

Update on Japanese Participation in JUICE (Jupiter Icy Moons Explorer)

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JUICE (Jupiter Icy Moons Explorer) is ESA's L-class mission during COSMIC VISION 2015–2025 to Explore Jupiter Icy Moons. Although JUICE was originally planned to be launched by Arian-5 in May-June 2022, it was announced that the launch would be postponed to August-September 2022 in the spring of 2021. The launch was further postponed to April 2023 due to the global COVID-19 outbreak and other factors. Based on the mission profile of the new launch window in April 2023, JUICE will be inserted into Jupiter's orbit in July 2031 after more than 8 years of interplanetary transfer with Earth/Moon-Venus-Earth-Earth gravity assists. JUICE will observe the three Jupiter icy Moons, Europa, Ganymede, and Callisto, which may have subsurface ocean under the icy crusts, and will be the world's first Icy Moon orbiter when it is inserted into Ganymede orbit in December 2034. The nominal mission of JUICE will end in September 2035 after observing the largest Icy Moon in the solar system: Ganymede in detail.

Japan is participating in JUICE by providing part of the instrument hardware for three of the instruments: RPWI (Radio and Plasma Wave Investigation), GALA (Ganymede Laser Altimeter), and PEP (Particle Environment Package)/JNA (Jupiter Neutrals Analyzer) from ISAS, and one instrument, SWI (Submillimeter Wave Instrument) from NICT. ISAS is also participating in two instruments, JANUS (Jupiter Camera) and J-MAG (Jupiter Magnetometer), as a science team member. As for the hardware provided by Japan, delivery of all hardware including Flight Models and Flight Spares to Europe was completed by August 2022.

JUICE is scheduled to be launched from Kourou in French Guyana, South America, during the launch window of April 4 to 29. It has been almost 10 years since the JUICE mission started, and the mission is still scheduled to continue for another 15 years. The development of the hardware will be completed with the post-launch instrument check, and science activities will be ramped up in preparation for the future observations in the Jupiter system.

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