

HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Utilization & Exploitation of Human Spaceflight Systems (3)

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THE FIRST JAXA MICE EXPERIMENT IN KIBO OPERATIONS, ITS UNIQUE FEATURES AND
OPERATIONAL CONSIDERATIONS

Abstract

Since the JAXA Mouse Habitat Unit (MHU) was launched on H-II Transfer Vehicle (HTV) 5 toward the International Space Station (ISS) Kibo in August 2015, we have been preparing for the very first JAXA mammal experiment, a long term mice habitation in Kibo.

Japanese astronaut, Kimiya Yui, set up the new experiment payload "MHU" in the Cell Biology Experiment Facility (CBEF), conducted initial checkout with JAXA Flight Control Team (JFCT) and now ready for the mice experiment scheduled in this summer. We'll launch twelve mice on Space X-9 and conduct habitation in MHU for about 30 days.

JAXA mice experiment has several unique features compared to the other mice experiments in space, for example, MHU enables individual habitat (one mouse per cage) and CBEF can provide comparison environment between micro-G and artificial-G (1G) conditions in space. We will return mice to the ground in living condition for skilled researchers to dissect mice for detailed analysis on ground.

To support this unique experiment in Kibo, JFCT are preparing operations products with special care not only to achieve science success but also to satisfy animal welfare, considering what if the power outage, Ku telemetry outage, distressed animal care and so on.

In this paper, the JAXA mice experiment and equipment overview and how to accommodate science requirement and animal welfare during the real-time operations will be introduced.