“Technology Planning for Planetary Science Missions”

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Abstract
Planetary Science missions are often very technologically conservative when proposed. However, as the process of mission development occurs it often becomes necessary to incorporate new technologies. How do we decide what technologies to fund and how do we infuse these technologies? How do we evaluate the readiness of these technologies? What happens when missions must use new technologies? And how do we ensure that the mission is successful? These questions and others will be discussed with examples given from various planetary science missions. Technology infusion into Planetary Science missions will be compared with Earth and Astrophysics missions to give you a sense of the various options available to the mission community.

Biography
Dr. Patricia (Pat) Beauchamp is the Chief Technologist for the Engineering and Science Directorate at the Jet Propulsion Laboratory in Pasadena, California and also supports the NASA Planetary Science Division in developing their Technology Plan. Pat is on the executive steering committees of the Outer Planet and Venus Science Assessment Groups and has been responsible and/or involved in developing technology plans for the outer planets, Venus and small planetary bodies. At JPL she has managed the Planetary Instrument Development office, spent five years leading the Center for In-Situ Exploration and Sample Return (CISSR), and was project manager for the MICAS Instrument on Deep Space 1 mission. Prior to that she spent a decade leading research efforts at Aerojet ElectroSystems where her focus was on understanding chemical reactions on semiconductor surfaces and also surface ices at very low temperatures. Pat received her undergraduate degrees in Chemistry and Mathematics followed by her Ph.D. in Chemistry from the California Institute of Technology.