

## SMALL JOVIAN ORBITER MISSION : model payload of in-site instruments

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Small Jovian orbiter accompanied with this mission is planned for the magnetospheric and auroral studies of Jovian Magnetosphere. The planned small Jovian orbiter in this project is the pathfinder for such full-scale future Jovian mission.

This mission will use the polar orbit covering the polar region in both hemispheres. Considering the orbital period (~230 days) and the expected nominal life (about 1 year), we consider that this mission will be equivalent to the 3 times flybys.

Under these restrictions, we set the main scientific objective as the in-situ observation of whole Jovian magnetosphere and auroral regions, for the quick-look observation of the vicinity of the most active objects in the Solar system. It will enable us to study (1) magnetosphere-ionosphere coupling in the Jovian-type magnetosphere driven with planetary rotation energy and (2) structure, dynamics, and mechanisms of the strongest particle accelerator in the solar system. Since this probe will stay in the solar wind near Jupiter for a long time, it will also be expected to act as a solar wind monitor for the studies of ground-based observations of Jovian auroral and magnetospheric activities.

In the present assumption, the expected resource for the scientific payloads is 4kg (mass) and 10W (power). The payload is now in considered under the heritage of the instruments developed for BepiColombo Mercury Magnetospheric Orbiter. Expected instruments are as follows: In-situ instruments for the Jovian flyby and the monitoring of solar wind conditions near Jupiter: magnetometer, high-energy particle detector, low-energy particle detector.