

LOW TEMPERATURE RESEARCH IN MICROGRAVITY

Donald M. Strayer

Jet Propulsion Laboratory, California Institute of Technology

Pasadena CA 91109

The recent flight of the Lambda Point Experiment has demonstrated the potential for performing precise tests of fundamental theories using low temperature techniques in Earth orbit. NASA's Microgravity Science and Applications Division has established a program of successor experiments to investigate other aspects of condensed matter physics using the same low temperature flight facility. This paper will describe the new investigations that have been chosen for flight experiments, and those selected for ground-based studies that could lead to flight experiments later. The flight facility, which has now flown twice on the shuttle orbiter, will also be described. We shall also describe opportunities for investigators to apply for support of scientific studies that could gain significantly by being performed in a low gravity environment.