

Interactive Presentations (IP)
Topic 3 - Interactive Presentations (3)

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A DESIGN OF A SPACECRAFTS FLEET TO BRING BACK MARS’ ROCK SAMPLES TO EARTH

Abstract

The search for life forms and future manned missions are and will remain the main motivations behind the planet Mars exploration in the next decades. Currently, only a handful of missions have the objective of recovering rock samples from Mars. These samples will provide a better understanding of the Martian soil and atmosphere. Motivated by the facts, we propose a design of a spacecraft composed of a lander, a rocket and a probe. This spacecraft could be a solution for bringing back Martian rock samples to Earth without risking contamination and in only one mission. Thus, we define the different mission phases of such an operation, describing all the systems involved. Hence, the digging, propulsion, AOCS and electrical power systems are covered in our study. Our article gives an overall view of our solution to bring back Martian rock samples on planet Earth.