textbook can remain up-to-date so long as its readers are diligent. Clarityrating:5The writing is clear and concise, and explains technical terms using visually evocative language. Abstract ideas are grounded with concrete examples. The clarity could be improved by including additional illustrations.Consistencyrating:5Often when referencing key terminology, the book references and links to the original discussion of the term. Each chapter follows a consistent framework that lends itself to usability. The Thinking Ahead section for each chapter prompts students to consider key questions and connect to prior knowledge. The Learning Outcomes are clearly enumerated at the start of each section. The Key Terms and Summary at the end of each chapter are invaluable for study purposes, while the Further Exploration resources would be helpful for external reading assignments related to each chapter. Connections to real life situations are drawn in the Links to Learning, Feature Boxes, and Collaborative Group Activities at the end of each chapter.Modularityrating:5The modularity is excellent. Not only can this course be broken into various semester-long units, but the authors provide sample syllabi for doing so. The introductory chapter orients the reader to all topics coming up in the book (including an overview of the universe and of matter). This overview constitutes a helpful introduction for each class in a sequence if they are taken separately or out of order (as is allowed in my college). Appendices on scientific notation and SI units are introduced early, including practice examples for students who may need them.Organization/Structure/Flowrating:5In general, the book follows the typical sequence: solar system, then stars, and finally galaxies / cosmology. Big-picture ideas in astronomy are highlighted by the organizational approach of the chapters. For instance, rather than a chapter for each planet (a common choice), this text groups them in a way consistent with the application of comparative planetology. In addition, certain chapters that are often covered separately and in detail are combined and simplified in this book (for instance: radiation and spectroscopy, early universe and cosmology). This is an appropriate approach for introductory students and avoids cognitive overload.Interfacerating:4Navigation is simple. I appreciate the easy-to-use highlighting and notes feature. Areas for improvement include:- Labels for highlight colors (so students can establish and keep track of an individualized scheme).- Links back to the relevant text section beginning from the readers highlights and notes (so they can jump back to the highlight in context). - A back button of some sort; e.g. to easily help students who click on a link to a different section to return to where they started from (rather than the added cognitive load of finding the proper section from the Table of Contents again).- A bookmark feature.- A list of the titles of all focus boxes.Grammatical Errorsrating:5I didnt notice any obvious grammatical errors.Cultural Relevancerating:5The Thinking Ahead section in Chapter 2 warms students up to the idea of how to convince a Flat Earther that Earth is round. The text promises to equip students with observational data and principled logic to analyze such claims. This is then applied to astrology later in the chapter. This approach is consistent with respect for students from diverse religious backgrounds, as the emphasis is on the veracity of specific claims. The book acknowledges the focus in Western civilization on ideas from Greek and Roman cultures, and includes a short section about ancient astronomy around the world. An instructor could expand on this idea in an assignment by using the Astronomy of Many Cultures resource in the Resource Hub. In section 4.5, the book connects the 7-day week of the Western world to the 7 wanderers visible to the naked eye and prompts cultural reflection by asking whether we may have Eight Days a Week if one more planet were visible. CommentsI appreciate the big-picture and conceptual focus focus of this book, but I think I'd need to take it for a spin in my classroom before I'd know for sure if I'd miss the loss in detail and depth in this book compared to my current text. The Powerpoint slides, test bank, and end-of-chapter questions provide a good starting point for building curriculum around this book. The thing I would miss most if I were to adopt this book would be online tutorial-type homework, especially visual tutorials and interactive questions. However, this can also be seen as an opportunity for the open pedagogy community to develop and share resources that meet our individual needs! The OpenStax Astronomy Group already curates a number of helpful materials with up-to-date contributions. I look forward to watching it grow and perhaps contributing! Reviewed by Samanthi Wickramarachchi, Instructor, Virginia Commonwealth University on 3/14/20Overall the textbook is at a very good level for my Elementary Astronomy class, which is a general education requirement course series. Brief Astronomy videos on the student resources are short and will be helpful to link with the lectures to make...read moreReviewed by Samanthi Wickramarachchi, Instructor, Virginia Commonwealth University on 3/14/20Comprehensivenessrating:5see lessOverall the textbook is at a very good level for my Elementary Astronomy class, which is a general education requirement course series. Brief Astronomy videos on the student resources are short and will be helpful to link with the lectures to make it interactive and informative. I am going to adapt to this textbook in my future semesters.Content Accuracyrating:5I didn't notice any inaccurate statements. However, I have not used the textbook in full potential.Relevance/Longevityrating:4It is not easy to keep Astronomy textbooks up to date, with this textbook I can easily make comments on the text at the time I assigned it to studnts, which will allow me to make edits on the textbook to visible to studnts. Clarityrating:4The textbook contains fewer details, most suitable for an introductory astronomy course.Consistencyrating:5The textbook is reasonable for consistency in using terms. However, I noticed that there is no consideration of the vector quality of the terms. For example, when the author introduces the equation for Universational gravitational law, he should have used the magnitude of the force. In many textbooks, there is no consideration given to vector quality of terms, and then studnts will get confused when the direction introduces.Modularityrating:5Most textbooks come with long unnecessary text which distracts the readers. This textbook does not contain lengthy explanations, which will keep the readers focused. This quality will make it easy to assign reading assignments weekly.Organization/Structure/Flowrating:4The textbook uses clear text to explain the topics, where I can quickly adapt to the language. I would prefer a different text font and a variety of font to develop the overall textbooks' appearance.Interfacerating:4On the online version, it is straightforward to navigate from topic to topic. The pictures in many places are in detail, and also those are linked nicely with the text and embedded aligned with the content.Grammatical Errorsrating:5The language is easy to follow, and there are no grammar errors detected so far. Once I adapted to the textbook, I will able to comment on this properly.Cultural Relevancerating:5The textbook provides online links to the sky charts and night sky events, which can adapt to the region of the user. Also, the author is very clear about explaining the sky observations in chapter 2. CommentsTo improve the overall quality, I would recommend adding a textbook cover, change the text font, and add more information about space probes that currently in operation.Reviewed by Jennifer Carter, Assistant Professor, Susquehanna University on 2/14/20This astronomy textbook includes content on all of the broad topics one could wish to teach in a general education astronomy course. This allows instructors to design multiple courses using a single textbook, for example one course could focus on...read moreReviewed by Jennifer Carter, Assistant Professor, Susquehanna University on 2/14/20Comprehensivenessrating:5see lessThis astronomy textbook includes content on all of the broad topics one could wish to teach in a general education astronomy course. This allows instructors to design multiple courses using a single textbook, for example one course could focus on solar system science whereas another could focus on stars. I would, however, like to see a more in depth take on the state of exoplanet science given the gains made with Kepler data and the future gains to be had from TESS data.Content Accuracyrating:5This textbook is updated frequently enough such that content stays error-free. In addition, it uses appropriate language to accurately communicate scientific and mathematical ideas to a general student audience.Relevance/Longevityrating:5The textbook is updated frequently enough such that the newest discoveries may be included on the online version of the text. The PDF and print versions also stay relatively up to date. Most of the text focuses on the aspects of astronomy that are well-established and unlikely to change appreciably in the near future, but it does take the time to point out those areas that are still in development and to describe said developments. Clarityrating:4The text uses clear language and makes clever analogies to place difficult concepts into context for students with many figures included to enhance understanding. Some of the figures could use further explanations or redesigns. For example, students have commented that they found the figures related to Keplers laws to be more difficult to grasp. In addition, many of my students struggle with other aspects of Chapter 3, e.g. Newtons laws and conservation of angular momentum. Finally, my students do cite the worked examples as a good resource for learning how to use equations presented in the text.Consistencyrating:5The text is always careful to use the same terminology across chapters and takes the time to reference points at which terms have been used previously or will be used again in a later chapter. In addition, the text is consistent in its use of variables for equations. For example, F is consistently used for force (or flux) in equations.Modularityrating:5The text can be broken up in multiple ways to allow for a variety of astronomy courses to be taught with a single resource. It is also always careful to briefly describe previous concepts, so students are not forced to read chapters that an instructor has skipped in order to understand the current content, but a reference to previous material is included for the curious student. In addition, each of the chapters and subsections are named appropriately so that the comprehensive indexing is easy to follow. Finally, OpenStax includes instruction materials to help instructors design a variety of astronomy courses with this textbook. For example, I have used this textbook to teach both a solar system science course and a course focused on stars, and I plan to use it again to design a course focused on galaxies and cosmology.Organization/Structure/Flowrating:5Each chapter follows naturally from the previous chapter, but not such that one must read all of the previous chapters to understand the current chapter. In addition, each section includes a brief list of reading goals to help guide students in their learning and instructors in course design.Interfacerating:4The text includes ample outside resources that are easy to interface with, but a few of the source hyperlinks are beginning to lead to webpages that no longer exist or they lead to Flash simulations that will be obsolete in December 2020. Occasionally, I find page breaks to be jarring, for example if a large figure is present there might be a lot of white space between one page and the next. My students have commented that the text is easy to follow and that they like the sectioning, stating that the text was broken up well into smaller components.Grammatical Errorsrating:5I have yet to find any grammatical errors in the text.Cultural Relevancerating:4The text is not offensive, even when it is presenting views with which some astronomy students may disagree. For example, a few of my students begin the semester as strong believers in astrology and may not agree with the presentation of the topic within this textbook. In text examples and discussion questions include names from multiple groups and some even focus on the potential cultural significance of a topic. A few of my students have asked for information about astronomy within non-Western cultures, but the text takes the time to include contributions from astronomers from minority groups whenever possible. CommentsThis text is a fantastic resource and I think myself fortunate to have been introduced to it early in my astronomy instructional career.Reviewed by Nilakshi Veerabathina, Associate Prof. of Instructions, University of Texas at Arlington on 1/30/20The book Astronomy is very comprehensive. It has 30 chapters and almost 1200 pages. This voluminous book covers all the areas of introductory Astronomy in detail and it is usually taught in most universities and colleges over two semesters. The...read moreReviewed by Nilakshi Veerabathina, Associate Prof. of Instructions, University of Texas at Arlington on 1/30/20Comprehensivenessrating:5see lessThe book Astronomy is very comprehensive. It has 30 chapters and almost 1200 pages. This voluminous book covers all the areas of introductory Astronomy in detail and it is usually taught in most universities and colleges over two semesters. The first fourteen chapters cover information about general Astronomy, Night Sky, and Solar System and rest of the chapters cover stars, galaxies and the Universe. The last chapter is about life in the Universe and astrobiology. The book not only covers information about the larger scale of universe, but also dives deep in to the smaller scale. At the end of the book there is a comprehensive list of important websites and apps with active links. Content Accuracyrating:5The content presented in the book is accurate and error-free. The authors seemed to be unbiased for the most part, for example, authors have covered both sides in the discussion about Astronomy and Astrology and left it to the readers to decide for themselves.Relevance/Longevityrating:4This book was written in 2016 and I am doing this review in the beginning of 2020. The book can still be easily used in the classroom as the content in the book is mostly up-to-date. For example, it has information about Pluto from New Horizons exploration, the discovery of gravitational waves from LIGO, and Comet C-G from the Rosetta Mission. There is a table in the appendices that lists total solar and lunar eclipses until year 2029. Some information needs to be updated though such as information about the 2017 eclipse that has already happened and the largest radio telescope (it is not Arecibo telescope that is the largest anymore). In addition, the new discoveries are being made every year with the advent of more powerful instruments and faster computers. I am pretty sure the book will need a revision in a couple of years to make it more relevant then. Clarityrating:4For the most part the book is written clearly. There are analogies, diagrams, images, tables, and charts to clearly explain the concepts. The length of each article is about the right size, not too long or too short. Most of the Tables in the book are simple usually with 2 to 3 columns that are easy to understand for the students. There are some places in the book that could be confusing for students, but those are only minor issues. For example, Chapter 9 is titled as Cratered Worlds and it covers information mainly about Mercury and Moon. It gives the impression that Mercury and Moon are the only objects in our Solar System that have craters.Consistencyrating:5The book has consistent nomenclature and framework throughout. Every chapter starts with learning outcomes, and ends with summary, key terms, and list of articles for further reading. Modularityrating:5Chapters are short with headings and subheadings for topics and appear to be standing alone and easy to customize. For example, the information about the giant planets is covered in

resolution. It appears to be professionally typeset.Grammatical Errorsrating:4No grammatical errors found.Cultural Relevancerating:4The text strives to discuss the role of people of different backgrounds in astronomy. There are quite a few pictures of historical astronomers (e.g. Brahe, Kepler) but fewer of more modern astronomers. It would be nice to have modern pictures representing a variety of races, genders, and ethnicities, e.g. a picture of Jocelyn Bell.Reviewed by Paul Morgan, Associate Professor, Umpqua Community College on 6/20/17The textbook is very comprehensive. From debunking Astrology , to planets and moon in the Solar System, to Stars and galaxies "Astronomy" provides students with excellent depth on many aspects of astronomy. Each chapter has an extensive...read moreReviewed by Paul Morgan, Associate Professor, Umpqua Community College on 6/20/17Comprehensivenessrating:5see lessThe textbook is very comprehensive. From debunking Astrology , to planets and moon in the Solar System, to Stars and galaxies "Astronomy" provides students with excellent depth on many aspects of astronomy. Each chapter has an extensive glossary that helps students understand astronomy jargon and concepts.Content Accuracyrating:4My cross checking of the book disclosed only one minor error. On page 370, the text reads: " about 150K or about 125 degrees C" It should read: about 150K or about -125C. I did not find any other errors in my cross checking.Relevance/Longevityrating:5This text is very up to date with recent finding from New Horizons, Rosetta, Kepler and other spacecraft missions as well as the recent development with observatories and instruments. The many excellent examples and every day language of complex concepts from Newton's Laws to Cosmology will stand the test of time. Clarityrating:5Clarity is a strong point of this book. It is obvious the authors took great care to find ways to clarify and simply astronomical concepts. Excellent illustrations and many photographs enhanced the written text to produce a better understanding for students.Consistencyrating:5Consistency is not an issue with this textbook. The authors were careful to explain terms and concepts clearly and then refer to them consistently throughout the book. References were appropriately made to refer students either ahead or behind in the text to previous or future terms or concepts.Modularityrating:5Once again, modularity is carefully constructed. Each chapter is well crafted into subsections that are well woven together to guide students through a subject area in an appropriate pathway.Organization/Structure/Flowrating:5As with modularity, structure is well thought-out and crafted. Topics are introduced in appropriate fashion to enhance student learning.Interfacerating:5Students should not have any issues or problems navigating this textbook. It builds in a organized manner from one topic to the next.Grammatical Errorsrating:5I particularly enjoyed the prose of the textbook. It was easy for beginning astronomy students to read and understand.Cultural Relevancerating:5Special sections throughout the text highlighted the rich cultural diversity and struggles of women and minorities in the history of astronomy. CommentsA wonderful up to date text for astronomy students with striking images and illustrations. I especially liked the end of chapter questions for individuals and group for collaborative efforts. Well done!Reviewed by Cathy Bunge, Adjunct Faculty, Northern Virginia Community College on 6/20/17The text covers all areas of Astronomy and provides an excellent discussion of science in general. In science (after formal education and training), everyone is encouraged to improve upon experiments and to challenge any and all...read moreReviewed by Cathy Bunge, Adjunct Faculty, Northern Virginia Community College on 6/20/17Comprehensivenessrating:4see lessThe text covers all areas of Astronomy and provides an excellent discussion of science in general. In science (after formal education and training), everyone is encouraged to improve upon experiments and to challenge any and all hypotheses. The index is effective with direct links to pages where the terms or used. There is no glossary.Content Accuracyrating:4The information in the text is mostly accurate. However, on page 970 the authors describe Pluto as the outermost (dwarf) planet in our solar system. There are dwarf planets farther out than Pluto. Also, the text says we see no obvious cloud cover at all for Uranus. That was true when Voyager flew by but later pictures taken with HST have shown some cloud cover.Relevance/Longevityrating:5The content is up-to-date and written in such a way that necessary updates will be easy to implement. Clarityrating:5The textbook is written in a manner that is enjoyable to read and explains the concepts well.Consistencyrating:5I found no inconsistencies.Modularityrating:5The text book is well modulated.Organization/Structure/Flowrating:4The text is well structured. In particular, I like how the material about the rings and moons of the Jovian planets is in a separate chapter. However, I would put celestial distances before the census of stars, since before we can determine the luminosities of stars to take a star census we need to know the distances.Interfacerating:5The text had no interface issues.Grammatical Errorsrating:4I only found two grammatical errors. Chapter 1: , An undergraduate science major today knows more about science and did math than Sir Isaac Newton, one of the most renowned scientists who ever lived. The did doesnt belong in this sentence. Chapter 11: Most the atmosphere above this level should be Most of the atmosphere above this level.Cultural Relevancerating:5The text is not culturally insensitive. CommentsThe text incorporates useful links to animations, online image libraries, and videos. There are effective figures throughout the book. The authors include helpful analogies, although I found the stillborn Calisto analogy disturbing and insensitive. This is a textbook I would consider using in my classroom.Reviewed by Rebecca Ericson, Assistant Professor, George Mason University on 6/20/17The book is comprehensive in topic with depth of coverage suitable for general education students in either a one or two semester course. The text includes chapter outlines and overviews, learning objectives for each section within the chapter,...read moreReviewed by Rebecca Ericson, Assistant Professor, George Mason University on 6/20/17Comprehensivenessrating:5see lessThe book is comprehensive in topic with depth of coverage suitable for general education students in either a one or two semester course. The text includes chapter outlines and overviews, learning objectives for each section within the chapter, and a glossary of key terms and summary following each chapter. In addition there is a list of articles, websites and videos for each of the chapters, and a set of collaborative group exercises and various kinds of review questions to help students understand the material. There is no glossary at the end of the text, but since the book is designed to be used in modular form it is probably more useful to have a glossary associated with the chapters where the terms appear. The depth of the coverage is adequate for the general education population, but probably not sufficient for students majoring in astronomy or physics. It includes math where appropriate, but it is not a major focus and not necessary to comprehension of the basic concepts in the book. The coverage of basic physics is less than in some of the other introductory textbooks, but again seems to be adequate for this level. One thing I like is that the authors introduce physics concepts in early chapters, then refer back to them when needed and extend the concepts in chapters where understanding such things as how spectra form and the role of density are crucial. I found that the index is minimal and lacks important terms that would help the student navigate the text as a whole. It may be because the book is new, it was published in final form near the end of Fall 2016. The websites and links cited throughout each chapter are very helpful when students read it in pdf on-line and can click directly on the links to get simulations, additional images and relevant web pages. My concern here would be that if the links are not reviewed frequently students will be frustrated with "dead" links and references. However, the linked resources are excellent for students who see themselves as "visual" learners, and are more easily engaged with videos and interesting pictures.Content Accuracyrating:5My reading so far hasn't revealed any inaccuracies beyond some minor typos that one would expect with any newly published text. In general the authors seem to be good at presenting current understanding of astronomical processes, as well as mentioning areas where knowledge is incomplete. Students often wonder why they should study science when what was "correct" today, is discarded tomorrow. The authors deal in a few sentences with the question of Pluto's status as a planet and make a case for it being classified as a dwarf planet. It might have been useful to use this topic as a route into talking about classification systems and their role in scientific understanding and discovery. While this question is not addressed in depth, links to other materials, including a debate about planetary designation, are useful to instructors who want to pursue the idea of definition and classification.Relevance/Longevityrating:4The text is as up-to-date as possible in a field as volatile as astronomy. The text itself includes information about the New Horizons mission to Pluto in 2016, the first measurement by LIDO of gravitational waves. The authors have promised new editions and there is currently an errata list on the textbook OpenStax page. If, as suggested, the book is regularly revised, and the links (which are highly like to move or become outdated) are checked, the book should stay at least as current as any textbook in print. Clarityrating:5The book is written at a clear and accessible level for non-science majors. Frequent analogies help those new to astronomy to build useful mental images. Fro example, when discussing the age of the universe, the authors make an analogy where students leave a party and drive home at a constant speed, then by working back can figure out when they left the party. Technical terms are generally explained in the context of the chapters, which means that, for the most part, chapters, and even sections can stand alone.Consistencyrating:5The book has a standard format for each chapter which repeats consistently. This makes it easy to know where to start if you want to find something like the definitions or and overview of section learning goals. The technical terminology is at the same level throughout which is very helpful since the number of new words introduced in a typical astronomy course can be daunting. It appears that most terms are defined as they arise, and defined in slightly different terms in new contexts in other chapters.Modularityrating:5I used the first half of the text, the solar system chapters, in a course in fall 2016. The text was easy to organize around the topics in the order I wanted to cover them since the table of contents links directly to the chapters. I wanted more background on solar system formation and wa able to pull in part of Chapter 21 which deals with the birth of stars and the discovery of planets outside the solar system, that, combined with a section of Origin of the solar system in Chapter 7 and yet another section on the topic in chapter 14 gave enough reading for the students to begin thinking about how a solar system might form and how we would know. In some ways it might have been better to have just one chapter on this topic. On the other hand, it is useful to have sections on the topic in various chapters so that each can stand alone. I like the feeling of freedom I have with this text for that reason. One downside is that the text is Pdf making it hard to rearrange in a sequence that might fit my course objects better for some topics. After using the book I may at some point request a "custom" copy, but students seemed to do well with it in the form it has now. The text is easy to use in "bite-sized" chunks, but also has enough from from section to section that it doesn't feel like a random selection of factoids. The themes of science process, how we know, and short biographical portraits of influential people in the field all serve to connect the pieces together and at the same time allow the book to feel unified even when skipping chapters or sections.Organization/Structure/Flowrating:5For the most part topics are presented in the same order as in any one of a dozen other standard astronomy textbooks. There is perhaps less emphasis on basic classical physics in stand-alone chapters than in most other tests, but much of what is needed in terms of the basics is also woven in where it is relevant. Because I teach a two semester course those chapters must be repeated in each semester which is tedious for students who take the courses in sequence. I like having two chapters on light, one concentrating on spectra and what light is, the other on spectra and how it is used in stellar astronomy. Similarly, the topic of other solar systems comes up twice, once in the first half when discussing solar systems and then again in the last chapter of the text in the context of life in the universe. I regularly rearrange the order in which students are introduced to material, mostly because I prefer not to spend a large part of the semester preparing students to understand astronomy instead of having them get a good introduction to what they are interested in first, then going back to ask the how and why kinds of questions. This book works well for that when it is in digital form.Interfacerating:5The pdf version seems to work very well. I use an LMS extensively and posting the links to the chapters for each week's work seems to be useful. The downside is the problem I see with any e-text, that flipping through pages to look for something to review or study further is not easy. But overall the text is easy to read in pdf form and has the advantage of being able to increase the size of images and graphs to make them more readable. In print form I see some oddities. There are occasional large expanses of white space for no apparent reason, most likely because an illustration comes before or after. Now and there there are "orphan" ends or beginning of sentences that didn't quite fit on the page before or after. But images and graphs and diagrams are all large enough to read easily and are more or less in line with the text that references them.Grammatical Errorsrating:5The few small errors I found were mostly typos it appears and the errata list on the book's web pages clarifies the ones that have turned up that are more significant.Cultural Relevancerating:3While the text is not overtly insensitive or offensive, I did find that the majority of faces in the images were European and American males. This is probably to be expected historically, and while there were several nice bios of women, Margaret Gelle and Andrea Glez for example, the women who are documented in historical astronomy, Annie Jump Cannon, Cecilie Payne Gaposchkin, and Caroline Herschel are present in small pictures only, in spite of the fact that there are interesting and relevant stories about each. William and Margaret Huggins appear in a small image as well and I would be interested in knowing more about both of them. Subrahmanya Chandresekhar has a nice picture and story, and John Goodrichke- who was deaf are representatives of those who come from a different culture and overcame physical difficulties to work in the field, but I do think the authors could have done better with this aspect. There are some nice bits of poetry and some questions that relate astronomy to various works of literature and art, but I think even more of that would benefit a readership that often questions how astronomy can possibly be relevant. CommentsI have rated this book at the top in most categories, partly because there really is nothing else quite like it and it sets a high standard. It is certainly time for texts that can be used in a flexible modular way at low, or no cost. I imagine the text will continue to evolve and improve as long as there are resources to support this kind of effort. One difficulty personally is that we used a different text for our online course and now will need to redo the narrated powerpoints in order to switch to this text. The powerpoints these authors supplied are a good start. I am also looking for a homework resource such as Mastering Astronomy that can be paired with this course at low cost. Re-designing the courses to use Open Educational Resources is a work in progress. I am extremely happy to have found a textbook as useful as this one to begin with.Reviewed by Stephanie Welch, Instructor, Southeastern Louisiana University on 6/20/17I found this textbook to be a very comprehensive coverage of Astronomy, but possibly structured a little strangely.read moreReviewed by Stephanie Welch, Instructor, Southeastern Louisiana University on 6/20/17Comprehensivenessrating:4see lessI found this textbook to be a very comprehensive coverage of Astronomy, but possibly structured a little strangely.Content Accuracyrating:5I found the accuracy of the textbook to be spot on.Relevance/Longevityrating:5I think this textbook will be as relevant in 10 years as any textbook could possibly be, and the ideal thing about the open source format is that a paper copy of this text will not need to be updated in the future. Clarityrating:3I found the clarity of this text to be reasonable, and the only area lacking in clarity was the structure of the text and not the content.Consistencyrating:4The consistency was very good.Modularityrating:5The textbook was entirely modular, making it very adaptable to be approached over the course of a semester.Organization/Structure/Flowrating:2The organization of the textbook seemed to be the most lacking part of it. I found the organization to be very strange and non-linear.Interfacerating:5The quality of the images and user interface didn't include any problems for me.Grammatical Errorsrating:5I did not find any grammatical errors on my reading of the text.Cultural Relevancerating:5I found no instances of offensive content in the book. CommentsMy overall impression of the book was very good. The images were very nice (and I think that would be a beneficial area to include as a review criteria) and the content was accurate and consise. My only concern is in the chapter structuring, in particular to material about the history of astronomy. I think it would better serve the students if this was organized chronologically instead of being split the way it is.Reviewed by Chelsea Tiffany, Physics Instructor, Saint Paul College on 4/11/17Astronomy by OpenStax covers the basic topics for an introductory astronomy class. This includes night sky, planets, sun, stars (life and death), galaxies and life in the universe. The only topic from my previous book that was not covered as...read moreReviewed by Chelsea Tiffany, Physics Instructor, Saint Paul College on 4/11/17Comprehensivenessrating:5see lessAstronomy by OpenStax covers the basic topics for an introductory astronomy class. This includes night sky, planets, sun, stars (life and death), galaxies and life in the universe. The only topic from my previous book that was not covered as much in this one was the possible ends of the universe (Heat Death, etc.). As this was always a section I went through quickly anyway, I don't really mind its loss. All other topics were covered in as much or more detail than other introductory Astronomy textbooks I have used over the years.Content Accuracyrating:5Considering that most of the information comes from NASA or ESA (and the space agencies of other countries as well) it is accurate, comprehensive and up-to-date. The breadth of the sources helps make the information unbiased and representative of the current ideas and theories while acknowledging that there are competing ideas (and that scientific experiments will help determine which theory most correctly matches the universe as we see it).Relevance/Longevityrating:5The content of the book is very up-to-date. There are updated sections that include information from recent missions and/or pictures, links and videos. I like this as it allows me to talk about these topics (like New Horizons) when they are in the news or students hear about them and link right to these sections. It also means helps to highlight the importance of certain missions by giving them their own sections and showing students how much information was learned from them. This will also make it easy to update with new information as it comes in. Clarityrating:5New terms are highlighted and defined in the text throughout to help student understanding. The language is clear and not complicated. My students have so far been able to read and understand the language with no major problems.Consistencyrating:5The book is consistent throughout.Modularityrating:5Each chapter is divided into separate sections. These sections are generally pretty compact and easy to read, which is helpful in convincing students to read. Each section is further divided into topics by large, bolded headers. This helps make the different topics and sections clear to the students. The subdivision is also helpful in assigning reading at certain times. I will sometimes leave out the more detailed sections (for example 11.7 might be skipped) and then either talk about them in class or link to them if students post a question related to that. This means that the students who want more information have an easy way to find it, but the students who are just trying to understand what is happening are able to focus on the main topics/points as needed. Most of the sections and chapters are fairly independent (some of the planet ones are a little more connected). When new chapters reference material that was discussed in earlier chapters, there is usually a very brief reminder about the idea and also a link back to the previous section so the students can go back and reread if they don't remember.Organization/Structure/Flowrating:5The order and flow of the content was fine. OpenStax also has sample schedules available for teachers that show how you would order the content depending on what you want to emphasize in your course. I typically do the more traditional Sky, Planets, Sun, Stars, Galaxies type of flow (which is the general order of the book). But it is set up so that you can do just a planet version, a galaxy version, etc. and the sections and chapters are separate enough that it will still work.Interfacerating:4I use the online interface primarily. I find the content side bar option is very helpful and makes for easy navigation. I use this to scroll through and check the sections I want. I also use the search function to find the sections that talk about what I am interested in (or to find something that I read before and can't find again). The only reason problem I find is that sometimes the section or in chapter links are broken. I report them when I find them (and the reporting of error is very easy) and I know that it's hard to keep all the links in a book like this correct. It is a minor problem. Many of my students like to use the .pdf version of the book (as they can use it while offline). This is helpful for them, but they do lose the links and some of the interactive things they can do (lots of the links are to applications that are interactive). However the content section in .pdf version links to the chapters, which is nice for the students. I have not seen the paper copy as that is a fairly new product.Grammatical Errorsrating:4There are occasional text and grammatical errors found in the book. However, these have been quickly corrected in the online version when a report was submitted. These were not errors that detracted from the overall ability to understand the material, and there were only a few throughout the whole of the book.Cultural Relevancerating:5The book draws from multiple space agencies (though NASA is one of the largest sources) and highlights scientists from multiple countries throughout the chapters. This is helpful in making the book culturally relevant. Beyond that I have not found offensive language in the book. CommentsOverall I have enjoyed using this book. I like the layout and content, especially the links and the pictures. There is an emphasis on the method of discovery as well as what we know which is important and welcome. The short sections help encourage students to do the reading and the online free version means that more students are actually getting and reading the book. The students have enjoyed using some of the interactive links and there have been some that I ended up using in-class assignments as well. The students have enjoyed the book and found it easy to read and use. I am very glad that I made the switch as I feel that is has worked better with the students (both academically and financially) without losing any of the science information or accuracy. In addition, OpenStax does provide some teacher resources that are helpful (power points with the pictures, sample schedules, etc.) which make the transition to a new textbook a little less stressful.Reviewed by James Rittenbach, Professor, Rogue Community College on 4/11/17This text is very comprehensive at nearly 1200 pages for an introductory astronomy text. It covers more topics than any other astronomy text at this level that I have seen. It has thirty solid chapters with each chapter very complete. The...read moreReviewed by James Rittenbach, Professor, Rogue Community College on 4/11/17Comprehensivenessrating:5see lessThis text is very comprehensive at nearly 1200 pages for an introductory astronomy text. It covers more topics than any other astronomy text at this level that I have seen. It has thirty solid chapters with each chapter very complete. The thirteen appendices have all the data that could be possibly be of interest for this course.Content Accuracyrating:5This text is very comprehensive at nearly 1200 pages for an introductory astronomy text. It covers more topics than any other astronomy text at this level that I have seen. It has thirty solid chapters with each chapter very complete. The thirteen appendices have all the data that could be possibly be of interest for this course. I didnt see any errors other than what is addressed in the online errata. Pointing the students to errata would be a good idea but since the text is open source, it will be easy to incorporate these changes much more easily.Relevance/Longevityrating:4One of the exciting aspects of astronomy is the huge advances that are made on a regular basis with improved imaging and analysis. As it stands, it is one of the more up to date texts. As an open source text that can be edited, it will be easy to incorporate new information and understanding. Clarityrating:5One of the challenges in an astronomy text is describing dynamic three-dimensional situations on a two-dimensional static page. This text does as well as any other on the page but also links out to web-based animations and simulations for additional clarity. Terminology and key concepts are well described and examples given in both text and figures.Consistencyrating:5The text is consistent and uses earlier terms and ideas as it builds up a more complete understanding.Modularityrating:5This text is designed with modularity in mind. Introductory astronomy courses may be one term, one semester or one year in length. In the instructors information, the authors are even kind enough to include several sample syllabi with a variety of lengths and subject emphasis.Organization/Structure/Flowrating:5With the variety of topics, there are many paths that are explored so when one is finished, the text jumps back into the flow. But it always refers to previous topics where appropriate to do so.Interfacerating:5The text looks good and has a clear layout that uses color, distinct consistent labeling of types of sections (such as Link to Learning, etc.). The font is a bit on the small side but if that was changed then the text would be even more than 1200 pages so it makes sense to have that tradeoff.Grammatical Errorsrating:5I did not find any grammatical errors.Cultural Relevancerating:5Where appropriate to do so, the text includes examples from history. CommentsI really like this text and plan on using it soon. As I am the lead professor for astronomy at our school, this means that all sections on all campuses will be using it. I would really like to see a lab activities text made for this.Reviewed by Kenny Tapp, Adjunct Professor, St. Cloud Technical & Community College | Riverland Community College on 12/5/16This book sufficiently covers all of the topics that are common for an introductory Astronomy course; it includes fundamentals (instruments, observations, radiation, basic physics), solar system (minor bodies, planets, and separate chapter...read moreReviewed by Kenny Tapp, Adjunct Professor, St. Cloud Technical & Community College | Riverland Community College on 12/5/16Comprehensivenessrating:5see lessThis book sufficiently covers all of the topics that are common for an introductory Astronomy course; it includes fundamentals (instruments, observations, radiation, basic physics), solar system (minor bodies, planets, and separate chapter exploring rings, moons, craters), stellar evolution (2-chapters dedicated to the Sun, multiple chapters exploring all stages of stellar evolution, and a special focus on analyzing starlight), and galaxies (MWG, distribution of all types). The index in the PDF version is very thorough and has clickable links to pages; index is not found in the web version. A stand-alone glossary does not exist for either PDF or web versions; however, each chapter contains a mini-glossary of terms (Key Terms) that vary in quantity (some chapters only have a few terms listed, others may have a dozen or more). Each chapter does include substantial exercises and activities, along with a healthy list of resources for further exploration (articles, websites, videos).Content Accuracyrating:5Overall, the content appears to be accurate and unbiased. Most diagrams, graphics, and images come from NASA. Given that NASA resources are used throughout the entire textbook, it builds confidence that the content has minimal errors. Relevance/Longevityrating:5This is perhaps the most important part of this review, since many traditional publishers struggle to timely update content with recent science and if they do, it results in yearly, new editions that are ultimately costly to students. The content in this textbook is UP-TO-DATE and features recent scientific discoveries (i.e. Pluto flyby, Mars rovers, exoplanets, etc.). OpenStax updates their textbooks yearly and the web version of this textbook will allow for content to be updated easily and frequently, if needed. This textbook contains recent scientific understanding & discoveries throughout all chapters and topics. Clarityrating:4The text is written to meet the level of an introductory student with mixed or minimal prereqs in science or math. Text includes embedded links that reference a term or concept from another chapter, this allows students to build connections more efficiently. Chapters include special examples, with clearly written explanation, of equations and derivations that would accommodate students of varied math backgrounds. Exercises, review questions, thought questions are provided in each chapter to challenge students of different levels.Consistencyrating:5Each chapter contains learning objectives, which establishes the framework for the content of that chapter. The structure of each chapter also includes a concept summary and numerous exercises, activities, review questions, etc..Modularityrating:5The textbook is easily and readily divisible into smaller sections, to accommodate varied design of introductory astronomy courses. The web version, especially, allows the division of chapters into topic-specific parts. The modularity of this textbook allows for easy integration into any LMS. Organization/Structure/Flowrating:5This textbook covers the core/common topics of Astronomy, while also presenting in-depth coverage of specific topics. It is structured and organized for a student to naturally progress and build basic Astronomy knowledge.Interfacerating:5PDF version works well across multiple devices; web interface is excellent.Grammatical Errorsrating:5The text contains no grammatical errors that were obvious.Cultural Relevancerating:5This text is scientifically objective. CommentsThe images and diagrams support the content and help learners better understand the concepts. The textbook includes links to interactive resources.PrefaceChapter1Science and the Universe: A Brief Tour1.1The Nature of Astronomy1.2The Nature of Science1.3The Laws of Nature1.4Numbers in Astronomy1.5Consequences of Light Travel Time1.6A Tour of the Universe1.7The Universe on the Large Scale1.8The Universe of the Very Small1.9A Conclusion and a BeginningFor Further ExplorationChapter2Observing the Sky: The Birth of Astronomy2.1The Sky Above2.2Ancient Astronomy2.3Astrology and Astronomy2.4The Birth of Modern AstronomyChapter 3. 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It has many analogies drawn from everyday life to help non-science majors appreciate, on their own terms, what our modern exploration of the universe is revealing. The book can be used for either a one-semester or two-semester introductory course.The secondedition has been updated according to new exploration and discoveries. The second edition also includes a significant amount of new art and images. The first edition ofAstronomyby OpenStax is available in web viewhere. Andrew Fraknoi retired as Chair of the Astronomy Department at Foothill College in 2017 and now teaches courses for older adults at the University of San Francisco and San Francisco State University. He served as the Executive Director of the Astronomical Society of the Pacific from 19781992. His work with the society included editing Mercury Magazine, the Universe in the Classroom newsletter, and Astronomy Beat. He is editor/co-author of The Universe at Your Fingertips 2.0, a collection of teaching activities, and co-author of Solar Science, a book for middle-school teachers. He was also co-author of a syndicated newspaper column on astronomy, and appears regularly on local and national radio. With Sidney Wolff, he was founder of the refereed journal, Astronomy Education Review. In addition, he has organized six national symposia on teaching introductory astronomy, and for 10 years, has led the AAS Ambassadors workshops, training young astronomers to be better at outreach. He received the AAS Education Award, the Klumpke-Roberts Prize of the ASP, the Gemant Prize of the American Institute of Physics, and the Faraday Award of the NSTA. David Morrison received his PhD in astronomy from Harvard, where he was one of Carl Sagans graduate students. He is a founder of the field of astrobiology and is known for research on small bodies in the solar system (Asteroid 2410 Morrison is named for him). He spent his early career at University of Hawaiis Institute for Astronomy, where he was Director of the IRTF at Maunakea Observatory. Morrison has held senior NASA positions including Director of Space Research at Ames Research Center, Chief of the Space Science Division, and founding Director of the Lunar Science Institute. Hes been on science teams for the Voyager, Galileo, and Kepler missions, and he received NASA Outstanding Leadership Medals and Exceptional Achievement Medal. His contributions to public understanding of science have been recognized by education prizes from the Astronomical Society of the Pacific, the American Astronomical Society, and NASA. Committed to the struggle against pseudoscience, he serves as Contributing Editor of Skeptical Inquirer. After receiving her PhD from the UC Berkeley, Dr. Sidney C. Wolff was involved with the astronomical development of Maunakea. In 1984, she became the Director of Kitt Peak National Observatory, and was director of National Optical Astronomy Observatory. She led the design and development phases of the Gemini Observatory and the Rubin Observatory. Most recently, she has worked on plans for user support for the next generation of large ground-based telescopes. Dr. Wolff has published over ninety refereed papers on star formation and stellar atmospheres. She has served as President of the AAS and the ASP. Her book, The Boundless Universe: Astronomy in the New Age of Discovery, won the 2016 IPPY (Independent Publisher Book Awards) Silver Medal in Science. Suggest an edit to this book record Ask the publishers to restore access to 500,000+ books.

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