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Nota di contenuto	Preface; Contents; 1. Prologue; 2. Classical cosmological paradigm; 2.1 Astronomy in the first half of the 20th century; 2.1.1 The nature of spiral nebulae; 2.1.2 The expansion and age of the Universe; 2.1.3 The mean density of matter in the Universe; 2.1.4 The distribution of galaxies; 2.1.5 Structure of the system of stellar populations; 2.1.6 The evolution of stars; 2.2 History of Estonia, my family roots, and Tartu Observatory; 2.2.1 A short history of Estonia; 2.2.2 My roots; 2.2.3 My early life and first steps in astronomy; 2.2.4 Liia 2.2.5 Tartu Observatory after the war, and the building of the new observatory3. Galactic models and dark matter in the solar vicinity; 3.1 Early Galactic models; 3.1.1 Early Galactic models and first hints of the presence of dark matter; 3.1.2 Density of matter in the Solar vicinity; 3.1.3 Galactic models by Parenago, Kuzmin, and Schmidt; 3.2 New Galactic models; 3.2.1 Search for better models; 3.2.2 Generalised exponential model; 3.2.3 Our Galaxy, system of galactic constants; 3.2.4 Mass-to-luminosity ratios of stellar populations; 3.2.5 Evolution of galaxies 3.2.6 Models of galaxies of the local group and M87 mass paradox in galaxies; 3.3 Tartu Observatory in the 1960's; 3.3.1 New observatory;

Sommario/riassunto

The concepts of dark matter and the cosmic web are some of the most significant developments in cosmology in the past century. They have decisively changed the classical cosmological paradigm, which was first elaborated upon during the first half of the 20th century but ran into serious problems in the second half. Today, they are integral parts of modern cosmology, which explains everything from the Big Bang to inflation to the large scale structure of the Universe. Dark Matter and Cosmic Web Story describes the contributions that led to a paradigm shift from the Eastern point of view. It des