

Potentially Needed Recon Thrusts

From the International Mars Exploration Working Group

MARS SAMPLE RETURN



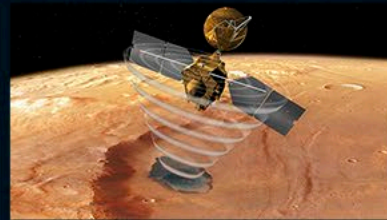
Achieve Decadal Priorities

MAKE HISTORY: 1ST ROUNDTrip

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 -

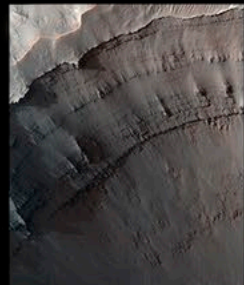
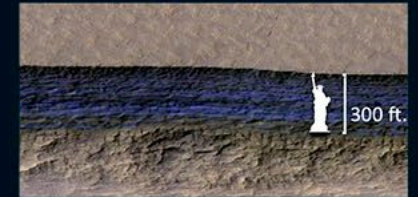
SPECIAL REGIONS DRILL



Search for Life

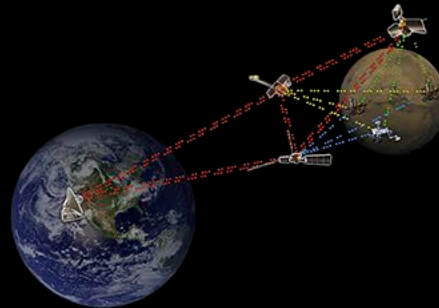


Characterize the Ice
- for science
- for human use



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