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Introduction

Small bodies record the chemical, physical, and dynamical processes that gave birth to and shaped the solar system. The great variety of small bodies reflects the diversity of both their genesis and their histories. The *DARe* mission conducts a critical test of how small body populations reflect a history of planetary migration and planetesimal scattering. This understanding is crucial for planning future NASA missions and placing current and past missions into context.

Mission Overview

The *DARe* mission is being proposed as a Discovery-class mission in response to the Discovery-13 Announcement of Opportunity February 2015 deadline. *DARe* will orbit multiple asteroids performing operations at multiple altitudes. *DARe* builds on previous successful missions using a high heritage spacecraft design taking full advantage of improved capabilities and previous mission experience. The *DARe* instrument complement likewise builds on successful high-heritage instrumentation from previous missions. The instrument complement fully accomplishes all mission goals with margin, enabling detailed characterization of the surfaces and interiors of our targeted asteroids.

DARe utilizes the latest advances in solar-electric propulsion to construct an extremely robust mission design capable of orbiting multiple asteroids. The *DARe* mission is enhanced with additional low-velocity flybys. *DARe* mission design adapts previous mission operations to efficiently achieve scientific objectives. Mission management follows successful models based on GSFC mission experience with *LRO*, *MAVEN*, and *OSIRIS-REx*. The *DARe* team includes NASA, university, academic, and corporate partners bringing a diversity of skill and experience to deliver high science return at low cost and risk.

Full details of the *DARe* mission concept will be presented.