

Mars Exploration 2009 – 2020

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The US science community has participated this year in a NASA led study of Mars exploration in the next decade beginning with the 2009 launch opportunity. An outcome of the study was discovery-responsive investigation pathways that address high priority science objectives. Investigation pathways are sequences of measurements and missions each focused on a different scientific question. The scientists' choice of which pathway to take would be driven by scientific results from earlier missions and the technical feasibility of specific missions among the options available. NASA's studies have also included interactions among the disciplines of science, technology and engineering to identify pathways achievable within constraints on technology readiness and program resources.

In this paper we will describe the science objectives and mission architectures under consideration for the next decade of Mars exploration. Particular emphasis will be given to the scientific requirements and implementation options for early sample return.