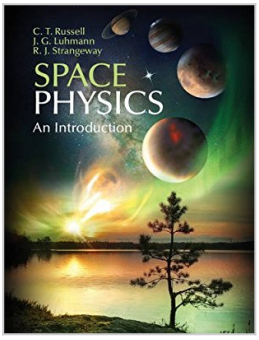

Space Physics: An Introduction

By C. T. Russell, J. G. Luhmann, R. J. Strangeway

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This textbook, derived from courses given by three leading researchers, provides advanced undergraduates and graduates with up-to-date coverage of space physics, from the Sun to the interstellar medium. Clear explanations of the underlying physical processes are presented alongside major new discoveries and knowledge gained from space missions, ground-based observations, theory, and modelling to inspire students. Building from the basics to more complex ideas, the book contains enough material for a two-semester course but the authors also provide suggestions for how the material can be tailored to fit a single semester. End-of-chapter problems reinforce concepts and include computer-based exercises specially developed for this textbook package. Free access to the software is available via the book's website and enables students to model the behavior of magnetospheric and solar plasma. An extensive glossary recaps new terms and carefully selected further reading sections encourage students to explore advanced topics of interest.

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Editorial Review

Review
"[This book] provides a significant update of scientific material in the rapidly changing field of space plasma physics while maintaining a level appropriate for seniors and beginning graduate students. I look forward to using this text the next time I teach my course."
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"This is a very welcome update, which makes excellent use of recent advances in simulation techniques to illustrate concepts, and each chapter ends with a valuable set of problems, many of which are linked to online resources and applications. I have no doubt that this volume will rapidly become the standard recommended textbook for those teaching both basic and advanced courses in space plasmas."
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About the Author
Christopher T. Russell has written over 1500 articles in books and journals on planetary and space physics and has been cited over 45,000 times. He has been awarded the AGU's Macelwane medal, its Fleming medal and COSPAR's Science award. He has been a principal investigator on numerous missions including ISEE 1 and 2, Pioneer Venus, the ISTP/Polar mission and the Magnetospheric Multiscale mission. He is also the Principal Investigator of the ion-propelled Dawn Discovery mission to the asteroid belt.

Janet G. Luhmann has authored or co-authored over 600 publications in areas of space and planetary physics and served as Senior Editor for the Journal of Geophysical Research, Space Physics. She has been awarded AGU's Fleming medal and COSPAR's Science award. She has been an Investigator on numerous NASA and NSF projects involving the Sun's control of the space environments of the Earth and planets, most recently the STEREO mission to observe the 3D effects of solar activity in the inner solar system, and the MAVEN mission to study Mars atmosphere escape to space.

Robert J. Strangeway is an author or co-author on over 200 publications covering a variety of space physics topics. He regularly teaches the Introduction to Space Physics course at the University of California, Los Angeles, which is the basis for this book. He is currently the Senior Editor for the Journal of Atmospheric and Solar-Terrestrial Physics. In addition to serving as an Investigator with the missions AMPTE/CCE, Pioneer Venus and FAST he was the Principal Investigator for the magnetometers developed for Space Technology 5.

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