

次期月探査計画 SELENE-2 の現状と科学搭載機器の開発状況 (3) Present Status of the next lunar landing mission SELENE-2 (3)

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SELENE-2 project has been started from 2007 as the first Japanese lunar lander. The main prior object of the SELENE-2 mission is to develop safe and precise landing system on middle to large planets and satellites such as the Moon and Mars for a future lunar and planetary exploration. Another key technologies under investigation are surface mobility by a rover, and long night survival module without using nuclear power. In addition, some instruments for lunar science and future utilization have been so far investigated.

The Strategic Headquarters for Space Policy of Japanese government established "Basic Plan for Space Policy" in June, 2009. Following the plan, a concrete strategy of Japanese lunar exploration had been discussed in "Study group for lunar exploration" of Japanese government which was organized from August, 2009 to July, 2010. The final report of the group indicates that a spacecraft should land on lunar surface in around 2015 to promote lunar exploration using advanced robot technology in 2020. Despite of this result, the SELENE-2 is delayed and still remains as the Phase-A study. Presently, the earliest launch date is 2018 when we successfully proceed to Phase-B within the fiscal year 2013.

One of our meager but important progresses are that technological development of candidate instruments, especially, we have developed seismometry system and camera system, both of which were considered to be main scientific instruments for geophysical and geological instruments. As for the seismometry system, we have almost successfully performed interface tests which were done by international collaboration. Development of a sensor of the visible to near infrared camera system, on the other hand, also conducted good performance under the suitable temperature condition on board the rover.

We are preparing for the upcoming review board to proceed to phase-B study. In order to achieve it, we are under investigation to make high reliable system, and realistic scenario of the mission profile assuming some appropriate landing sites which have been selected among the Japanese lunar scientists. Further technical development is also to be aggressively continued for reducing risks.

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