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Sommario/riassunto	The observation capabilities of modern astrophysics are constantly expanding. They range from optical telescopes and infrared space telescopes to radio telescopes and from gravitational wave detectors to neutrino observatories. While some focus on capturing light in space, others examine the smallest particles underwater or measure disturbances in spacetime that are smaller than the diameter of a proton. This book offers an exciting and comprehensive overview of

our technological capabilities to explore the universe. It serves as both a foundation for lectures in astronomy and astrophysics and an engaging read for those interested in the natural sciences. The Author Arnold Hanslmeier is a professor of astrophysics and was the director of the Institute of Physics at the University of Graz. His research stays and guest professorships have taken him to Toulouse, Freiburg, Innsbruck, Tenerife, Vienna, Zagreb, and Slovakia, among other locations. His expertise is wide-ranging: he delivers lectures for interested laypeople, is an experienced author of educational, popular science, and specialized books, and captures astronomical images at his private observatory. In 2023, the asteroid 182674 was named in his honor. The translation was done with the help of artificial intelligence. A subsequent human revision was done primarily in terms of content. This book is a translation of an original German edition. The translation was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation.