

1. Record Nr.	UNINA9910960264703321
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Titolo	Planetary landers and entry probes // Andrew J. Ball [and others]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2007
ISBN	1-107-15946-6 1-280-90937-4 9786610909377 0-511-28615-5 0-511-28541-8 0-511-28381-4 0-511-32084-1 0-511-53605-4 0-511-28461-6
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xxi, 340 pages) : digital, PDF file(s)
Disciplina	629.046
Soggetti	Roving vehicles (Astronautics) Space probes Space vehicles - Design and construction Space vehicles - Control systems Planets - Exploration
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Acknowledgements; Part I. Engineering Issues Specific to Entry Probes, Landers or Penetrators: 1. Mission goals and system engineering; 2. Accommodation, launch, cruise and arrival from orbit or interplanetary trajectory; 3. Entering atmospheres; 4. Descent through an atmosphere; 5. Descent to an airless body; 6. Planetary balloons, aircraft, submarines and cryobots; 7. Arrival at a surface; 8. Thermal control of landers and entry probes; 9. Power systems; 10. Communication and tracking of entry probes; 11. Radiation environment; 12. Surface activities: arms, drills, moles and mobility; 13. Structures; 14. Contamination of spacecraft and planets; Part II. Previous Atmosphere/Surface Vehicles and Their Payloads: 15.

Destructive impact probes; 16. Atmospheric entry probes; 17. Pod landers; 18. Legged landers; 19. Payload delivery penetrators; 20. Small body surface missions; Part III. 'Case Studies': 21. Surveyor landers; 22. Galileo probe; 23. Huygens; 24. Mars Pathfinder and Sojourner; 25. Deep Space 2 Mars microprobes; 26. Rosetta lander Philae; 27. Mars exploration rovers: Spirit and Opportunity; Appendix: Some key parameters for bodies in the Solar System; List of acronyms; Bibliography; References; Index.

Sommario/riassunto

This book provides a concise but broad overview of the engineering, science and flight history of planetary landers and atmospheric entry probes designed to explore the atmospheres and surfaces of other planets. It covers engineering aspects specific to such vehicles which are not usually treated in traditional spacecraft engineering texts. Examples are drawn from over thirty different lander and entry probe designs that have been used for lunar and planetary missions since the early 1960s. The authors provide detailed illustrations of many vehicle designs from different international space programs, and give basic information on their missions and payloads, irrespective of the mission's success or failure. Several missions are discussed in more detail to demonstrate the broad range of the challenges involved and the solutions implemented. This will form an important reference for professionals, academic researchers and graduate students involved in planetary science, aerospace engineering and space mission development.
