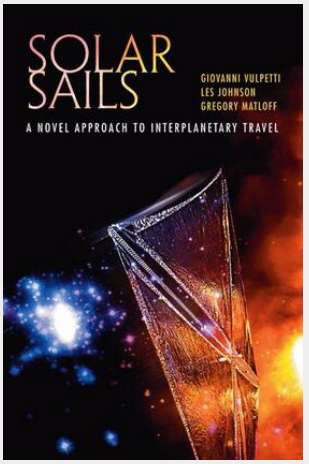
Vulpetti / Johnson / Matloff

# SOLAR SAILS




Solar sail technology is very close to becoming an engineering reality and it will soon be used in the exploration of the solar system and beyond. This fascinating book provides an accessible introduction to solar sails and details how they work and what they will be used for in the exploration of space. It also examines current plans for solar sails and how advanced technology, such as nanotechnology, might enhance their performance. Coverage shows how solar sail propulsion will make space exploration more affordable and demonstrates how access to destinations within (and beyond) the solar system will become within reach.

Solar sailing is a topic of growing popular and media interest. Solar sail propulsion will make space exploration more affordable and offer access to destinations within (and beyond) the solar system that are currently beyond our reach. This book describes solar sails, how they work and what they will be used for in the exploration of space in an easily readable manner which does not necessitate any prior knowledge of physics or solar sailing. It discusses current plans for solar sails and also describes how advanced technology, such as nanotechnology, might enhance solar-sail performance. Much has been accomplished recently to make solar sail technology very close to becoming an engineering reality and it will soon be used by the world's space agencies in the exploration of the solar system and beyond. The book has four parts, each with multiple chapters which, in turn, contain some references and suggested further reading. Parts 1 - 3 are non-mathematical, while Part 4 contains more detailed technical information. Part 1 summarizes space propulsion systems and technologies. These are the key to any deep space exploration by humans, robots, or both. Solar-sail propulsion will make space exploration more affordable and offer access to destinations within (and beyond) the solar system that are currently beyond our reach. Part 2 describes the fundamentals of space solar sail propulsion at a non-mathematical level and will include the near-, mid- and far-term missions that might use solar sails as a propulsion system. Near-term missions will study the sun and will carry artifacts and human DNA into deep space. Mid-term missions will go to the outer solar system and into nearby interstellar space. The far-term missions might be possible with very large, ultra-lightweight sails, possibly using beamed energy from space-based lasers, to carry our first spacecraft to another star. Part 3 outlines solar sail technology and the construction of current and future sailcraft, including the work of both government and private space organizations. Images of sail hardware that has been built, tested and, in some cases, flown will be included. Part 4 will give a more rigorous explanation of solar sail propulsion (supporting Part 1) and the supporting analysis of the missions and technologies discussed in Parts 2 & 3.

**21,35 €**
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