Hayabusa2's Latest Success A Challenge to Next Generation of Scientists and Researchers

Japan's spacecraft Hayabusa2 succeeded in making a second landing on the asteroid Ryugu, a space rock orbiting between Earth and Mars, at about 10 A.M. on July 11, Japan Time. And the likelihood that the space probe successfully accomplished its task of scooping up pristine subsurface materials from the asteroid is quite high.

The flawless touchdown on Ryugu — about 250 million kilometers (about 15.5 million miles) away from Earth — was the second by Hayabusa2 in 2019. The first touchdown in February also achieved its highly difficult mission of blasting an artificial crater on the asteroid's surface, exposing uncontaminated subsurface materials, expected to clarify the origins and development of the solar system.

Japan has thus demonstrated to the world the high quality of its technology in the field of asteroid probes. We heartily applaud the Japan Aerospace Exploration Agency (JAXA) team for their “courage to take on challenges.”

The success of Hayabusa2 comes from the team's spirit of “Let's do everything we can,” inherited from their predecessors who undertook the first JAXA Hayabusa (falcon) project.

Reportedly there was some anxiety within the team about the risks accompanying the second Ryugu landing. Valuable materials gathered during the first Hayabusa2 landing would be lost if the spacecraft was unable to return to Earth because of a problem with the second touchdown.

Yuichi Tsuda, the Hayabusa2 project manager, however, dared to give the go-ahead for the second landing at the last minute. As he later explained, “Given that the very mission of Hayabusa2 has been the confrontation of consecutive challenges on the strength of our accumulated technological ability, not going for the second landing was not an option.”

The first generation of Hayabusa narrowly managed to return successfully to earth in 2010, after miraculously weathering such grave crises as the breakdown in its ability to communicate and the failure of all its engines. Hayabusa2 built its mission on all that was learned from the problems overcome by the first generation probe. In turn, it succeeded in landing twice on the asteroid Ryugu and accomplished the new task of creating an artificial crater on the asteroid's surface.

The courage of the first generation Hayabusa team as it faced formidable challenges — yet maintained the confidence to move forward — has been handed down to its successors, the Hayabusa2 team.

For Hayabusa2, however, the most important task has yet to be completed: returning to Earth in late 2020, after the 2020 Tokyo Olympics and Paralympics. We sincerely hope the team will do its best to ensure the spacecraft's safe return to Earth with its invaluable samples from the asteroid.

Thanks to its two successful landings on the asteroid, Hayabusa2's treasure box of samples from Ryugu must be bursting at the seams. This treasure is expected to shed light on the origins of the solar system and life itself dating back some 4.6 billion years.

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Hopefully there will be no “dramatic miracles” such as those encountered by the first generation Hayabusa. However, in the event unforeseen contingencies do arise, we trust the team will calmly overcome them.

It is indeed a significant accomplishment that, while Japan's prowess in science and technology has been waning in recent years, Hayabusa2's impressive feats have increased Japan's international esteem in the field of space exploration. We hope this will lead to a revitalization and resurgence of all sciences for the nation as a whole.

It is the younger generation of scientists and researchers, including junior and senior high school students, who will carry forward Japan's contributions in the future. We hope they will learn from the Hayabusa teams the importance of having the courage to take on challenges.

It goes without saying that government policies supporting and encouraging the next generation to take on challenges are of vital importance.

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はやぶさ２　「挑戦する勇気」に学ぼう

探査機「はやぶさ２」が小惑星「リュウグウ」への２回目の着地に成功した。太陽系の初期の状態が保存された地下物質の採取にも、成功した可能性が高いという。

地球から約２億５千万キロ離れたリュウグウで、はやぶさ２は２度の着地、人工クレーター作製という困難なミッションを見事に成し遂げた。

小惑星探査における日本の技術の高さを、さらに確固たるものにして世界に示した。宇宙航空研究開発機構（ＪＡＸＡ）の開発、管制チームの「勇気ある挑戦」を大いにたたえたい。

はやぶさ２の快挙を支えてきたのは、初代のはやぶさチームから受け継いだ「できることは全部やる」という精神であろう。

２回目の着地については慎重意見もあったという。重大なトラブルで帰還不能になれば、最初の着地で採取した貴重な物質も失ってしまう。だが、津田雄一プロジェクトマネージャは２回目の着地を前に「はやぶさ２のミッション自体が、積み上げた技術による挑戦であり、やらないという選択肢はなかった」と語っている。

初代はやぶさは、通信の途絶や全エンジンの故障という絶体絶命の状況を、あらゆる可能性に挑むことで乗り越え、奇跡的に帰還を遂げた。はやぶさ２は初代の失敗経験を生かして２度の着地を成功させ、人工クレーター作製という新しいミッションも達成した。挑戦する勇気、困難を克服した自信が受け継がれている。

はやぶさ２にはまだ、最も重要な任務が残っている。東京五輪後の来年末に予定される地球への帰還である。無事帰還に向けて、引き続き万全を期してほしい。

２度の着地成功で持ち帰る「玉手箱」は大きく膨らんだ。４６億年前の太陽系や生命の起源に誘（いざな）ってくれるだろう。初代のような「奇跡のドラマ」はない方がいい。たとえ不測の事態が起きても、平然と乗り越えてもらいたい。

日本の科学技術が低落傾向にある中で、はやぶさ２が宇宙探査で世界に存在感を示した意義は大きい。日本の科学全体の活性化、再生につなげたい。

若手研究者や中高生など日本の将来を担う世代には、はやぶさチームから「挑戦する勇気」の大切さを学びとってほしい。

言うまでもなく、挑戦を支える政策が国には求められる。

出典:【主張】はやぶさ２ 「挑戦する勇気」に学ぼう
https://www.sankei.com/column/news/190712/clm1907120001-n1.html

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