LEIDEN, NETHERLANDS - DECEMBER 2015

THE FUTURE OF ISS UTILIZATION: AN INDUSTRY PERSPECTIVE

NANORACKS

BLUE ORIGIN

AIRBUS DEFENCE & SPACE

#FUTUREISS

MR. CONOR BROWN

NANORACKS EXTERNAL PLATFORMS

#FUTUREISS

PANEL: EXTERNAL INTERNATIONAL SPACE STATION PAYLOADS

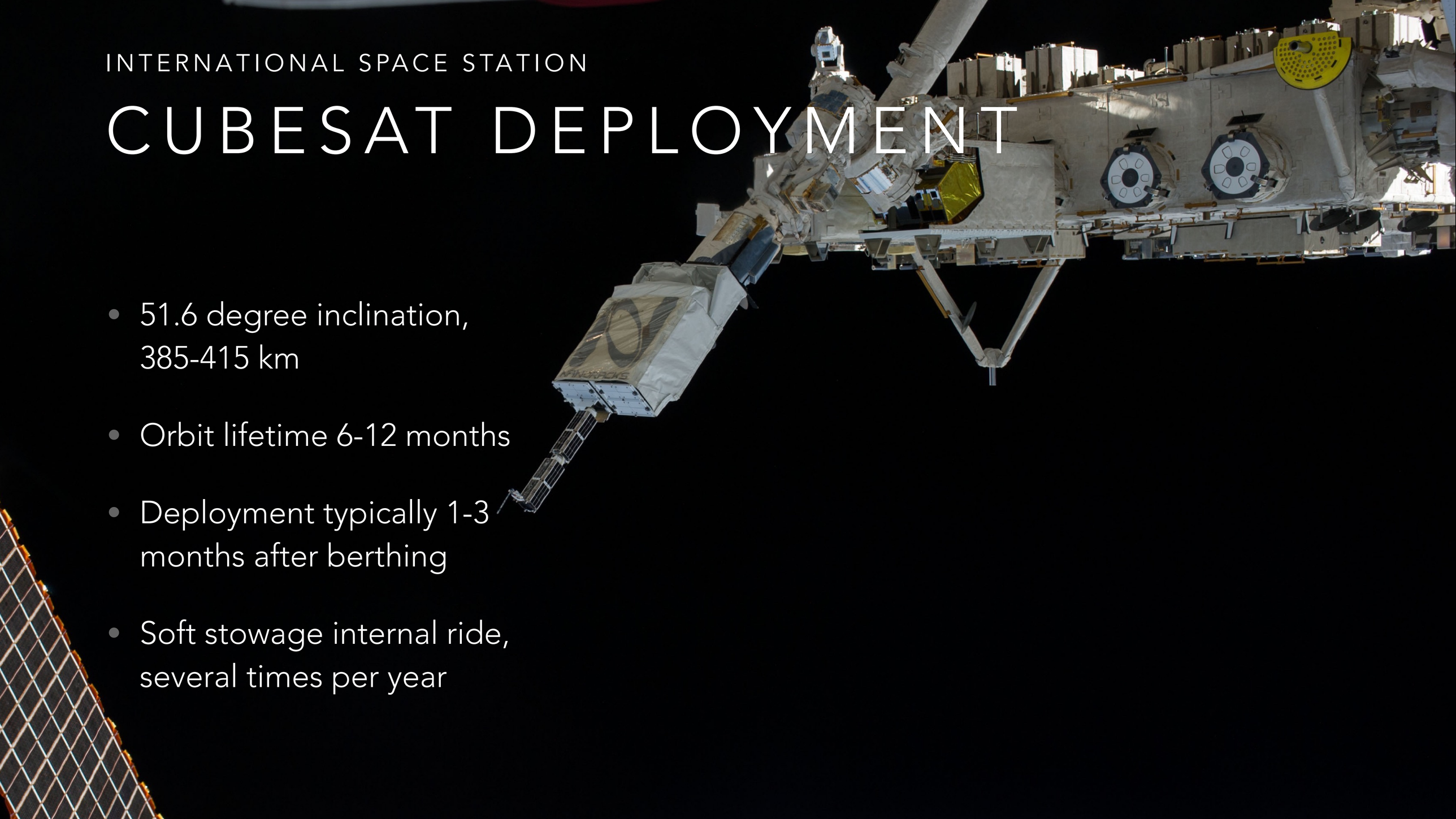
- Moderated by Mr. Conor Brown, NanoRacks External Payloads Coordinator
- Panelists
  - Mr. Vytenis Buzas, CEO, NanoAvionics
  - Mr. Dennis Elgaard, APAC Sales Manager, Gomspace
  - Mr. Michael Bain, Cygnus Cargo, Payload Services Project Manager, OrbitalATKPractical

NANORACKS PHILOSOPHY

- Technology development
- Government payloads
- Education
- International government partnerships

INTERNATIONAL SPACE STATION

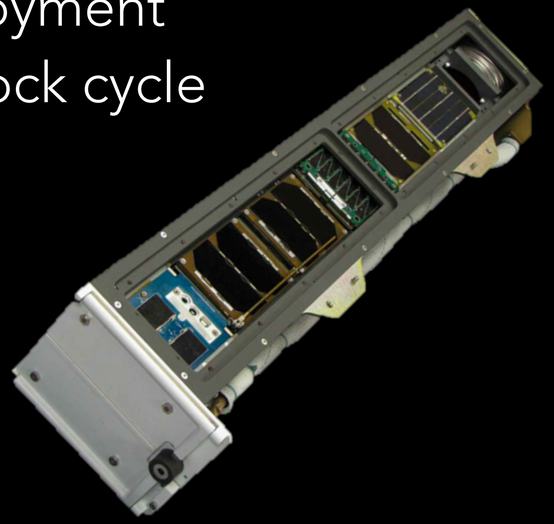
CUBESAT DEPLOYMENT

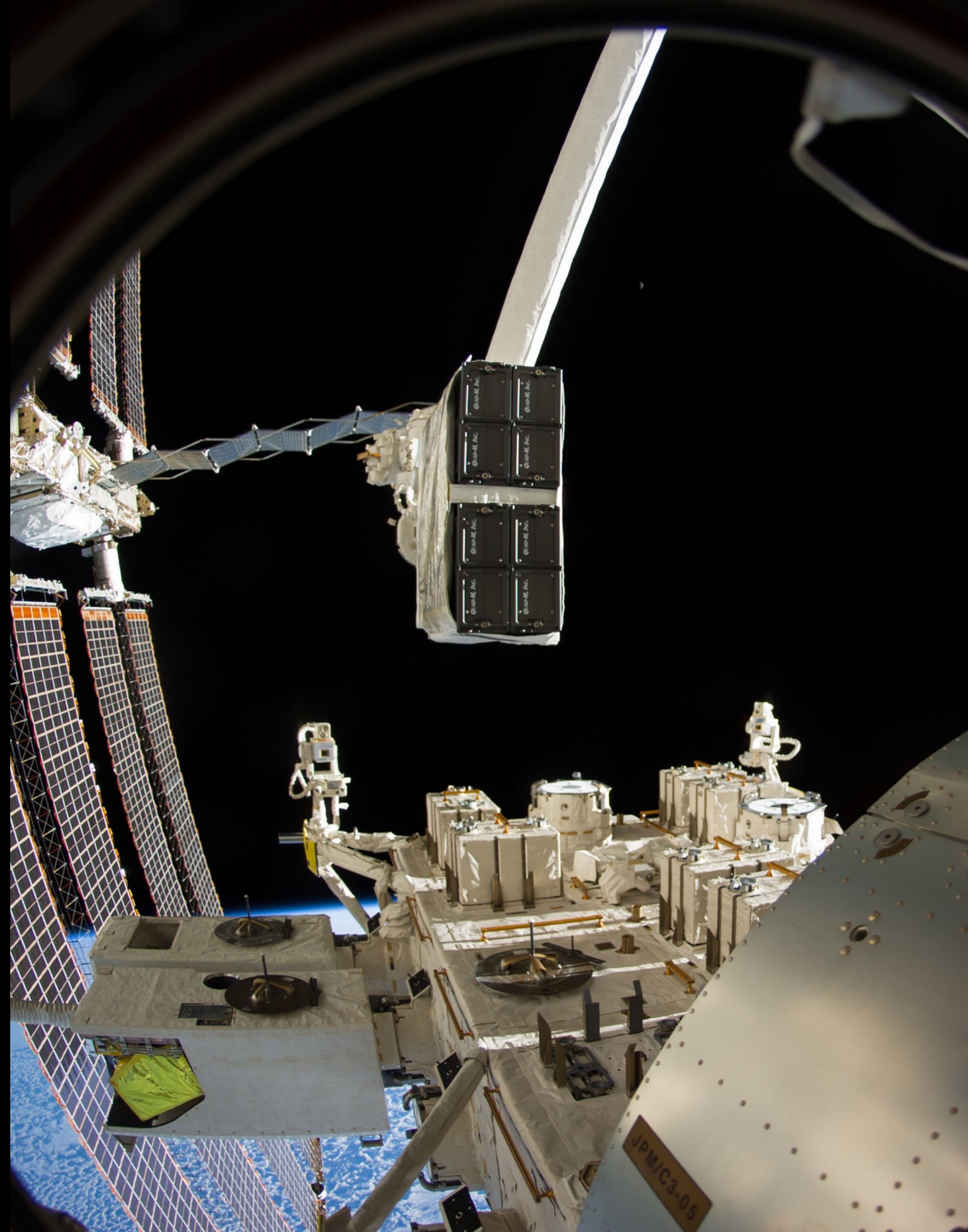


- 51.6 degree inclination, 385-415 km
- Orbit lifetime 6-12 months
- Deployment typically 1-3 months after berthing
- Soft stowage internal ride, several times per year

NANORACKS CUBESAT DEPLOYER

- Each NRCSD can deploy up to 6U of CubeSats
- 8 NRCSD’s per airlock cycle
- Total of 48U deployment capability per airlock cycle





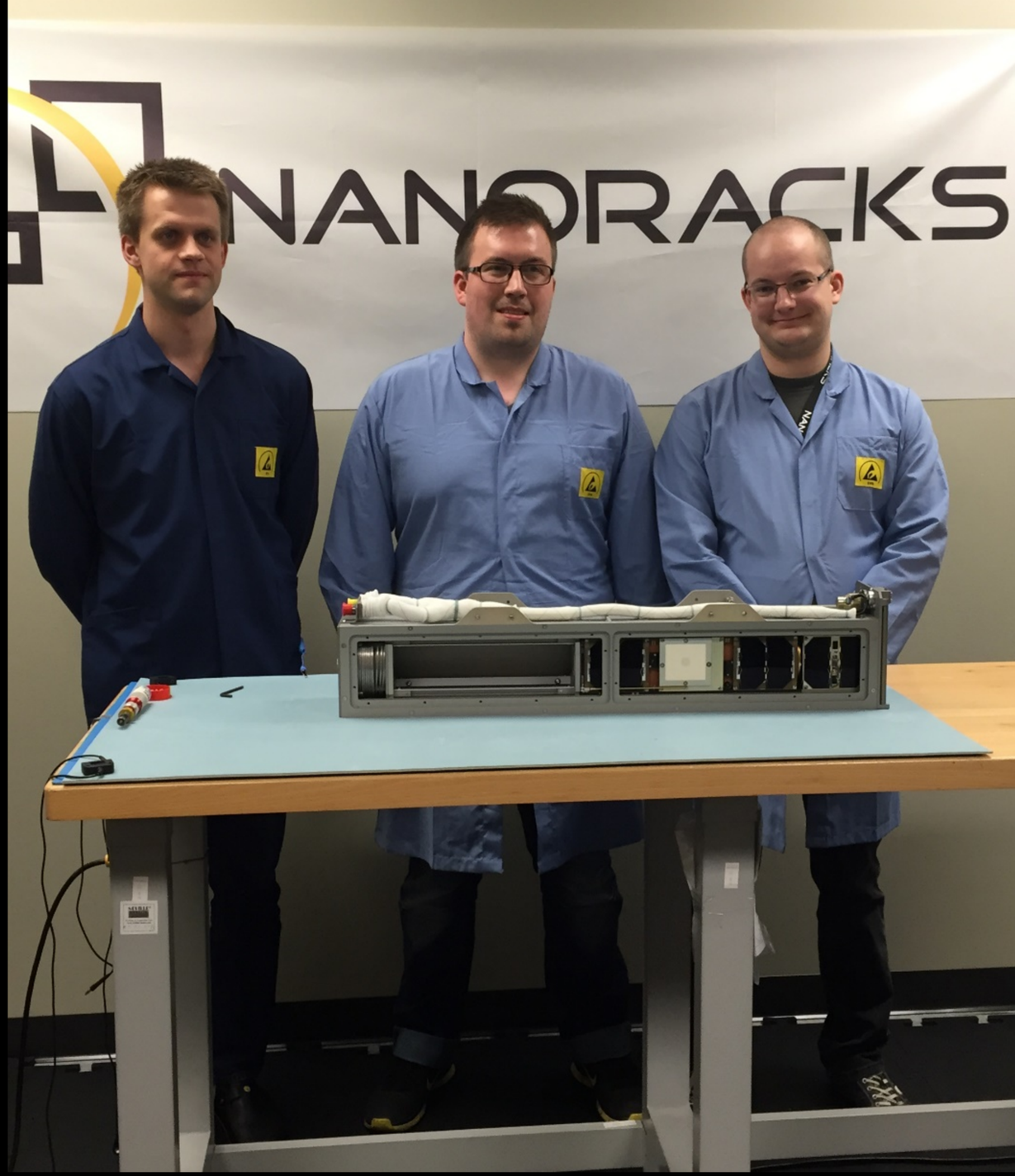
NANORACKS CUBESAT DEPLOYER

HIGHLIGHTS

- First ESA CubeSats deployed in October 2015
- Total of 96 CubeSats deployed from the ISS to-date, with another 41 launched or delivered for launch
- First MicroSat launched to the ISS in December 2015 for deployment via new Kaber Small Satellite Deployment System
- The NanoRacks External Platform (NREP) is on-orbit awaiting first mission in 2016.

GOMX-3 AND AAUSAT-5 INTEGRATION

- Integration of the two CubeSat at the NanoRacks Houston, Texas Facility in June 2015.



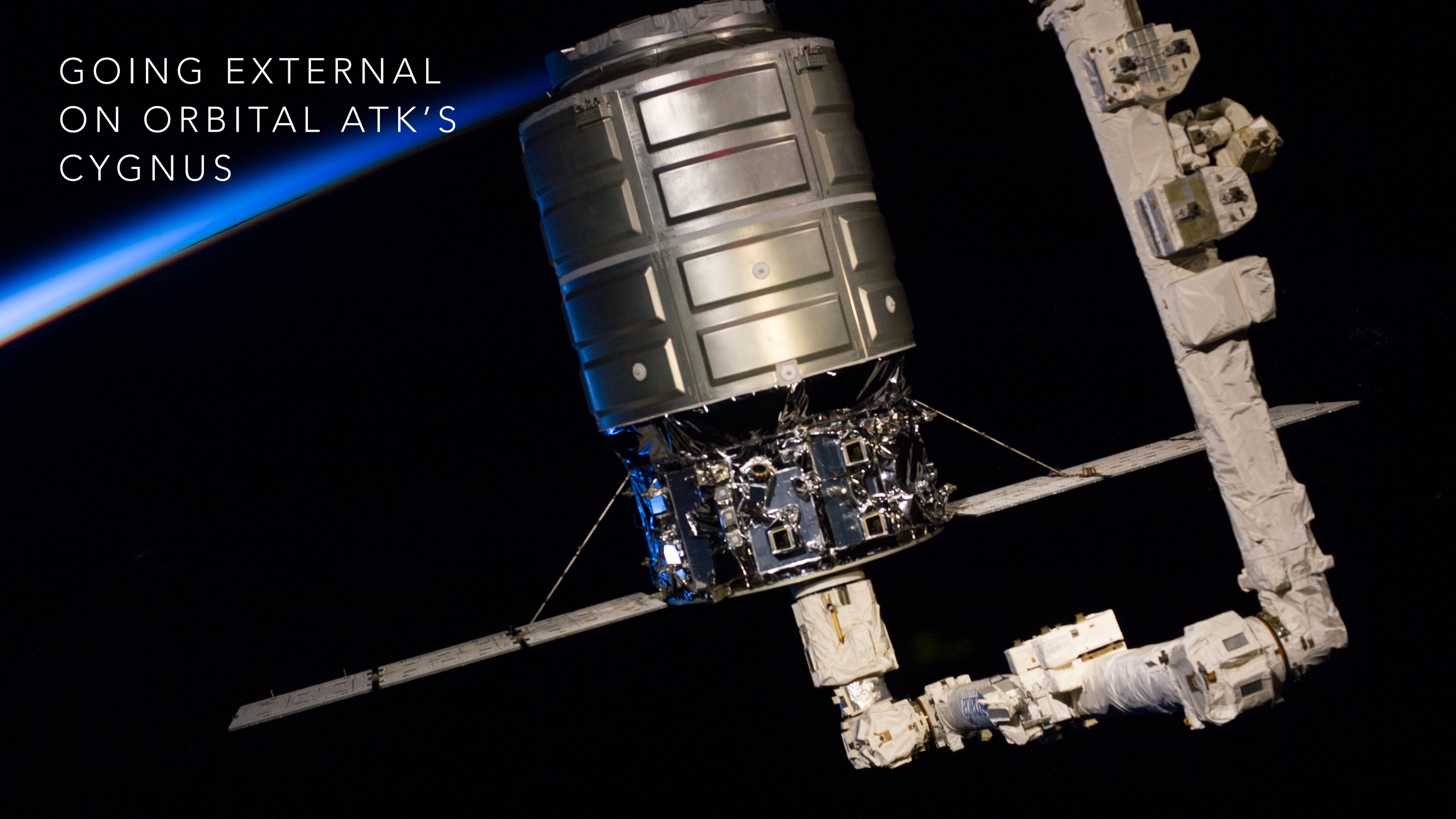
GOMX-3 AND AAUSAT-5 LAUNCH

- Launched on the Japanese H-II Transfer Vehicle (HTV) on August 19, 2015 along with 14 other CubeSats as a part of the 6th NRCSD Mission.

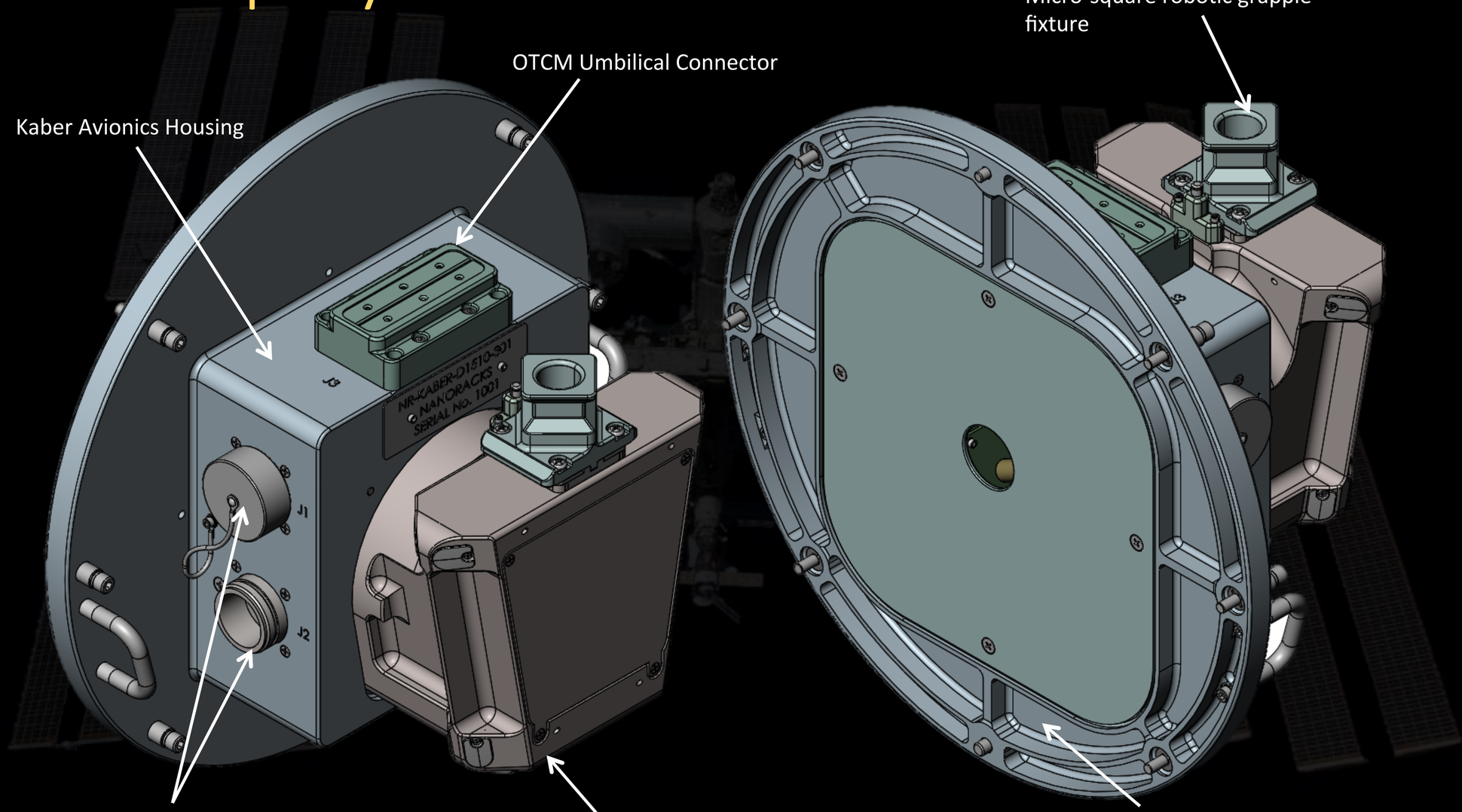
DEPLOYMENT

GOMX-3 & AAUSAT-5

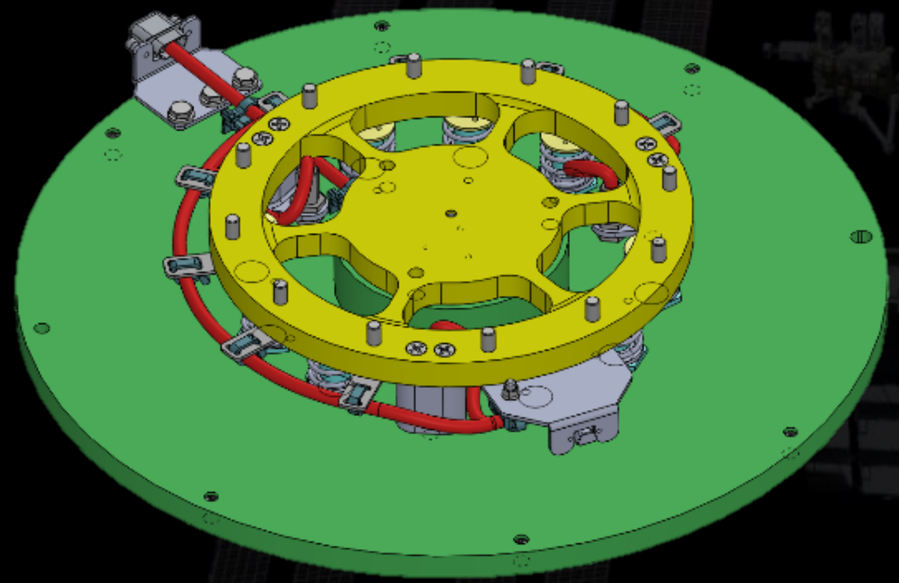
GOING EXTERNAL ON ORBITAL ATK'S CYGNUS



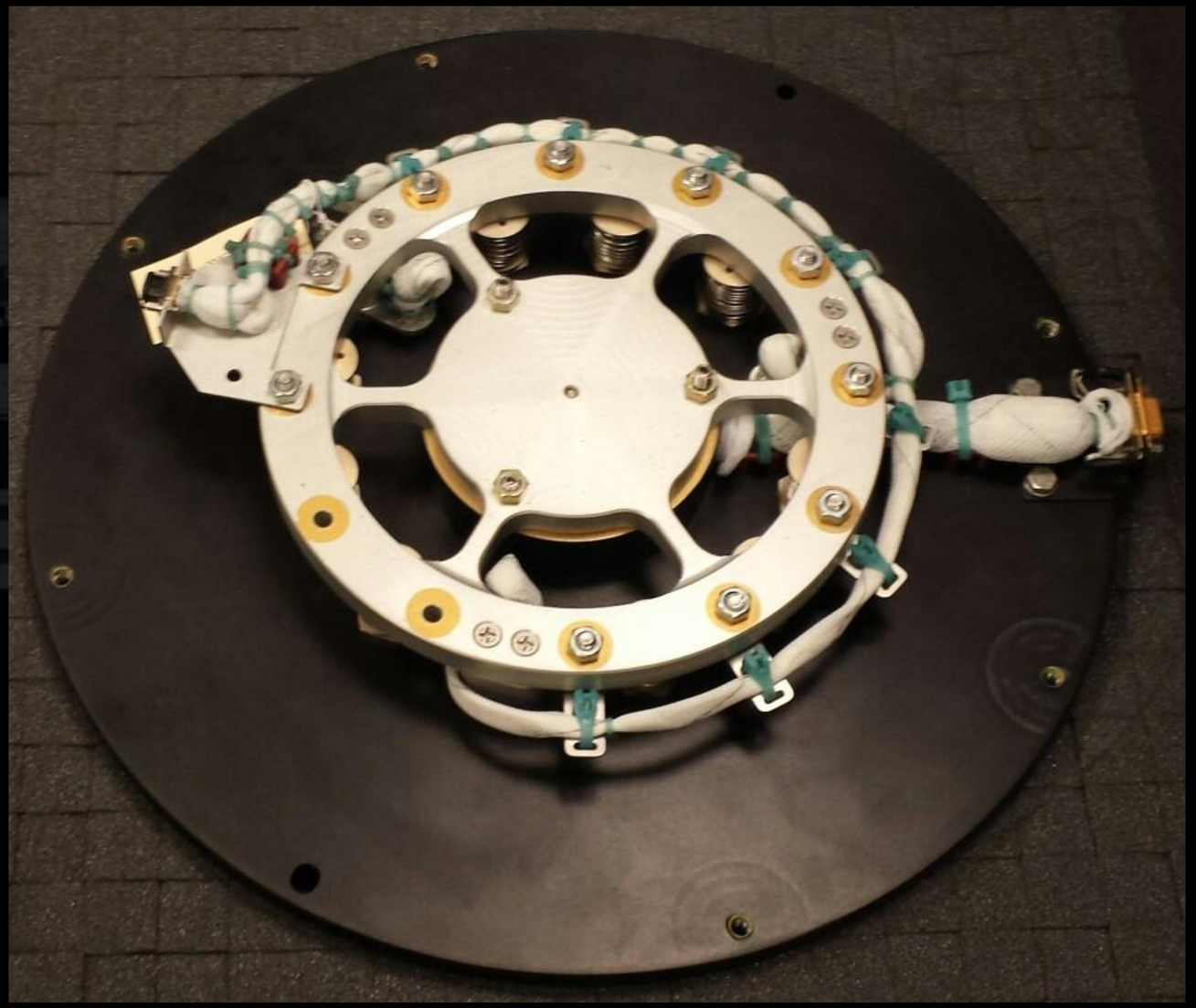
Kaber Deployer



NanoRacks Satellite Separation System



NanoRacks Separation System



Kaber Payload Mass & Volume Constraints

- Max VOLUME: Shown Below
  - Envelope shown is JEM Airlock static envelope. Mission-specific envelope reductions to accommodate tolerance accumulations and micro-G disturbances are TBD.
  - Additional envelope available for other form factors (e.g., a reduction in width allows an increase in length.)
- Maximum mass: 65-75 kg
  - Forward work in progress targeting eventual payload mass of 100Kg