

Step 5: Sun-Solar System Connection Roadmap

Targeted Outcome to Capabilities to Implementation

Targeted Outcome: Phase 2005-2015, Technology

Develop technologies, data, and knowledge systems to improve future operational systems

Required Technology Investment Areas

Enabling high delta-V propulsion

Enabling the development of compact low-cost spacecraft

Enabling the development of the next generation of SSSC instrumentation

Enabling the return of large data sets from throughout the solar system

Enabling the visualization, analysis and modeling of solar system plasmas

Enabling Developments

Flight proven 40m class Solar Sails

Up to 150 Mbps data return, 30 simultaneous links

UV blind particle detectors

4k x 4k low-power focal plane arrays

x100 reduction in digital electronics power dissipation

70% reduction in system wide power consumption

High QE UV sensitive CCDs

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Implementation Phase 1: 2005-2015

Ground-based Solar Sail system validation

Optical Com Mars flight demo

Focused Instrument Technology Program

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Solar Sail flight validation

Three ground stations with 400 12m dish arrays

High Altitude Sounding Rockets

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