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Descrizione fisica	1 online resource (XXI, 635 p. 148 illus., 26 illus. in color.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
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Soggetti	Astrophysics Space sciences Exobiology Astrophysics and Astroparticles Space Sciences (including Extraterrestrial Physics, Space Exploration and Astronautics) Astrobiology
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Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	List of focus elements -- List of tables -- Preface -- 1. Observing the Universe -- 2. Radiation -- 3. Gravity -- 4. Cosmic Motion -- 5. Moving Particles -- 6. Detecting Atoms in Stars -- 7. Transmutation of Elements -- 8. What Makes the Sun Shine? -- 9. The Extended Solar Atmosphere -- 10. The Sun Amongst the Stars -- 11. The Material Between the Stars -- 12. Formation of the Stars and their Planets -- 13 Stellar End States -- 14 A Larger, Expanding Universe -- 15 Origin, Evolution, and Destiny of the Observable Universe -- Appendix I Constants -- Appendix II Units -- Appendix III Fundamental Equations -- Author index -- Subject index.
Sommario/riassunto	Essential Astrophysics is a book to learn or teach from, as well as a fundamental reference volume for anyone interested in astronomy and astrophysics. It presents astrophysics from basic principles without requiring any previous study of astronomy or astrophysics. It serves as a comprehensive introductory text, which takes the student through the field of astrophysics in lecture-sized chapters of basic physical principles applied to the cosmos. This one-semester overview will be

enjoyed by undergraduate students with an interest in the physical sciences, such as astronomy, chemistry, engineering or physics, as well as by any curious student interested in learning about our celestial science. The mathematics required for understanding the text is on the level of simple algebra, for that is all that is needed to describe the fundamental principles. The text is of sufficient breadth and depth to prepare the interested student for more advanced specialized courses in the future. Astronomical examples are provided throughout the text, to reinforce the basic concepts and physics, and to demonstrate the use of the relevant formulae. In this way, the student learns to apply the fundamental equations and principles to cosmic objects and situations. All of the examples are solved with the rough accuracy needed to portray the basic result. Astronomical and physical constants and units as well as the most fundamental equations can be found in the appendix. Essential Astrophysics goes beyond the typical textbook by including references to the seminal papers in the field, with further reference to recent applications, results, or specialized literature. There are fifty set-aside focus elements that enhance and augment the discussion with fascinating details. They include the intriguing historical development of particular topics and provide further astrophysics equations or equations for other topics. Kenneth Lang is a world-renowned author on astrophysics. His books for professional astrophysicists as well as for students and the interested layman are highly acclaimed. .
