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Abstract

**The Jupiter System Observer Mission Concept:
Implementing the Scientific Investigation of the Jovian System**

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In response to NASA's Science Mission Directorate call for a study of the Jupiter System Observer mission concept, our team identified and evaluated science and mission architectures to investigate the major elements of the Jovian system. With an extensive tour including multiple close flybys of Io, Europa, Ganymede and Callisto, and a significant time in orbit at Ganymede, the mission would address a large set of Solar System Exploration Decadal Survey (2003) and NASA Solar System Exploration Roadmap (2006) high-priority objectives. With the engineering team, the SDT evaluated a suite of mission architectures and the science they enable to arrive at two architectures that provide the best science for their estimated mission costs. Those two architectures were given more complete analysis for a higher-fidelity characterization of the science to be achieved, the spacecraft and mission design, operations, mission cost, and the many other aspects of a space flight mission. The result was two mission concepts, both of which provide compelling Jupiter system science.

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