CubeSat deployment from ISS/Kibo

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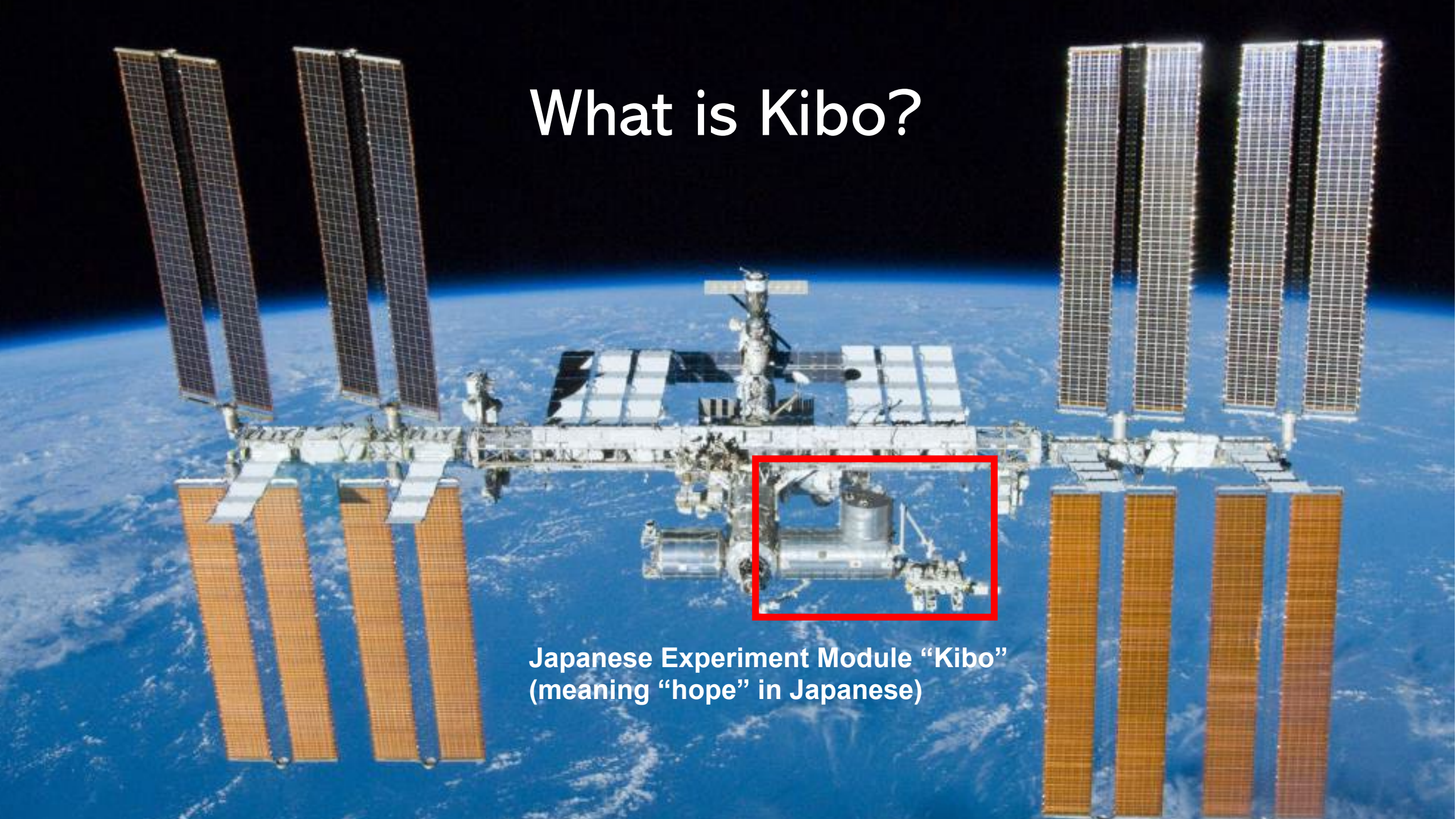
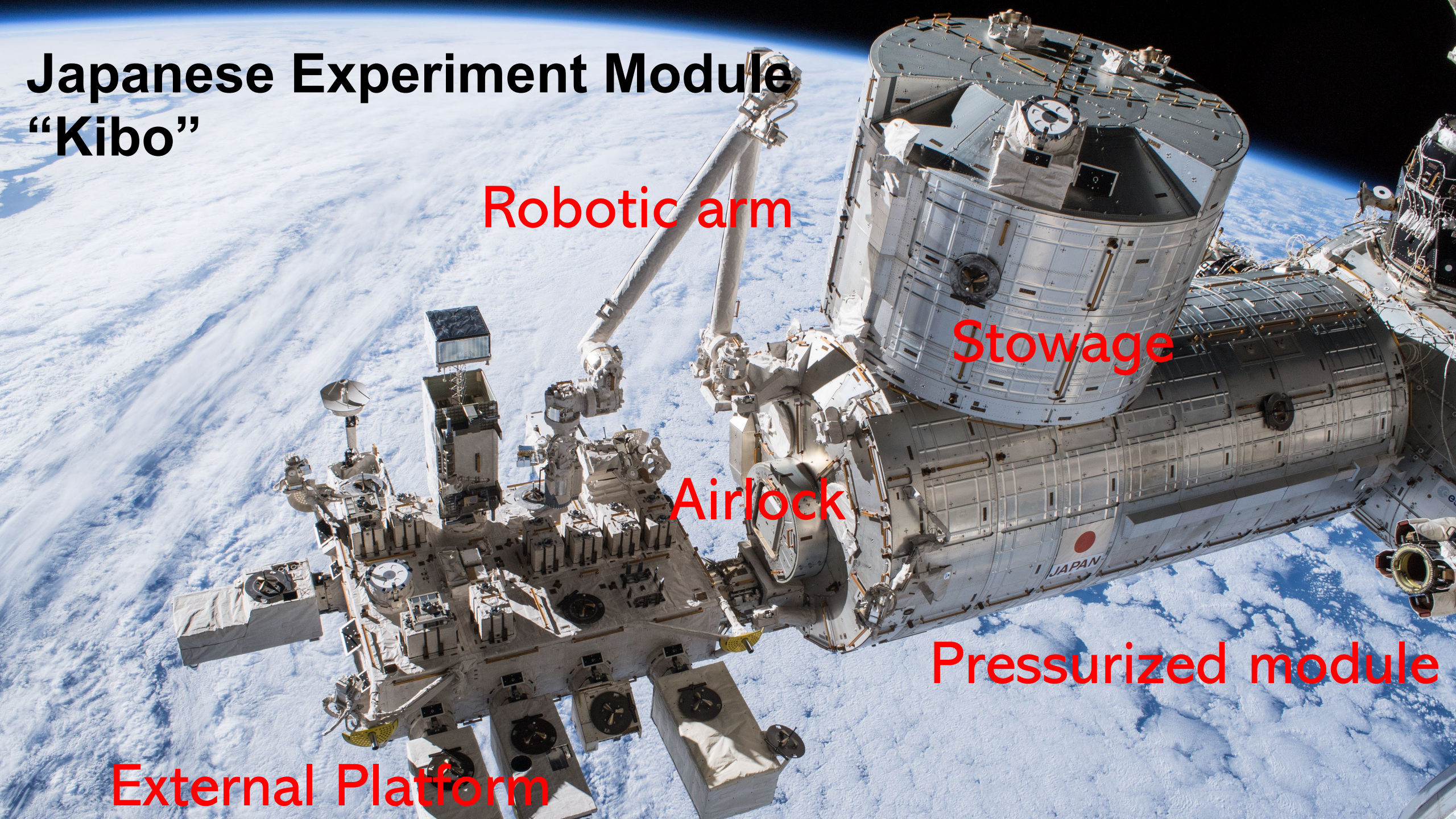
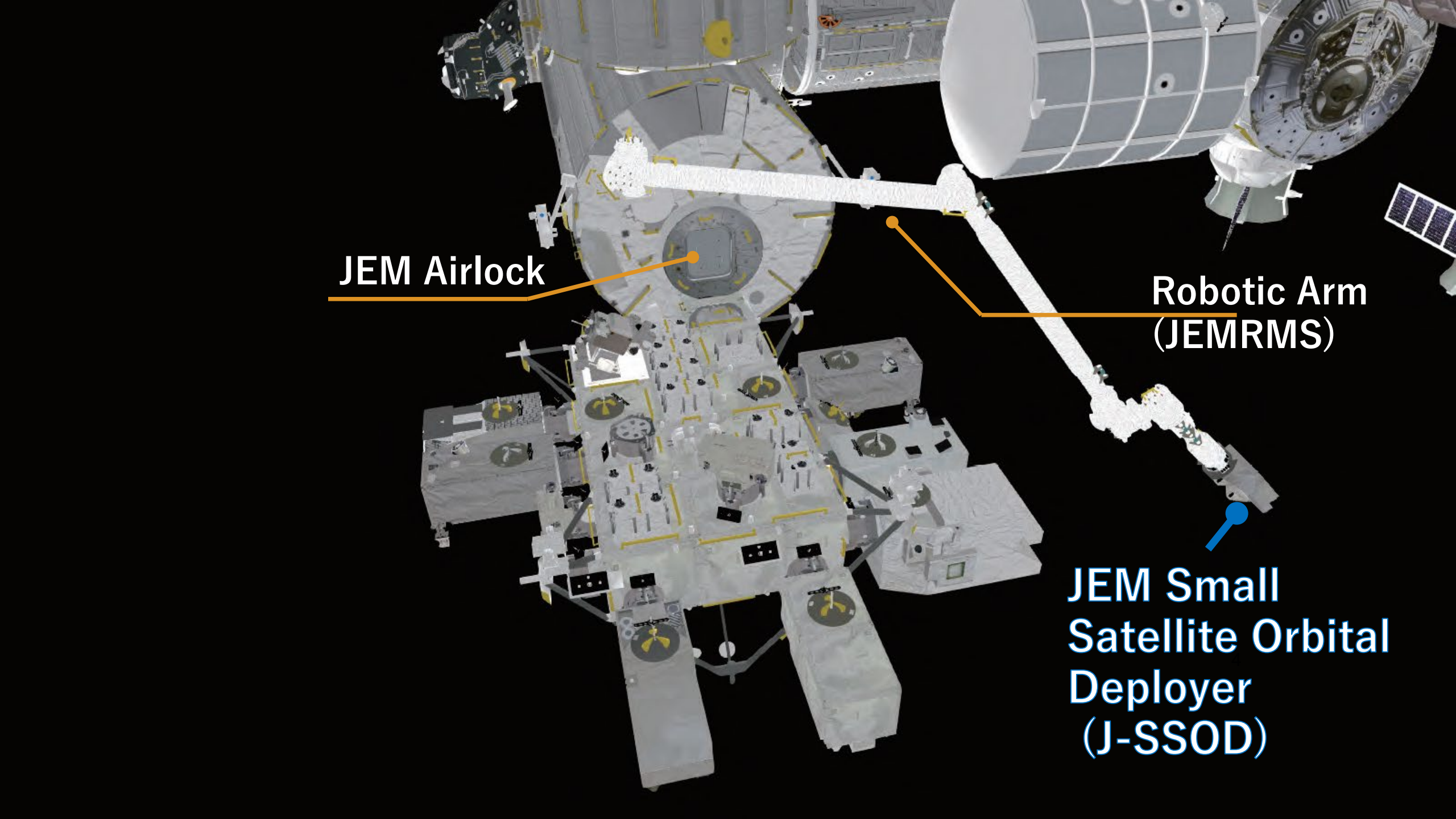
What is Kibo?



Japanese Experiment Module “Kibo”
(meaning “hope” in Japanese)

Japanese Experiment Module “Kibo”

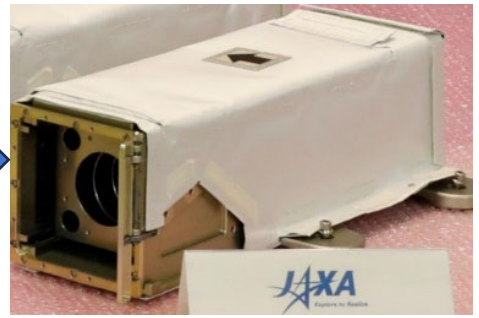



JEM Airlock
Robotic Arm
(JEMRMS)
JEM Small
Satellite Orbital
Deployer
(J-SSOD)

J-SSOD

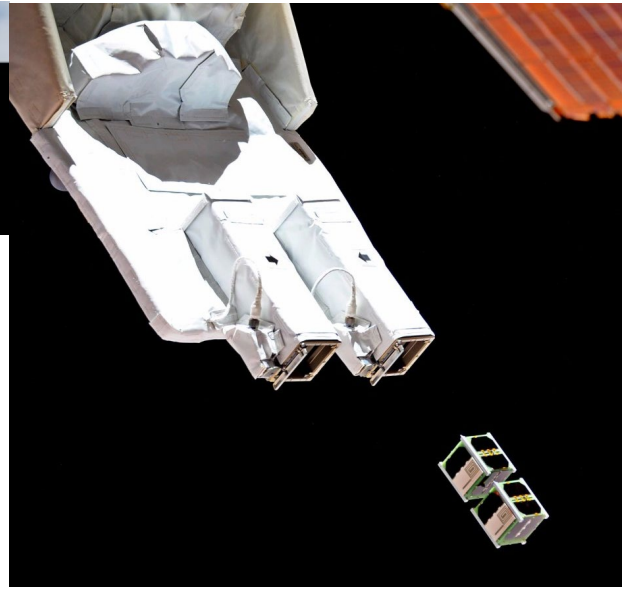
JEM Small Satellite Orbital Deployer

CubeSat

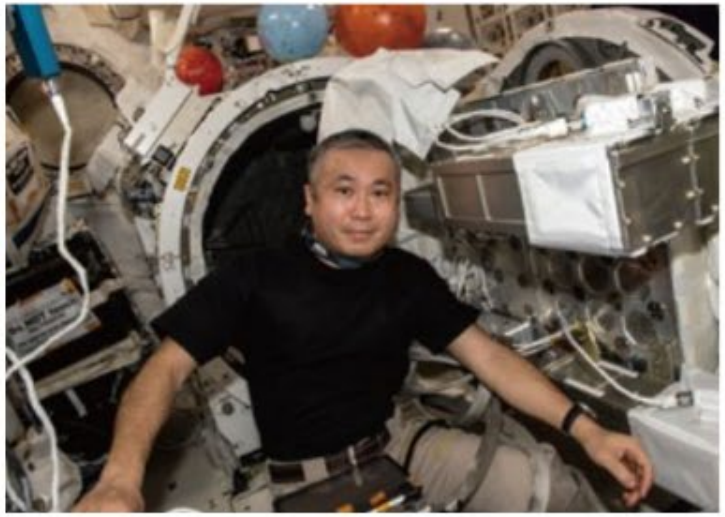


J-SSOD Satellite Install Case

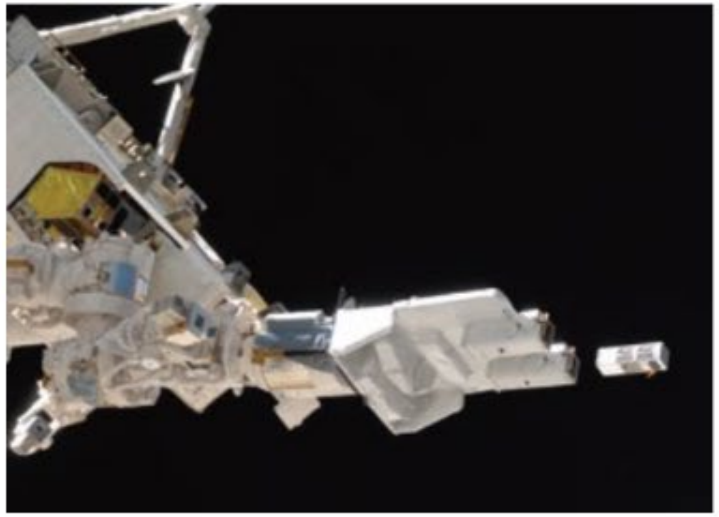
Cargo Transfer Bag



1 The satellite install case which installs CubeSats is stowed in a soft-cushion bag for shipping. The satellite install case is launched by a cargo transfer vehicle to ISS.



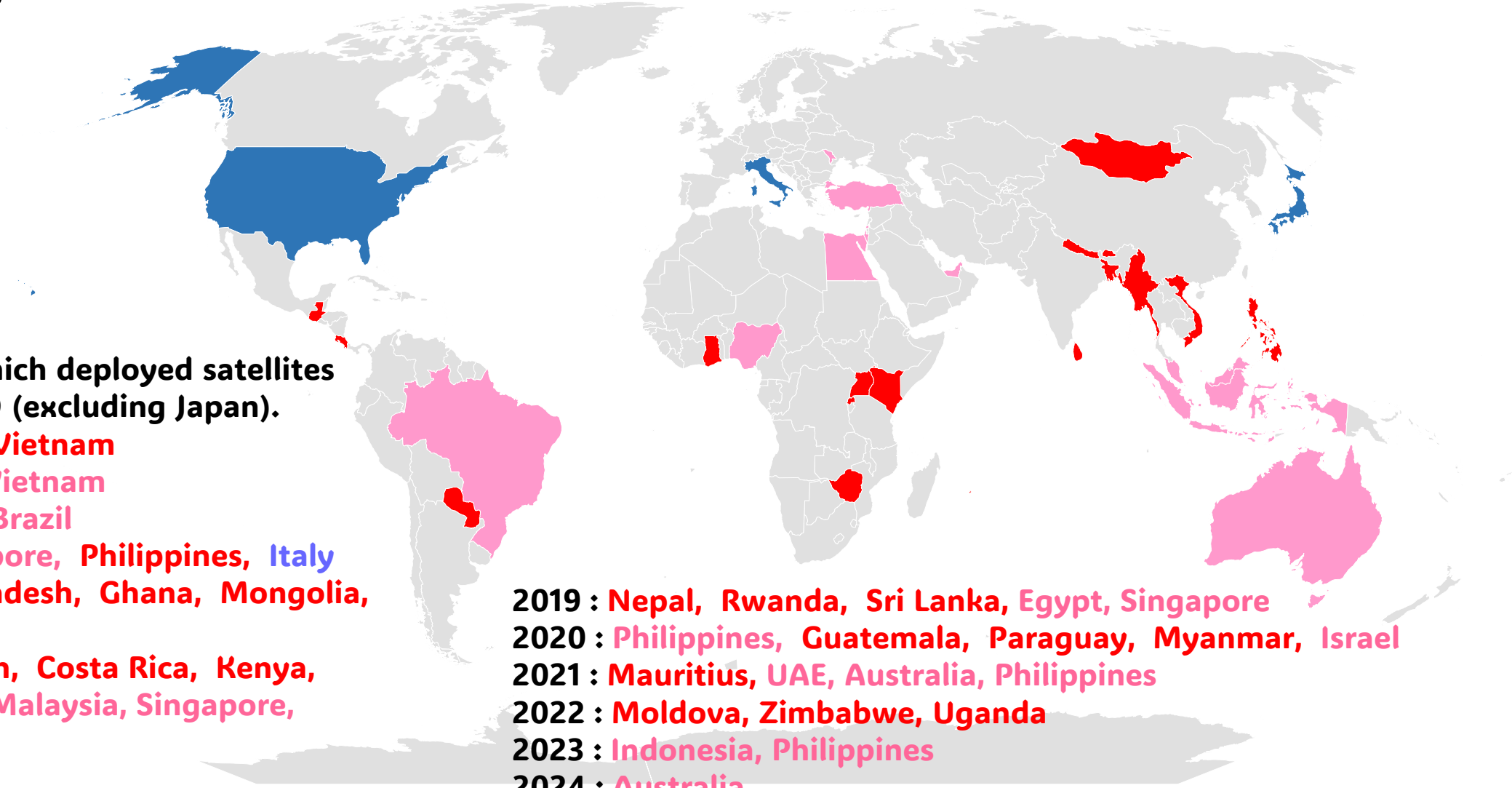
2 The satellite install case is installed on the MPEP by the crew member in Japanese Experiment Module "Kibo", and then transferred from the airlock to the outside.



3 The robotic arm of "Kibo" holds the MPEP to transfer it to the release point. The satellites are deployed by a command signal sent from ground.

First CubeSATs deployed from ISS (2012, Oct). “WE WISH”, “RAIKO”

Since 2012, 91 CubeSats from 32 countries were deployed using J-SSOD.



Countries which deployed satellites using J-SSOD (excluding Japan).
2012 : USA , Vietnam
2013 : USA, Vietnam
2014, 2015 : Brazil
2016 : Singapore, Philippines, Italy
2017 : Bangladesh, Ghana, Mongolia, Nigeria
2018 : Bhutan, Costa Rica, Kenya, Philippines, Malaysia, Singapore, Turkey

2019 : Nepal, Rwanda, Sri Lanka, Egypt, Singapore
2020 : Philippines, Guatemala, Paraguay, Myanmar, Israel
2021 : Mauritius, UAE, Australia, Philippines
2022 : Moldova, Zimbabwe, Uganda
2023 : Indonesia, Philippines
2024 : Australia

■ 1.First Satellite, Non-ISS Partner ■ 2.Non-ISS Partner ■ 3.ISS Partner

Capacity building through J-SSOD

UNOOSA

Collaboration with UNOOSA
(United Nations Office for Outer Space Affairs)

Collaboration with UNISEC
(University Space Engineering Consortium)

UNISEC JAPAN
University Space Engineering Consortium

Kibo CUBE 1U

- Program in collaboration with UNOOSA
- To provide 1U size CubeSat deployment opportunities for Access to Space for All

J-CUBE 1U~3U
(Fee-Based)

- To provide more challenging satellite deployment opportunities for various countries in collaboration with Japanese universities

1U ~ Wide 6U
and
50kg satellite

Deployment is provided by two service providers.
1. Space BD Inc.
2. Mitsui Bussan Aerospace Co.Ltd.

Kibo CUBE Academy

- To provide opportunities for educational aspects through satellite lifecycle
- Sustained international contribution by construction of relation in various countries and university in Japan

The free lectures are posted here !

https://www.unoosa.org/oosa/en/ourwork/access2space4all/SatDevTrack_Webinars.html#Tag1

LECTURE 0

Introduction to KiboCUBE Academy (pdf and video) *updated in June 2025

LECTURE 1

Introduction to Small Satellite Mission and Utilization (pdf and video) *updated April 2023

LECTURE 2

CubeSats for Capacity Building (pdf and video)

Live sessions are also held a few times a year.

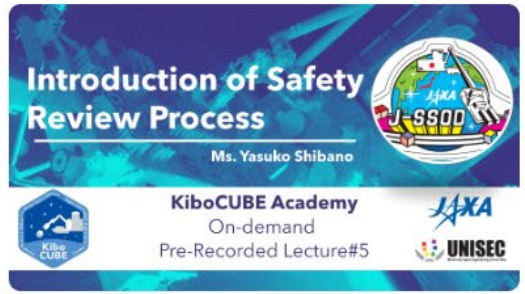
LECTURE 3

Overview of Project Management of Satellite Development (pdf and video)

LECTURE 4

Systems Engineering for Micro/nano/pico-satellites (pdf and video)

LECTURE 5



Introduction of Safety Review Process (pdf and video)

Advantages of J-SSOD (compared to rocket ride)

1. Get technical support from experts (UNISEC, JAXA, Service provider)
2. Launch opportunities 3-4 times a year (even if you miss a certain flight, you don't have to wait for a long time for the next chance)
3. Low vibration during launch compared to rocket rides
4. You can see the deployment at real-time!


JAXA
Explore to Realize