

Successful launch of satellite Clark sat-1, with high schoolers involved in development, on Friday, November 10 from the Kennedy Space Center. The debriefing on launch and operations to be held on Monday, November 27.

First chapter complete of Space Education Project jointly run by Clark Memorial International High School, the University of Tokyo, and Space BD. Now moving on to second chapter aimed at operations.



Handover of satellite Clark sat-1 to JAXA (Clark Memorial International High School students & Space BD employees)

Hokkaido and Tokyo—Clark Memorial International High School, the University of Tokyo Graduate School of Engineering, and Space BD are running the Space Education Program with the goal of fostering future leaders by developing an inquiry-based learning program on the theme of space where high school students engage with satellite development and launch.

As a part of this project, the satellite Clark sat-1, which was completed in March 2023, was launched from NASA's Kennedy Space Center at Cape Canaveral, Florida in the United States at 10:28 on Friday, November 10, 2023 (20:28 on November 9 local time). Ground footage of the moment of launch was watched over in public viewings that were held at Clark Memorial International High School's educational facilities around Japan. All participants across Japan shared in the joy of the successful launch.

Clark sat-1 was launched into space and delivered to the International Space Station (ISS), and released from the ISS Experimental Module Kibo. Operations in space will begin approximately one month after release.

Hence a launch debriefing is scheduled to be held online on Monday, November 27, 2023. This debriefing will cover the events through launch, future operations, and the educational results related to this space education project.



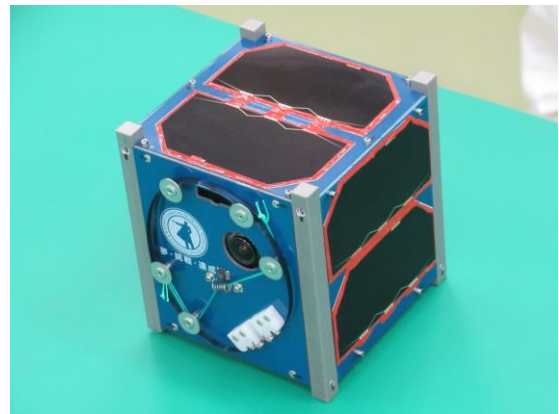
On the launch day public viewings to watch over the moment of launch were held at educational facilities around Japan.

■ Project overview

The aim of the Space Education Project is to develop an educational program to foster leaders for our future society by having high school students gain interest in space through experiencing satellite development for themselves and taking the lead in the execution of the mission and its operations. In the process, they will grow into future leaders who are able to consider and implement solutions to a variety of issues from a space perspective. Through satellite development and operation, the program will nurture the students' interest in space development and their initiative to successfully solve problems, while at the same time developing their non-cognitive skills that will be essential for them to be active members of our future society.

■ Satellite Clark sat-1

Clark sat-1 (Nickname: Ambitious) is a 1U size satellite, 10 cm square and weighing approx. 0.94 kg. Development began in October 2021, and was completed in March 2023 following various application procedures and JAXA reviews. The satellite will now be handed over to JAXA. To operate this satellite, a control station was built on the grounds of Clark International. In the course of the satellite development process over approx. one and a half years, the students of Clark International gained basic knowledge of space development, enhanced their teamwork, and learned how to ask questions of their own accord and solve problems. The students learned about the most up-to-date space development from Professor Nakasuka of Tokyo University, participated in various workshops developed by Space BD on the theme of space, visited companies engaged in space businesses, and had other learning experiences not limited the classroom.



■ Satellite operations

The satellite will now aim to complete the space mission proposed by the students. The students deliberated and

decided on the following four stages for their mission.

Post-Launch Mission

- 1. Minimum Success** Successful launch from ISS
- 2. Full Success** Successful communication with smallsatellite
- 3. Extra Success**
 - 1) Use camera on satellite to take photos of Earth environment
 - 2) Receive audio and illustration data from the satellite

*Extreme success (Chance of success is very low, but students wished to take on the challenge) Take photos of space debris

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To achieve the above mission and promote amateur radio technology, future operations will be conducted on a wide scale at the control station set up on the Clark International grounds by students who have obtained amateur radio operator licenses, with the support of Space BD and Clark International faculty members.

As soon as the satellite is operational, the Space Exploration Club plans to use the photo images received from the satellite to create mosaic art on the theme of the SDGs, and to send out encouraging audio messages to organizations and individuals working on Earth and space environmental issues. All students at Clark International will be engaged in inquiry-based learning activities to consider potential use of the satellite.

■ About Clark Memorial International High School

Clark Memorial International High School was named after William Smith Clark, who was a professor and leader of agricultural education in the late 19th century. His parting words to his Japanese students became a nationally known motto in Japan 'Boys, be ambitious.' Combining daytime schooling with correspondence programs, we have introduced a new approach to secondary education, which has now spread nationwide.

■ About Intelligent Space Systems Laboratory (Nakasuka Laboratory)

The Nakasuka Laboratory developed and launched the first CubeSat globally in 2003, and it has led this field, launching 13 microsattellites to date. The microsattellites, which can be developed with lower costs and shorter periods than medium- and large-sized satellites, bring new players such as universities, startups, local governments, and emerging countries to the space industry. It also allows people to utilize space in new ways. In this era of microsattellites, the University of Tokyo contributes to the industrialization of space through research and the spin-off of space startups. The juice can-sized simulated satellite CanSat and microsattellites are also used for engineering education, with students allowed to develop independently. Graduates are active in many fields, including at JAXA.

■ About Space BD

We at Space BD are a one-stop provider of solutions for those in the space utilization field. Not only can we deliver payloads to space by a variety of methods and facilitate the use of International Space Station assets, but we can also assist with everything from business plans to hands-on technical operations. As of November 2023, Space BD's performance record marked over 70 satellite projects and over 450 orders.