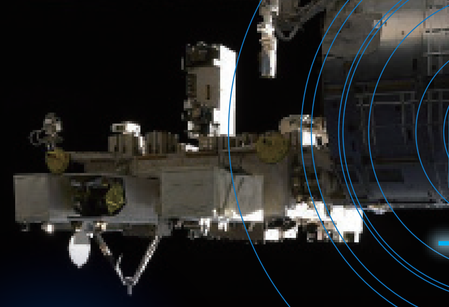


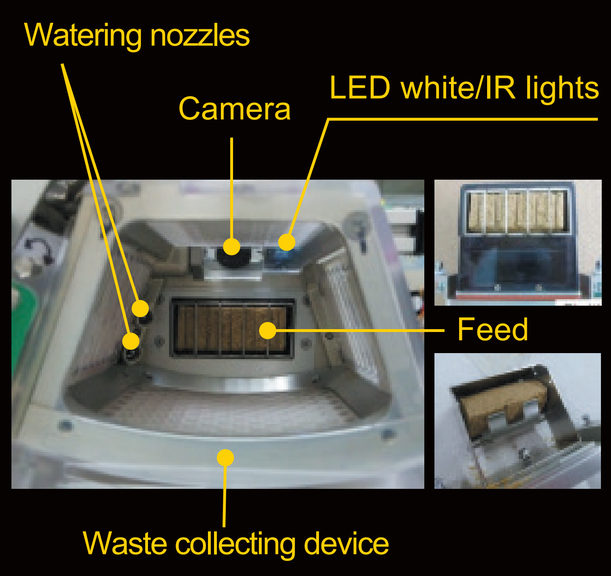
Mouse Habitat Unit (MHU)

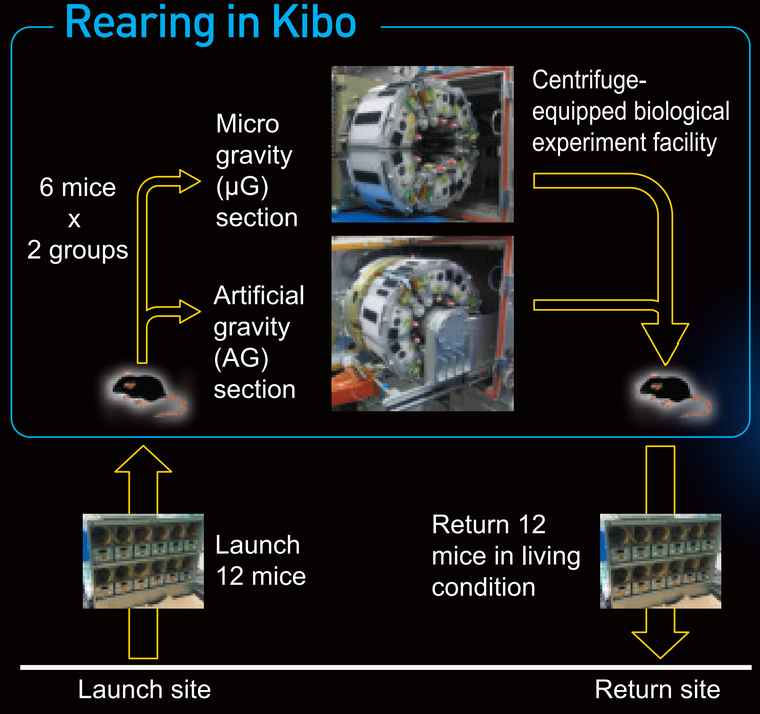
Feature

1. Comparison between microgravity and artificial gravity conditions
2. An individual habitat (one mouse per cage)
3. Return mice to the ground alive

Overview of Mouse Habitat Unit(MHU)

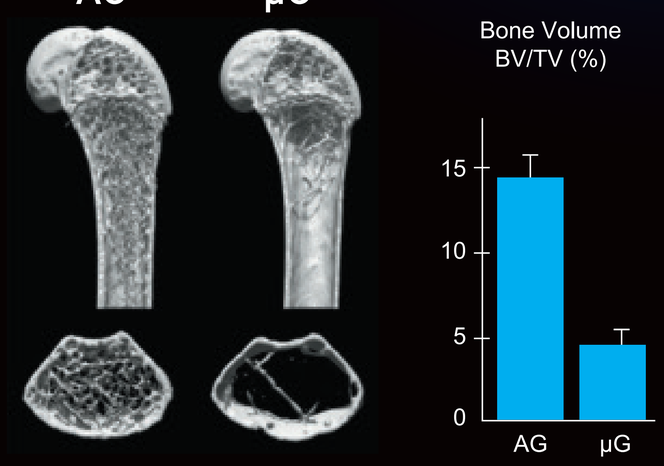
- Cage exchange every 30 days
- Cage maintenance every 5-7 days
- Real time monitor of every cage
- White/IR camera
- Surface cleaning wiper with washing water





Result of the first rearing using MHU, "Mouse Epigenetics"

Changes in bones



It was demonstrated that mouse studies in Kibo can contribute to research on age-related symptoms such as osteoporosis and sarcopenia.

References to JAXA rodent research mission(Space missions)

- Matsuda C *et. al. npj Microgravity* 2019 Jul 8;5(1)16.
- Horie K *et.al. Sci Rep.* 2019 May 21;9(1):7654.
- Tominari T *et.al. Sci Rep.* 2019 Apr 29;9(1):6614.
- Mao XW *et.al. Int J Mol Sci.* 2018 Aug 28;19(9).
- Shiba D *et.al. Sci Rep.* 2017 Sep 7;7(1):10837.

A first step toward expanding human activities into deep space.

World's first long-term habitation of mice on the International Space Station in a gravitational environment simulating the Moon!

Video image of mice in the Habitat Cage

Go to the web site to feel microgravity! Scan the QR code with your smartphone now!

Microgravity (μG)

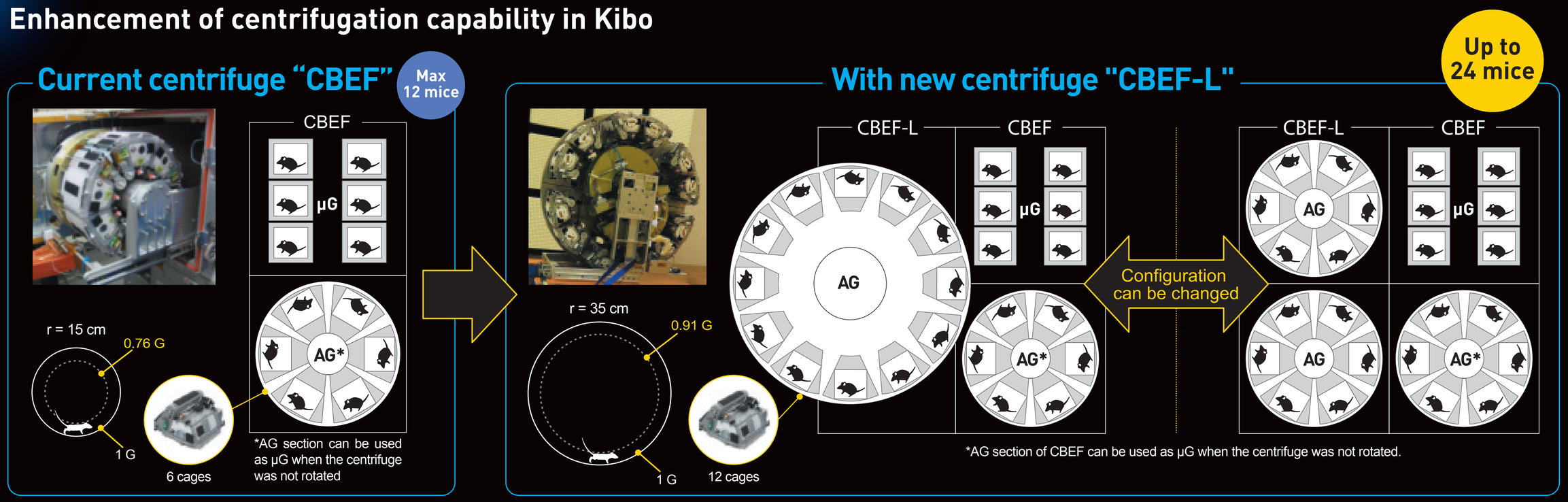
In the Moon gravity (artificial 1/6G)

Artificial Earth gravity (artificial 1G)

Future Mission! Target : Spring 2020

JAXA new centrifuge “CBEF-L” for various gravitational research.

Enhancement of centrifugation capability in Kibo



Less "head-to-foot" G-gradient

When a mouse rears up, the centrifugal force of the head becomes small. If the head of a mouse is 3.5 cm above the base in the short-radius (15 cm) centrifuge, centrifugal force at the head becomes 0.76 G; this effect is smaller (0.91 G) when using the long-radius (35 cm) centrifuge.