

1. Record Nr.	UNINA9910817263703321
Autore	Lowman Paul D
Titolo	Exploring space, exploring earth : new understanding of the earth from space research // Paul D. Lowman, Jr. ; foreword by Neil A. Armstrong
Pubbl/distr/stampa	Cambridge ; ; New York, : Cambridge University Press, 2002
ISBN	1-107-12841-2 1-280-41764-1 9786610417643 1-139-14618-1 0-511-16968-X 0-511-06861-1 0-511-06017-3 0-511-33116-9 0-511-06648-1
Edizione	[1st ed.]
Descrizione fisica	1 online resource (408 p.)
Disciplina	550/.28/7
Soggetti	Earth sciences - Remote sensing Astronautics in earth sciences
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 (p. 309-357) and index.
Nota di contenuto	Cover; Half-title; Title; Copyright; Dedication; CONTENTS; FOREWORD; PREFACE; ACKNOWLEDGEMENTS; CHAPTER 1 Preview of the orbital perspective: the million-year day; 1.1 Introduction; 1.2 A digital tectonic activity map of the Earth; 1.3 Sea-surface satellite altimetry; 1.4 Satellite measurement of plate motion and deformation; 1.5 Satellite remote sensing; 1.6 Satellite magnetic surveys; 1.7 Origin and significance of the digital tectonic activity map; CHAPTER 2 Space geodesy; 2.1 Introduction; 2.2 Space geodesy methods; 2.3 Shape of the Earth; 2.4 Gravity anomalies and global tectonics 2.5 Marine gravity and ocean-floor topography 2.6 Plate motion and deformation; 2.7 Plate tectonics and continental drift; 2.8 GPS measurements of crustal deformation; 2.9 Earth rotation and expansion tectonics; 2.10 Extraterrestrial gravity fields; 2.10.1 Gravity field of the Moon; 2.10.2 Gravity field of Mars; 2.10.3 Gravity field of Venus; 2.11

Summary; CHAPTER 3 Satellite studies of geomagnetism; 3.1 Introduction; 3.2 Satellite investigations of the Earth's magnetic field; 3.3 The main field; 3.4 The crustal field; 3.5 Extraterrestrial magnetic fields; 3.6 Summary  
CHAPTER 4 Remote sensing: the view from space 4.1 Introduction; 4.2 Orbital remote sensing in geology: a brief history; 4.3 Tectonics and structural geology; 4.3.1 Global tectonic activity map; 4.3.2 Tectonics of southern Asia; 4.3.3 Elsinore Fault; 4.3.4 Lineament tectonics; 4.4 Exploration geology; 4.4.1 Petroleum exploration; 4.4.2. Mineral exploration; 4.5 Environmental geology; 4.5.1 Active volcanism; 4.5.2 Glacial geology; 4.5.3 Aeolian geology and desertification; 4.6 Summary; CHAPTER 5 Impact cratering and terrestrial geology; 5.1 Introduction; 5.2 Hypervelocity impact  
5.3 Impact craters 5.4 Cratering studies and the space age; 5.5 Origin of continents; 5.6 Origin of ocean basins; 5.7 Economic importance of terrestrial impact structures; 5.8 Origin of the Sudbury Structure; 5.9 Impacts and basaltic magmatism; 5.10 Impacts and mass extinctions; 5.11 Summary; CHAPTER 6 Comparative planetology and the origin of continental crust; 6.1 Introduction; 6.2 Origin of the continental crust; 6.3 Previous studies; 6.3.1 Crustal province boundaries: are they sutures?; 6.3.2 Ensilic greenstone belts; 6.3.3 Terrane accretion vs. reworking; 6.4 Thermal histories of planets  
6.5 Crustal evolution in silicate planets 6.5.1 First differentiation; 6.5.2 Late heavy bombardment; 6.5.3 Second differentiation; 6.5.4 Summary; 6.6 A model of continental crust; 6.5.1 First differentiation; 6.5.2 Late heavy bombardment; 6.5.3 Second differentiation; 6.5.4 Summary; 6.6 A model of continental crust; 6.7 Evolution of the continental crust; 6.7.1 Stage I: first differentiation; 6.7.2 Stage II: second differentiation; 6.8 Petrologic evolution of the Earth; CHAPTER 7 Geology and biology: the influence of life on terrestrial geology; 7.1 Introduction; 7.2 Gaia 7.3 The geologic role of water

---

Sommario/riassunto

Account of the impact of space exploration on our understanding of the geology and geophysics of Earth.

---