

**THE CAPABILITIES OF THE LOW TEMPERATURE MICROGRAVITY  
PHYSICS FACILITY FOR PERFORMING SCIENCE**

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The Jet Propulsion Laboratory (JPL) is developing the Low Temperature Microgravity Physics Facility (LTMPF). The LTMPF is a multiple user and multiple flight facility that will provide a long duration low temperature environment for performing state of the art experiments at the International Space Station (ISS). The LTMPF will fly attached to the Japanese Experiment Module (KIBO) Exposed Facility of the ISS, and the LTMPF will be ready for an initial flight in late 2005. The LTMPF is a self contained, reusable, cryogenic facility containing a 180-liter superfluid helium tank, two experiment packages, and electronics to provide both control and telemetry. During each mission, two distinct primary experiments will be accommodated. Secondary experiments utilizing the hardware built for the primary experiments will also be accommodated during each mission. The detailed technical capabilities related to the science enabled by the Facility will be presented to illustrate how the LTMPF will provide a platform for breakthrough scientific investigations requiring both low temperatures and microgravity conditions.