Potentially Needed Recon Thrusts
From the International Mars Exploration Working Group

MARS SAMPLE RETURN

MAKE HISTORY: 1ST ROUNDTTRIP
Confirm mechanical properties of regolith/dust
(abrasiveness, oxidizing potential, particle size)
- Interactions with Surface Systems
  (suits, rovers, habitats)
- Potential Human Health Hazards
  (toxicity, respiratory, potential extant life)

WATER RECONNAISSANCE

Map Near-surface Ice
Identify Priority Targets for
Climatology/Astrobiology
and for ISRU
Assess Potential of Hydrated Minerals

For Science and Recon

- Ease of Access -

SPECIAL REGIONS DRILL

Search for Life
- for science
- for human use

Next-gen High-Res Imaging
(Visual, IR, Radar)
- Target 80% Planetary Coverage
- Compactness of Surface
- Support Change Detection
- Rock Count/Terrain Roughness
- Slope

Next-gen Communications
- Increased Data Rate
- Support Small Missions
- Support Change Detection
- Greater Access to Surface Assets (Data & Communications)

Next-gen Weather
(Orbital & Surface)
- Density Profile (EDL)
- Winds Aloft
- Potential Microbial Transport