Record Nr.	UNINA9910437765503321
Autore	Vulpetti Giovanni
Titolo	Fast solar sailing : astrodynamics of special sailcraft trajectories / / Giovanni Vulpetti
Pubbl/distr/stampa	New York, : Springer, 2013
ISBN	1-283-91117-5 94-007-4777-2
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (425 p.)
Collana	Space technology library
Disciplina Soggetti	629.4754 Solar sails
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 and index.
Nota di contenuto	pt. I. A review of rocket spacecraft trajectories pt. II. Sailing in space environment pt. III. Sailcraft trajectories pt. IV. Advanced aspects.
Sommario/riassunto	The range of solar sailing is very vast; it is a fully in-space means of propellantless propulsion that should allow us to accomplish various mission classes that are unviable using near or medium-term rocket propulsion, no matter if nuclear or electric. Fast and very fast solar sailings are special classes of sailcraft missions, initially developed only in the first half of the 1990s and still evolving, especially after the latest advances in nanotechnology. This book describes how to plan, compute and optimize the trajectories of sailcraft with speeds considerably higher than the Earth's orbital speed (30 km/s); such sailcraft would be able to explore the outer heliosphere, the near interstellar medium and the solar gravitational lens (550-800 astronomical units) in times significantly shorter than the span of an average career (~ 35 years), just to cite a few examples. The scientific interest in this type of exploration is huge.

1.