

1. Record Nr.	UNINA9910814816803321
Titolo	Encyclopedia of the solar system // edited by Tilman Spohn, Doris Breuer and Torrence Johnson
Pubbl/distr/stampa	Amsterdam, Netherlands ; ; Oxford, England ; ; Waltham, Massachusetts : , : Elsevier, , 2014 ©2014
ISBN	1-78402-870-3 0-12-416034-4 9780124158450
Edizione	[Third edition.]
Descrizione fisica	1 online resource (1335 p.)
Disciplina	523.203
Soggetti	Solar system Encyclopedias
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Foreword -- Preface to the Third Edition -- Preface to the Second Edition -- Preface to the First Edition -- About the Editors -- Contributors -- Part I The Solar System -- 1 The Solar System and Its Place in the Galaxy -- 2 The Origin of the Solar System -- 3 Solar System Dynamics: Regular and Chaotic Motion -- Part II Fundamental Planetary Processes and Properties -- 4 Planetary Impacts -- 5 Planetary Volcanism -- 6 Magnetic Field Generation in Planets -- 7 Planetary Magnetospheres -- 8 Rotation of Planets -- 9 Evolution of Planetary Interiors -- 10 Astrobiology -- Part III The Sun -- 11 The Sun -- 12 The Solar Wind -- Part IV Earthlike Planets -- 13 Mercury -- 14 Venus: Atmosphere -- 15 Venus: Surface and Interior -- 16 Mars Atmosphere: History and Surface Interactions -- 17 Mars: Surface and Interior -- 18 Interior Structure and Evolution of Mars -- 19 Mars: Landing Site Geology, Mineralogy, and Geochemistry -- Part V Earth and Moon as Planets -- 20 Earth as a Planet: Atmosphere and Oceans -- 21 Earth as a Planet: Surface and Interior -- 22 Space Weather -- 23 The Moon -- 24 Interior of the Moon -- 25 Lunar Exploration -- Part VI Asteroids, Dust and Comets -- 26 Main-Belt Asteroids -- 27 Near-Earth Objects -- 28 Meteorites -- 29 Dust in the Solar System -- 30

Physics and Chemistry of Comets -- 31 Comet Populations and
Cometary Dynamics --
Part VII Giant Planets and their Satellites -- 32 Atmospheres of the
Giant Planets -- 33 Interiors of the Giant Planets -- 34 Planetary
Satellites -- 35 Io: The Volcanic Moon -- 36 Europa -- 37 Ganymede
and Callisto -- 38 Titan -- 39 Enceladus -- 40 Triton -- 41 Planetary
Rings -- Part VIII Beyond the Planets -- 42 Pluto -- 43 Kuiper Belt:
Dynamics -- 44 Kuiper Belt Objects: Physical Studies -- 45 Extrasolar
Planets -- Part IX Exploring the Solar System -- 46 Strategies of
Modern Solar System Exploration -- 47 A History of Solar System
Studies -- 48 X-rays in the Solar System -- 49 The Solar System at
Ultraviolet Wavelengths -- 50 Infrared Views of the Solar System from
Space -- 51 New Generation Ground-Based Optical/Infrared Telescopes
-- 52 The Solar System at Radio Wavelengths -- 53 Planetary Radar --
54 Remote Sensing of Chemical Elements Using Nuclear Spectroscopy
-- 55 Probing the Interiors of Planets with Geophysical Tools -- 56
Planetary Exploration Missions -- 57 Exploration and Analysis of
Planetary Shape and Topography Using Stereophotogrammetry --
Appendix – Glossary.

Sommario/riassunto

"This book is filled with the knowledge about our solar system that resulted from all this exploration, whether by spacecraft or by telescopes both in space and earth-bound. All of this new knowledge is based on discoveries made in the interim by scientist-explorers who have followed their inborn human imperative to explore and to understand. Many old mysteries, misunderstandings, and fears that existed 50 years ago about what lay beyond the Earth have been eliminated. We now know the major features of the landscape in our cosmic backyard and can look forward to the adventure, excitement, and new knowledge that will result from more in-depth exploration by today's spacecraft, such as those actually exploring the surface of these faraway places, including the Huygens Titan lander and the Mars Exploration rovers, doing things that were unimaginable before the Space Age began. The Encyclopedia of the Solar System is filled with images, illustrations, and charts to aid in understanding. Every object in the solar system is covered by at least one chapter. Other chapters are devoted to the relationships among the objects in the solar system and with the galaxy beyond. The processes that operate on solar system objects, in their atmospheres, on their surfaces, in their interiors, and interactions with space itself are all described in detail. There are chapters on how we explore and learn about the solar system and about the investigations used to make new discoveries. And there are chapters on the history of solar system exploration and the missions that have carried out this enterprise. All written by an international set of world-class scientists using rigorous yet easy-to-understand prose"

--Provided by publisher.