

1. Record Nr.	UNINA9910741156603321
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Titolo	Aeronomy of Mars / / by S. A. Haider
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9931-38-X
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (259 pages)
Collana	Astrophysics and Space Science Library, , 2214-7985 ; ; 469
Disciplina	551.5099923
Soggetti	Solar system Astronomy Physical geography Mathematical physics Planetary science Plasma (Ionized gases) Space Physics Astronomy, Observations and Techniques Earth System Sciences Theoretical, Mathematical and Computational Physics Planetary Science Plasma Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Foundation of Ionospheric Theory -- Instruments for Ionospheric Measurements on Mars -- Exploration to Mars Atmosphere -- Thermal Structure of Mars Atmosphere -- Magnetic Field of Mars -- Upper Atmosphere of Mars -- Atmospheric Escape from Mars -- Upper Ionosphere of Mars -- Heating of the Upper Ionosphere of Mars -- Models of the Martian ionosphere -- Solar Flux for Ionospheric Modeling of Mars -- Cross Sections for Ionospheric Modeling of Mars -- Ionization Sources of Upper Ionosphere of Mars -- Mars Upper Ionospheric Disturbances -- Upper Ionosphere of Mars during Low, Medium and High Solar Activity -- Airglow on Mars -- Middle Ionosphere of Mars -- Gravity Waves in the Middle Atmosphere of Mars -- Lower Atmosphere of Mars -- Trace Gases of Mars Atmosphere --

Seasonal Variability of Atmospheric Gases -- Infrared Thermal Emissions from Mars Atmosphere -- Lower Ionosphere of Mars -- Conductivity -- Dust Storm in the Lower Atmosphere of Mars -- Summary and Conclusions -- References.

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## Sommario/riassunto

“Mangalyaan was launched on November 5, 2013, to Mars by Indian Space Research Organization (ISRO). On October 2, 2022, ISRO declared that Mangalyaan had lost communications with Earth. Mars Color Camera (MCC) on-board Mangalyaan has taken thousands pictures of Mars. A full disk of Mars image observed by Viking is shown on the cover page of this book. Mars is covered by the dust as observed by Mangalyaan (from Arya et al., 2015). This book presents the atmospheric and ionospheric results obtained from all missions to Mars. It also covers various atmospheric and ionospheric models of Mars. Broadly speaking, the planet’s atmosphere can be divided into two regions: lower and upper. These two regions can be coupled due to the propagation of energy from the lower to the upper atmosphere. The first-ever book on the aeronomy of Mars, this work is intended to help students and researchers familiarize themselves with the field of aeronomy. In addition, it helps planetary probe designers, engineers, and other users in the scientific community, e.g., planetary geologists and geophysicists”.

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