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| Nota di contenuto       | CONTENTS; 1. Introduction; 2. Galaxy Formation: From Start to Finish Andrew Benson; 2.1 Historical Perspective; 2.2 The Universe Before Galaxies; 2.3 The Story So Far; 2.3.1 The end of the dark ages; 2.3.2 Population III and the first galaxies; 2.3.3 The reionization of the universe; 2.3.4 Establishing the Hubble sequence; 2.3.5 The rise of the supermassive black holes; 2.4 What the Future Holds; References; 3. The Reionization of Cosmic Hydrogen by the First Galaxies Abraham Loeb; 3.1 Introduction; 3.1.1 Observing our past; 3.1.2 The expanding Universe; 3.2 Galaxy Formation<br>3.2.1 Growth of linear perturbations3.2.2 Halo properties; 3.2.3 Formation of the first stars; 3.2.4 Gamma-ray bursts: probing the first stars one star at a time; 3.2.5 Supermassive black holes; 3.2.6 The epoch of reionization; 3.2.7 Post-reionization suppression of low-mass galaxies; 3.3 Probing the Diffuse Intergalactic Hydrogen; 3.3.1 Lyman-alpha absorption; 3.3.2 21-cm absorption or emission; 3.3.2.1 The spin temperature of the 21-cm transition of hydrogen; 3.3.2.2 A handy tool for studying cosmic reionization; 3.4 Epilog; Acknowledgments; Further Reading; References<br>4. Clusters of Galaxies Elena Pierpaoli4.1 What are Galaxy Clusters? |

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### Sommario/riassunto

This volume tells of the quest for cosmology as seen by some of the finest cosmologists in the world. It starts with "Galaxy Formation from Start to Finish" and ends with "The First Supermassive Black Holes in the Universe," exploring in between the grand themes of galaxies, the early universe, expansion of the universe, dark matter and dark energy. This up-to-date collection of review articles offers a general introduction to cosmology and is intended for all probing into the profound questions on where we came from and where we are going.

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