

ASTEROID RETRIEVAL MISSION FEASIBILITY STUDY

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Asteroid Retrieval Feasibility Study:

Asteroid Retrieval Feasibility Study, 2012 Describes the results of a study sponsored by the Keck Institute for Space Studies KISS to investigate the feasibility of identifying robotically capturing and returning an entire Near Earth Asteroid NEA to the vicinity of the Earth by the middle of the next decade *Asteroids IV* Patrick Michel, Francesca E. DeMeo, William F. Bottke, 2015-12-31 Over the past decade asteroids have come to the forefront of planetary science Scientists across broad disciplines are increasingly recognizing that understanding asteroids is essential to discerning the basic processes of planetary formation including how their current distribution bespeaks our solar system's cataclysmic past For explorers the nearest asteroids beckon as the most accessible milestones in interplanetary space offering spaceflight destinations easier to reach than the lunar surface For futurists the prospects of asteroids as commercial resources tantalize as a twenty first century gold rush albeit with far greater challenges than faced by nineteenth century pioneers For humanity it is the realization that asteroids matter It is not a question of if but when the next major impact will occur While the disaster probabilities are thankfully small fully cataloging and characterizing the potentially hazardous asteroid population remains unfinished business *Asteroids IV* sets the latest scientific foundation upon which all these topics and more will be built upon for the future Nearly 150 international authorities through more than 40 chapters convey the definitive state of the field by detailing our current astronomical compositional geological and geophysical knowledge of asteroids as well as their unique physical processes and interrelationships with comets and meteorites Most importantly this volume outlines the outstanding questions that will focus and drive researchers and students of all ages toward new advances in the coming decade and beyond **The Earth-Moon System as a Dynamical Laboratory** Elisa Maria Alessi, Josep Masdemont, Alessandro

Rossi, 2019-09-25 The Earth Moon neighborhood is the scene of a large variety of applications that concern asteroids lunar exploration and space debris in Earth orbit In particular recent efforts by the scientific community have focused on the possibility of extending the human operations beyond the radiation belts of exploiting in situ resources either on the lunar surface or on asteroids retrieved to the vicinity of the Earth and of mitigating the space debris concern by taking advantage of the lunar perturbation The characteristic dynamics in the cislunar space represents an opportunity for the mission designer but also a challenge in terms of theoretical understanding and operational control This Research Topic covers the Earth Moon dynamics in its complexity and allure considering the most relevant aspects for both natural and artificial objects in order to get a new comprehension of the dynamics at stake along with the operational procedures that can handle it

Space Resource Utilization: A View from an Emerging Space Faring Nation Annette Froehlich, 2018-01-10 The book speaks to the need for a regulatory framework with regards to space resource utilization In doing so significant elements of the subject matter have been explored taking into account the different phases of a space mission and the perspectives of the various actors and participants in the space arena The book tackles the subject matter from a number of

angles An analysis of the current national and international governance frameworks is performed with regards to resource extraction and utilization in space The view of established and emerging space nations is analyzed next specifically with extraction and utilization in mind and in light of the new United State US Commercial Space Launch Competitiveness Act CSLCA of 2015 A brief analysis of the various budgets allocated to space exploration is given **Asteroids** Viorel Badescu,2013-07-03 The Earth has limited material and energy resources while these resources in space are virtually unlimited Further development of humanity will require going beyond our planet and exploring of extraterrestrial resources and sources of unlimited power Thus far all missions to asteroids have been motivated by scientific exploration However given recent advancements in various space technologies mining asteroids for resources is becoming ever more feasible A significant portion of asteroids value is derived from their location the required resources do not need to be lifted at a great expense from the surface of the Earth Resources derived from Asteroid not only can be brought back to Earth but could also be used to sustain human exploration of space and permanent settlements in space This book investigates asteroids prospective energy and material resources It is a collection of topics related to asteroid exploration and utilization It presents past and future technologies and solutions to old problems that could become reality in our life time The book therefore is a great source of condensed information for specialists involved in current and impending asteroid related activities and a good starting point for space researchers inventors technologists and potential investors Written for researchers engineers and businessmen interested in asteroids exploration and exploitation Keywords Asteroids Asteroid exploration Asteroid exploitation Energy sources Space Resources Material Resources In Situ Resource Utilization Mining Study of the economic and practical feasibility of asteroid capture as a means for obtaining raw materials Kim Renee Bascomb,1987

Summer Workshop on Near-earth Resources James R. Arnold,Michael B. Duke,1978 **NASA Conference Publication** ,1982 **The Minor Planet Index to Scientific Papers** Clifford J. Cunningham,1991 *Tethers in Space Handbook* William A. Baracat,1986 **Tethers in Space Handbook** ,1986 **International Aerospace Abstracts** ,1999 *Proceedings of the 11th Symposium on Space Nuclear Power and Propulsion* Mohamed S. El-Genk,Mark D. Hoover,1994 Advanced Automation for Space Missions ,1982 Life In The Universe William A. Gale,1979-10-25 New Moons ,1978 **AIAA Bulletin** ,1972 **Code Name Handbook** Defense Marketing Services, inc,1978 **Conference Papers Index** ,1980 **Space Manufacturing III** Jerry Grey,Christine Krop,1979

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