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Titolo	Biosignatures for Astrobiology [[electronic resource] /] / edited by Barbara Cavalazzi, Frances Westall
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ISBN	3-319-96175-6
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (362 pages)
Collana	Advances in Astrobiology and Biogeophysics, , 1610-8957
Disciplina	576.839
Soggetti	Astrobiology Biochemistry Paleontology Microbiology Mineralogy Biology—Philosophy Biochemistry, general Paleontology Philosophy of Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Foreword -- Preface -- Chemical Biosignatures at the Origins -- Organic Matter in Interplanetary Dusts and Meteorites -- Biosignatures of Cellular Components and Metabolic Activity -- The Deep Subseafloor and Biosignatures -- A Systematic Way to Life Detection – Combining Field, Lab and Space Research in Low Earth Orbit -- Mineralogical Identification of Traces of Life -- Biosignatures in Deep Time -- The Search for Biosignatures in Martian Meteorite Allan Hills 84001 -- Role of Mineral Surfaces in Prebiotic Processes and Space-like Conditions -- Photochemistry and Photoreactions of Organic Molecules in Space -- Exoplanetary Biosignatures for Astrobiology -- The Enigma of Methane on Mars -- Detection of Biosignatures Using Raman Spectroscopy -- Searching for Signs of Life on Other Planets: Mars a Case Study -- The History and Philosophy of Biosignatures.
Sommario/riassunto	This book aims at providing a brief but broad overview of

biosignatures. The topics addressed range from prebiotic signatures in extraterrestrial materials to the signatures characterising extant life as well as fossilised life, biosignatures related to space, and space flight instrumentation to detect biosignatures either in situ or from orbit. The book ends with philosophical reflections on the implications of life elsewhere. In the 15 chapters written by an interdisciplinary team of experts, it provides both detailed explanations on the nature of biosignatures as well as useful case studies showing how they are used and identified in ancient rocks, for example. One case study addresses the controversial finding of traces of fossil life in a meteorite from Mars. The book will be of interest not only to astrobiologists but also to terrestrial paleontologists as well as any reader interested in the prospects of finding a second example of life on another planet.