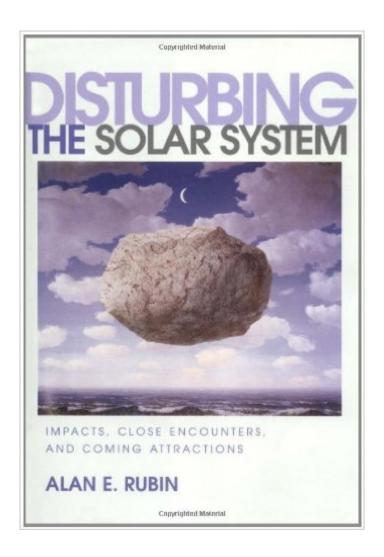
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Disturbing The Solar System: Impacts, Close Encounters, And Coming Attractions





Synopsis

The solar system has always been a messy place in which gravity wreaks havoc. Moons form, asteroids and comets crash into planets, ice ages commence, and dinosaurs disappear. By describing the dramatic consequences of such disturbances, this authoritative and entertaining book reveals the fundamental interconnectedness of the solar system--and what it means for life on Earth. After relating a brief history of the solar system, Alan Rubin describes how astronomers determined our location in the Milky Way. He provides succinct and up-to-date accounts of the energetic interactions among planetary bodies, the generation of the Earth's magnetic field, the effects of other solar-system objects on our climate, the moon's genesis, the heating of asteroids, and the origin of the mysterious tektites. Along the way, Rubin introduces us to the individual scientists--including the famous, the now obscure, and the newest generation of researchers--who have enhanced our understanding of the galactic neighborhood. He shows how scientific discoveries are made; he discusses the uncertainty that presides over the boundaries of knowledge as well as the occasional reluctance of scientists to change their minds even when confronted by compelling evidence. This fresh historical perspective reveals science as it is: an imperfect but self-correcting enterprise. Journeying to the frontiers of knowledge, Rubin concludes with the exciting realm of astrobiology. He chronicles the history of the search for life on Mars and describes cutting-edge lines of astrobiological inquiry, including panspermia (the possible transfer of life from planet to planet), the likelihood of technologically advanced alien civilizations in our galaxy, and our probable responses to alien contact. Authoritative and up-to-date but also entertaining and fluidly written, Disturbing the Solar System will appeal to any reader who has ever picked up a rock or gazed at the moon with a sense of wonder.

Book Information

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Customer Reviews

Dr. Alan Rubin's first book covers an extremely diverse (but interrelated) range of topics, including solar system evolution, orbital resonances, mass extinctions, asteroids, meteorites, tektites, craters, volcanism, plate tectonics, magnetic pole reversals, planetary rings, moons, comets, the evolution of life, and even the Drake Equation and the search for extraterrestrial intelligence. No matter how broad your background might be in astronomy, physics, chemistry and biology, you are still likely to find a few topics or theories in this book that you've never been exposed to before. For me, I'd never made the connection that domesticatable animals might be a requirement for a technologically advanced civilization. And while I'd read a number of books (both fiction and non-fiction) suggesting that life might not have evolved if it weren't for our planet's large moon, I had not previously read that the Moon stabilizes the tilt of the earth's axis. I knew about the Moon's role in nutation of the earth's axis, but was not aware that French astronomers had recently performed a computer simulation of what would happen to the earth's axis over time if the Moon were absent. (Gravitational interaction between the planets and earth's equatorial bulge would cause the obliquity of the ecliptic to vary chaotically over relatively small time periods -- millions of years. Such unstable seasons would lead to extreme global climatic fluctuations, making it much more difficult for life to establish itself.) As you might expect, there are many dozens of photographs, diagrams, graphs and illustrations scattered throughout.

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