

## Design of an ion mass spectrometer for the Comet Interceptor mission

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Comet-solar wind interaction provides us with opportunities to study plasma structures and phenomena, which are otherwise difficult or impossible to observe in other solar-system objects. Although several flybys and rendezvous have been performed for several comets (e.g., 1P/Halley, 21P/Giacobini-Zinner, 67P/Churyumov-Gerasimenko, etc), simultaneous multi-point measurements have not been achieved so far, and thus the large-scale structures of plasma boundaries around comets are unclear. The Comet Interceptor mission, aiming at a dynamically-new comet or an interstellar object, will provide the first such measurements, in collaboration between ESA and JAXA. In this mission, Japan will provide a daughter spacecraft, whose closest approach will be <1,000 km, allowing crossings of several kinds of plasma boundaries. Plasma suite onboard the Japanese daughter spacecraft consists of an ion mass spectrometer and a magnetometer to obtain the details of plasma boundaries as well as other plasma processes around a comet. Here we present the design of ion mass spectrometer onboard Japanese daughter spacecraft of Comet Interceptor.