1. Record Nr. UNINA9910457806903321

Titolo	The astronomy revolution : 400 years of exploring the cosmos / / edited by Donald G. York, Owen Gingerich, Shuang-Nan Zhang
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , 2012
ISBN	0-429-10638-6 1-283-35016-5 9786613350169 1-4398-3601-9
Descrizione fisica	1 online resource (438 p.)
Altri autori (Persone)	YorkDonald G. <1944-> GingerichOwen ZhangShuang-Nan
Disciplina	520.9
Soggetti	Astronomy - History Astronomy - Technological innovations Telescopes Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Contents; Preface; Acknowledgments; Contributors; Introduction: The New Vision 400 Project; Chapter 1: From the Language of Heaven to the Rationale of Matter; Chapter 2: The Impact of Modern Telescope Development on Astronomy; Chapter 3: Searching for Other Earths and Life in the Universe; The Formation and Evolution of Galaxies; Chapter 5: Structure Formation in the Universe: From the Dark Side to First Light; Chapter 6: An Overview of Supernovae, the Explosive Deaths of Stars; Chapter 7: The Dark Secrets of Gaseous Nebulae: Highlights from Deep Spectroscopy Chapter 8: Can We Detect Dark Matter?Chapter 9: Can We Understand Dark Energy?; Chapter 10: Astrophysical Black Holes in the Physical Universe; Chapter 11: Ultrahigh Energy Cosmic Rays; Chapter 12: New Technologies for Radio Astronomy; Chapter 13: Advanced Optical Techniques in Astronomy; Chapter 14: Scientific Opportunities for 30-Meter-Class Optical Telescopes; Chapter 15: The Impact of Astronomy

on Chinese Society in the Days before Telescopes; Chapter 16: The Impact of the Telescope in the West, 1608-1802; Chapter 17: The Impact of the Telescope on Astronomy and Society in China Chapter 18: Exoplanet Atmospheres and the Search for BiosignaturesChapter 19: What New Telescopes Can Tell Us about "Other Worlds"; Chapter 20: Multiverse Cosmology; Chapter 21: Universe or Multiverse?; Chapter 22: Cosmos and Humanity in Traditional Chinese Thought; Chapter 23: Laws of Nature, Moral Order, and the Intelligibility of the Cosmos; Chapter 24: Why Are the Laws of Nature as They Are? What Underlies Their Existence?; Appendix: The New Vision 400 Conference; Back Cover

Sommario/riassunto

Preface This book is a product of the New Vision 400 (NV400) conference held in Beijing in October 2008 in conjunction with the widely celebrated 400th anniversary of the invention of the telescope in 1608 by Hans Lipperhey (see http://nv400.uchicago.edu/). Like the conference, this book emphasizes the effects of technology on society and the origin of our understanding of a number of deep questions that arise out of scientific research, specifically astronomy and our knowledge of the cosmos. Looking beyond science questions to the role of moral responsibility in human civilizations, this volume offers the unique vantage points of contributions from both Eastern and Western cultures, which often differ dramatically in worldview and in knowledge. A Chinese-language edition of this book, to be published by Peking University Press, is also planned. Part I focuses on the general theme of creativity and technology in scientific--particularly astronomical--discovery and is based on presentations that were primarily aimed at young people at the public event preceding the NV400 conference. These discussions will be accessible to many readers regardless of their technical training. The editors structured the specific topics covered in Parts II through V around selected examples of well-recognized areas of astronomical knowledge, modern challenges, new technologies, and historical impact. The book concludes with Part VI, an investigation of big questions: What is the origin of the laws of physics as we know them? Why do these specific laws exist? Are these laws the same everywhere? How do these scientific laws relate to the moral laws of society? Does what we know depend on cultural ways of asking the questions?--