

## Current Status of Post Hayabusa Missions

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It is about one year before Spacecraft Hayabusa will come back to the earth, so this asteroid sample return mission will soon reach its climax. At the same time, the studies about the post Hayabusa missions are also come to the very important stage now.

As it has been mentioned in many occasions, there are several different types in asteroids, and we can understand asteroids and the origin of the solar system by exploring successively several asteroids that belong to typical types of asteroids. Important progress will be made not by only one exploration but by programmatic explorations. Following this idea, we have been studying Hayabusa 2 and Marco Polo missions.

As for Hayabusa 2, we missed the launch windows in 2010 or 2011, which we were considering at the beginning. So now we are reconsidering for the launch window in 2014 and after. The target asteroid has not changed and it is C-type asteroid, 1999 JU3. We finished the ground based observation of this asteroid. Also we finished basic studies about the problems that Hayabusa had. Therefore, we can say that we are ready now and we can start Hayabusa 2 at any time. At first, Hayabusa 2 was referred as the copy machine of Hayabusa, but now it is considered as new spacecraft, because rather long time has passed since we made Hayabusa spacecraft. Of course, we depend much on the technology and experiences of Hayabusa.

As for Marco Polo, it is the joint mission with Europe and the target object is much more primitive ones. The assumed targets are dormant comet or D-type asteroids, etc, which have orbits that reach beyond the asteroid belt. Marco Polo will have a large lander as well as small rover like MINERVA in Hayabusa mission, so we can get much data by in situ observations.

The technical and science investigations for these two missions are being done steadily, but we have other issues such as budget, schedule, and international collaborations. In this talk, we summarize the current status of these post Hayabusa missions.