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MELOS1 Mars Landing Exploration Plan

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We have been planning MELOS which is to challange various Mars sciences with a combination of orbiter(s) and lander(s). MELOS can be done as a series of missions by sequentially launching missions of which sciences need not to be simultaneous. Therefore, current planning focuses MELOS1. In general, the larger a mission is, more difficult to get launched. Due to the recent situation, we simplify the MELOS1 mission as a combination of a lander plus a cruise stage, not an orbiter. We need to rely on any orbiter at Mars to send the data back to the earth. Because the U.S.A., after successful landing of Curiosity, is active again with Mars, and European and Russian have ExoMars mission, assuming an orbiter's availability at the time of our arrival may not be unreasonable.

Although the lander's configuration is still somewhat flexible, current plan is to have a 40-50 kg rover with science payload including the life-detection experiment. Landing on Mars is a necessary step for the space exploration, and it is to enable searching extraterrestrial lives. If discovered, it should undoubtedly be the biggest discovery in science. The surface area of Mars is so wide and so different from one place to another. Yet, we had only 7 landers, basically at places similar to each other. The best places for life-detection experimetn, fluvial feasures or mud volcanoes (may be methane hot spots) are still intact. In MELOS1, we will perform high-precision landing to such a place and will search for lives for the first time.

The current status of planning will be presented. In addition, the position in Japan's future missions will be discussed with audience of greater variety.