

1. Record Nr.	UNINA9910819123103321
Titolo	The Martian surface : composition, mineralogy, and physical properties // Jim Bell, editor [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2008
ISBN	1-107-17904-1 1-283-33095-4 9786613330956 0-511-41442-0 0-511-41510-9 0-511-41280-0 0-511-41188-X 0-511-53607-0 0-511-41372-6
Descrizione fisica	1 online resource (xvii, 636 pages) : digital, PDF file(s)
Collana	Cambridge planetary science ; ; [new ser.], 9
Disciplina	559.9/23
Soggetti	Mars (Planet) Surface Mars (Planet) Geology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 31 May 2016).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Exploration of the Martian surface : 1992-2007 / L.A. Soderblom and J. B. Bell III -- Historical context : the pre-MGS view of Mars' surface composition / W.M. Calvin and J.F. Bell III -- Martian surface chemistry : APXS results from the Pathfinder landing site / C.N. Foley [and others] -- Mars Exploration Rovers : chemical composition by the APXS / J. Bruckner [and others] -- Elemental abundances determined via the Mars Odyssey GRS / W.V. Boynton [and others] -- Volatiles on Mars : scientific results from the Mars Odyssey Neutron Spectrometer / W.C. Feldman [and others] -- Mineralogy of the Martian surface from Mars Express OMEGA observations / J.-P. Bibring and Y. Langevin -- Visible to near-IR multispectral orbital observations of Mars / J.F. Bell III [and others] -- Global mineralogy mapped from the Mars Global Surveyor Thermal Emission Spectrometer / P.R. Christensen [and others] -- The

compositional diversity and physical properties mapped from the Mars Odyssey Thermal Emission Imaging System / P.R. Christensen [and others] -- Mars' crustal magnetization : a window into the past / M.H. Acuna, G. Kletetschka, and J.E.P. Connerney -- Multispectral imaging from Mars Pathfinder / W.H. Farrand [and others] -- Mars Exploration Rover Pancam multispectral imaging of rocks, soils, and dust at Gusev crater and Meridiani Planum / J.F. Bell III [and others] -- The mineralogy of Gusev crater and Meridiani Planum derived from the Miniature Thermal Emission Spectrometers on the Spirit and Opportunity rovers / S.W. Ruff [and others] -- Iron mineralogy and aqueous alteration on Mars from the MER Mossbauer spectrometers / R.V. Morris and G. Klingelhofer -- Magnetic properties of Martian surface materials / W. Goetz [and others] -- Martian meteorites as crustal samples / H.Y. McSween Jr. -- The thermal inertia of the surface of Mars / M.T. Mellon, R.L. Fergason, and N.E. Putzig -- Physical properties of the Martian surface from spectrophotometric observations / J.R. Johnson [and others] -- In situ observations of the physical properties of the Martian surface / K.E. Herkenhoff [and others] -- Martian surface properties from joint analysis of orbital, Earth-based, and surface observations / M.P. Golombek [and others] -- Implications of observed primary lithologies / G.J. Taylor [and others] -- Aqueous alteration on Mars / D. W. Ming, R.V. Morris, and B.C. Clark -- The sedimentary rock cycle of Mars / S.M. McLennan and J.P. Grotzinger -- Martian polar processes / T.N. Titus [and others] -- Astrobiological implications of Mars' surface composition and properties / D.J. Des Marais, B.M. Jakosky, and B.M. Hynek -- The future of Mars exploration / J.F. Bell III.

Sommario/riassunto

Phenomenal new observations from Earth-based telescopes and Mars-based orbiters, landers, and rovers have dramatically advanced our understanding of the past environments on Mars. These include the first global-scale infrared and reflectance spectroscopic maps of the surface, leading to the discovery of key minerals indicative of specific past climate conditions; the discovery of large reservoirs of subsurface water ice; and the detailed in situ roving investigations of three new landing sites. This an important, new overview of the compositional and mineralogic properties of Mars since the last major study published in 1992. An exciting resource for all researchers and students in planetary science, astronomy, space exploration, planetary geology, and planetary geochemistry where specialized terms are explained to be easily understood by all who are just entering the field.
