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Nota di contenuto	Exact Black Hole Solutions in Higher Order Scalar Tensor Theories -- Compact Objects in Einstein-scalar-Gauss-Bonnet Theory and Beyond -- Dynamics of Scalarization -- Effective Field Theory Approach to Black Hole Scalarization and its Compatibility with Cosmic Evolution -- Conformal Renormalization and Energy Functionals in Anti de Sitter (AdS) Gravity -- Black Hole Spectroscopy: Quasinormal Modes, Ringdown Stability and the Pseudospectrum -- Huge WKB Method and Quasinormal Modes of String-Theoretical D-Dimensional Black Holes -- Spacetime Geometry of Rotating Boson Stars and KBHsSH -- Seven Years of LIGO-Virgo Science -- Astrophysics of Radio sources: Analysis of 21cm Post-Reionization Signals and Modeling of FRBs as PBHs with Magnetic Fields -- BINGO-ABDUS: A Radiotelescope to Unveil the Dark Sector of the Universe -- Machine Learning Applications in Gravitational Wave Astronomy -- Features in the Inflaton Potential and the Spectrum of Cosmological Perturbations.
Sommario/riassunto	The main objective of this volume is to discuss the physical properties, observational signals and various probes of compact objects in the Universe. These include black holes, neutron stars, and exotic objects studied in alternative theories of gravity. The text is mainly addressed

to postgraduate students and young researchers with the aim of introducing them to these very challenging topics.