

HUMAN SPACEFLIGHT SYMPOSIUM (B3)  
Governmental Human Spaceflight Programs (Overview) (1)

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JAXA'S INITIATIVE ON HUMAN SPACEFLIGHT PROGRAM FOR ISS AND BLEO

**Abstract**

In December 2015, Government of Japan decided to extend the participation in International Space Station (ISS) program until 2024. To maximize the benefits through Japanese Experiment Module (JEM) "Kibo" on ISS, JAXA is making a continuous effort to create various new capabilities for ISS utilization. JAXA astronaut Kimiya Yui stayed in ISS for half an year in 2015 and contributed to bring benefits to Earth. JAXA is promoting various functional mission such as small satellite deployment, calorimetric electron observation (CALET), and material exposure mission using Exposed Facility (ExHAM) on "Kibo". As an outcome creation in medical research region, JAXA enforces high-quality protein crystal growth experiment with Protein Crystallization Research Facility in "Kibo".

The international lunar vicinity mission would be very possible option for JAXA as a part of human space capability beyond low earth orbit (BLEO). Japan is discussing how to play an important role in the international cooperation for future space exploration program targeting the International Space Exploration Forum (ISEF) in Japan in 2017. As a core national RD agency of Japan, JAXA focuses on technology research for long-duration mission, partial gravity environment activity, and transportation. As key technology research for manned missions, JAXA stresses the importance of technology demonstration such as radiation protection, water recovery system, air recycle system, life science etc., which are demonstrated on JEM. Furthermore, based on HTV (H-II Transfer Vehicle) technology obtained from past missions, JAXA grapples with the development of the next generation HTV for servicing BLEO, and the return capsule as a re-entry demonstration.