



Mars Competed Scout Missions

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Abstract

The Mars Program institutes the Mars Competed Scout Missions in order to introduce science goals into the program not otherwise covered in the baseline plan. Mars Competed Scout missions will be Principle-Investigator (PI) led science missions. Analogous to the Discovery Program, PI led investigations optimize the use of limited resources to accomplish the best science and allow the flexibility to quickly respond to discoveries at Mars. Competed Scout Missions also require unique investments in technology and reliance upon Mars-based infrastructure such as telecomm relay orbiters.

I. Overview

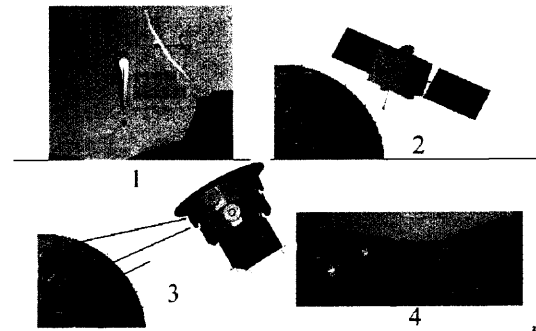
The NASA Discovery program is quite successful at using a competitive Announcement of Opportunity (AO) for PI-led missions to accomplish focused science. The Mars Program institutes Competed Scout Missions that use Discovery as a model. While using this model, several aspects of Competed Scout Missions are unique to Mars. To enable robust missions, the Mars technology program must make investments in key areas. And, since the missions will tend to be smaller and resource limited, there is reliance upon Mars infrastructure. In this context, Program infrastructure is telecom relay assets in orbit at Mars, common operations infrastructure, and possibly even a "ride" to Mars on another mission like a Mars lander. Taken together, focused science, technology, and Mars infrastructure allow a robust structure able to respond quickly to new Mars discoveries.

II. Program Structure

Mars Competed Scout missions are PI-led and use a two step selection process similar to the current NASA Discovery program. Current program projections have a Competed Scout mission launching in the 2007 Mars opportunity. Current technologies slated for development in Competed Scout missions included: small Entry/Descent/Landing (EDL) systems, lightweight propulsion components and tanks, lightweight communications equipment, and lightweight, highly capable science instruments. These technologies will enable Competed Scouts to provide focused science for low cost.

III. Possible classes of missions

Current and historical mission data point towards four classes of missions suited to Competed Scouts. One, small science orbiters. Two, aerial missions. Three, network missions. And, four, small landers/rovers.



IV. The Future

Current plans have the first Mars Competed Scout mission launching in 2007. The second mission, probably carried to Mars on a lander or orbiter, occurs in 2011. These competed missions provide focused science able to respond to startling discoveries sure to come.