

JAXA Future Programs for Scientific Planetary Exploration

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After the unification of old ISAS, NAL, and NASDA to JAXA, we discuss the short / medium / long term visions of the Japanese space activities. As a part of it, future scientific planetary exploration programs have been argued in Japanese scientific communities.

Japanese planetary program has been organized under the ISAS before and now ISAS/JAXA. It was started by 'Sakigake' and 'Suisei (Planet-A)' mission to Comet Halley (1985-), and followed by 'Hiten' mission to the Moon (1990-) and 'Nozomi (Planet-B)' mission to the Mars (1998-2003). Unfortunatelly, the last one could not enter to the Mars orbit, but those heritages are expanded to 'Hayabusa (Muses-C)' mission to the asteroid Itokawa (2003-) which will arrive to the target in the summer 2005, and be back to Earth in 2007. We are also in the developing phase of 'Selene' mission to Moon, 'Planet-C' mission to Venus and 'BepiColombo / Mercury Magnetospheric Orbiter (MMO)' mission to Mercury [with ESA]. 'Lunar-A' mission is also still under investigation.

Based on those past and current activities, we are now discussing several new programs based on following categories: 1) Investigation of the planetary environment: magnetosphere / ionosphere / atmosphere: Venus, Mars, and Jupiter, 2) Investigation of the origin materials of the solar system: Asteroids, 3) Investigation of the surface & interior: Moon, Mars, etc. We will introduce the overview of the short / medium / long term strategies of JAXA planetary science activities, and present the development status of the instrumentation and key technologies supporting those activities, which are also strongly connected to the Earth-orbiting and Solar-Terrestrial science missions.