

Introduction

Table 1.1. *Titles of the volumes in the Heliophysics series. References in this volume to chapters in other volumes use the numbering as in this table.*

Volume	Title and focus
I	Plasma physics of the local cosmos
II	Space storms and radiation: causes and effects
III	Evolving solar activity and the climates of space and Earth
IV	Active stars, their astrospheres, and impacts on planetary environments
V*	Space weather and society

Table 1.2. *Chapters and their authors in the Heliophysics series sorted by theme (continued on the next page), not showing introductory chapters.*

Universal and fundamental processes, diagnostics, and methods	
I.2. Introduction to heliophysics	<i>T. Bogdan</i>
I.3. Creation and destruction of magnetic field	<i>M. Rempel</i>
I.4. Magnetic field topology	<i>D. Longcope</i>
I.5. Magnetic reconnection	<i>T. Forbes</i>
I.6. Structures of the magnetic field	<i>M. Moldwin et al.</i>
II.3 In-situ detection of energetic particles	<i>G. Gloeckler</i>
II.4 Radiative signatures of energetic particles	<i>T. Bastian</i>
II.7 Shocks in heliophysics	<i>M. Opher</i>
II.8 Particle acceleration in shocks	<i>D. Krauss-Varban</i>
II.9 Energetic particle transport	<i>J. Giacalone</i>
II.11 Energization of trapped particles	<i>J. Green</i>
IV.11 Dusty plasmas	<i>M. Horányi</i>
IV.12 Energetic-particle environments in the solar system	<i>N. Krupp</i>
IV.13 Heliophysics with radio scintillation and occultation	<i>M. Bisi</i>
Stars, their planetary systems, planetary habitability, and climates	
III.3 Formation and early evol. of stars and proto-planetary disks	<i>L. Hartmann</i>
III.4 Planetary habitability on astronomical time scales	<i>D. Brownlee</i>
III.11 Astrophysical influences on planetary climate systems	<i>J. Beer</i>
III.12 Assessing the Sun-climate relationship in paleoclimate records ...	<i>T. Crowley</i>
III.14 Long-term evolution of the geospace climate	<i>J. Sojka</i>
III.15 Waves and transport processes in atmosph. and oceans	<i>R. Walterscheid</i>
IV.5 Characteristics of planetary systems	<i>D. Fischer & J. Wang</i>
IV.7 Climates of terrestrial planets	<i>D. Brain</i>
The Sun, its dynamo, and its magnetic activity; past, present, and future	
I.8. The solar atmosphere	<i>V. Hansteen</i>
II.5 Observations of solar and stellar eruptions, flares, and jets	<i>H. Hudson</i>
II.6 Models of coronal mass ejections and flares	<i>T. Forbes</i>
III.2 Long-term evolution of magnetic activity of Sun-like stars	<i>C. Schrijver</i>
III.5 Solar internal flows and dynamo action	<i>M. Miesch</i>
III.6 Modeling solar and stellar dynamos	<i>P. Charbonneau</i>
III.10 Solar irradiance: measurements and models	<i>J. Lean & T. Woods</i>
IV.2 Solar explosive activity throughout the evol. of the solar system	<i>R. Osten</i>

Table 1.2. (Continued from the previous page) Chapters and their authors in the *Heliophysics series sorted by theme, not showing introductory chapters.*

Astro-/heliospheres, the interstellar environment, and galactic cosmic rays	
I.7. Turbulence in space plasmas	<i>C. Smith</i>
I.9. Stellar winds and magnetic fields	<i>V. Hansteen</i>
III.8 The structure and evolution of the 3D solar wind	<i>J. Gosling</i>
III.9 The heliosphere and cosmic rays	<i>J. Jokipii</i>
IV.3 Astrospheres, stellar winds, and the interst. medium	<i>B. Wood & J. Linsky</i>
IV.4 Effects of stellar eruptions throughout astrospheres	<i>O. Cohen</i>
Dynamos and environments of planets, moons, asteroids, and comets	
I.10. Fundamentals of planetary magnetospheres	<i>V. Vasyliūnas</i>
I.11. Solar-wind magnetosphere coupling	<i>F. Toffoletto & G. Siscoe</i>
I.13. Comparative planetary environments	<i>F. Bagenal</i>
II.10 Energy conversion in planetary magnetospheres	<i>V. Vasyliūnas</i>
III.7 Planetary fields and dynamos	<i>U. Christensen</i>
IV.6 Planetary dynamos: updates and new frontiers	<i>S. Stanley</i>
IV.10 Moons, asteroids, and comets interact. with their surround.	<i>M. Kivelson</i>
Planetary upper atmospheres	
I.12. On the ionosphere and chromosphere	<i>T. Fuller-Rowell & C. Schrijver</i>
II.12 Flares, CMEs, and atmospheric responses	<i>T. Fuller-Rowell & S. Solomon</i>
III.13 Ionospheres of the terrestrial planets	<i>S. Solomon</i>
III.16 Solar variability, climate, and atmosph. photochemistry ...	<i>G. Brasseur et al.</i>
IV.8 Upper atmospheres of the giant planets	<i>L. Moore et al.</i>
IV.9 Aeronomy of terrestrial upper atmospheres	<i>D. Siskind & S. Bougher</i>
Technological and societal impacts of space weather phenomena	
II.2 Introduction to space storms and radiation	<i>S. Odenwald</i>
II.13 Energetic particles and manned spaceflight	<i>S. Guetersloh & N. Zapp</i>
II.14 Energetic particles and technology	<i>A. Tribble</i>
V.2 Space weather: impacts, mitigation, forecasting	<i>S. Odenwald</i>
V.3 Commercial space weather in response to societal needs	<i>W. Tobiska</i>
V.4 The impact of space weather on the electric power grid	<i>D. Boteler</i>
V.5 Radio waves for communication and ionospheric probing	<i>N. Jakowski</i>