1. Record Nr. UNINA9910896187403321

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Titolo	Cosmology for the Curious / / by Delia Perlov, Alex Vilenkin
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2024
ISBN	9783031587573
Edizione	[2nd ed. 2024.]
Descrizione fisica	1 online resource (xvii, 390 pages) : illustrations
Disciplina	523.1
Soggetti	Cosmology Gravitation Nuclear physics Physics - Philosophy Religion - Philosophy Classical and Quantum Gravity Nuclear and Particle Physics Philosophical Foundations of Physics and Astronomy Philosophy of Religion
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	A Historical Overview -- Newton’s Universe -- Special Relativity -- The Fabric of Space and Time -- An Expanding Universe -- Observational Cosmology -- Hubble’s Law and the Expanding Universe -- The Fate of the Universe -- Dark Matter and Dark Energy -- The Quantum World -- The Hot Big Bang -- Structure Formation -- Element Abundances -- The Very Early Universe.
Sommario/riassunto	This book is a gentle introduction for all those wishing to learn about modern views of the cosmos. Our universe originated in a great explosion – the big bang. For nearly a century cosmologists have studied the aftermath of this explosion: how the universe expanded and cooled down, and how galaxies were gradually assembled by gravity. The nature of the bang itself has come into focus only relatively recently. It is the subject of the theory of cosmic inflation, which was developed in the last few decades and has led to a radically new global

view of the universe. Students and other interested readers will find here a non-technical but conceptually rigorous account of modern cosmological ideas - describing what we know, and how we know it. One of the book's central themes is the scientific quest to find answers to the ultimate cosmic questions: Is the universe finite or infinite? Has it existed forever? If not, when and how did it come into being? Will it ever end? The book is based on the undergraduate course taught by Alex Vilenkin at Tufts University. It assumes no prior knowledge of physics or mathematics beyond elementary high school math. The necessary physics background is introduced as it is required. Each chapter includes a list of questions and exercises of varying degree of difficulty. This new edition includes hints for answering the questions and exercises, as well as extensions to the discussions on dark matter, quantum cosmology. A new chapter summarizing the standard cosmological model has also been added. .