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MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Experiments from Sub-Orbital to Orbital Platforms (3)

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COMMERCIAL SUBORBITAL VEHICLE MICROGRAVITY RESEARCH EXPERIMENT PAYLOAD STANDARDS

Abstract

There are a number of private enterprises that will soon be offering the opportunity for personal spaceflight. While the main thrust of their business seems to be focused on taking commercial passengers to the edge of space, vehicle designs are being carried out allowing for the possibility to carry experiment payloads to conduct suborbital research flights. This will provide the unique opportunity to execute short duration microgravity experiments at significantly lower costs than can currently be obtained. The focus of this paper is a survey that was executed to determine what is planned and what already exists in terms of research experiment accommodations (power, size, mass, human operated, cost, others) specifically on commercial suborbital vehicles currently in design and test. The results are compiled and analyzed to determine if what is being offered is sufficient or if there might need to be other accommodations designed into the flight vehicles to better accommodate microgravity experiments. An assessment of whether standard features are being offered is also presented along with recommendations for standardization if this has not already been done.