NASA PI-Team Masters Forum

Staying in the Box: Managing Critical Resources

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November 9, 2011
This Decade Mars Exploration

Launch Year

1996
Mars Global Surveyor (mission completed)
Mars Pathfinder (mission completed)

2001
Mars Odyssey

2003
MEP Rovers Spirit Opportunity
Mars Express Collaboration

2005
Mars Reconnaissance Orbiter

2007
Phoenix (mission completed)

2011
Mars Science Laboratory
Guidelines for Managing Critical Resources

• Know what is required, not just desired
  – “need, not want”—The Forbin Project
  – Get consensus with external players, communicate within team

• Remember that there will be unknowns that become known problems

• There will also be knowns that become problems
  – Give special attention early on to heritage items

• Be pro-active
  – Use your reserves (but don’t squander them)

• Balance your portfolio of risks appropriately
Critical Resources

- Mass, Power, Money, Schedule
- Value
  - Scientific, Technical & Programmatic Goals
- Mission Design
- Risk
  - Involved in almost all trades
  - Proactive as well as reactive management
- Knowledge
  - What do I know—what can I find out
  - Self/team: how do I manage when data are not in hand?
  - Heritage comes with liens—do I know what I have?
- Time
- Personnel: Managing / Working with People
  - Skill / Experience
  - Aptitude / Motivation / Attitude
  - Level of Effort/Stamina