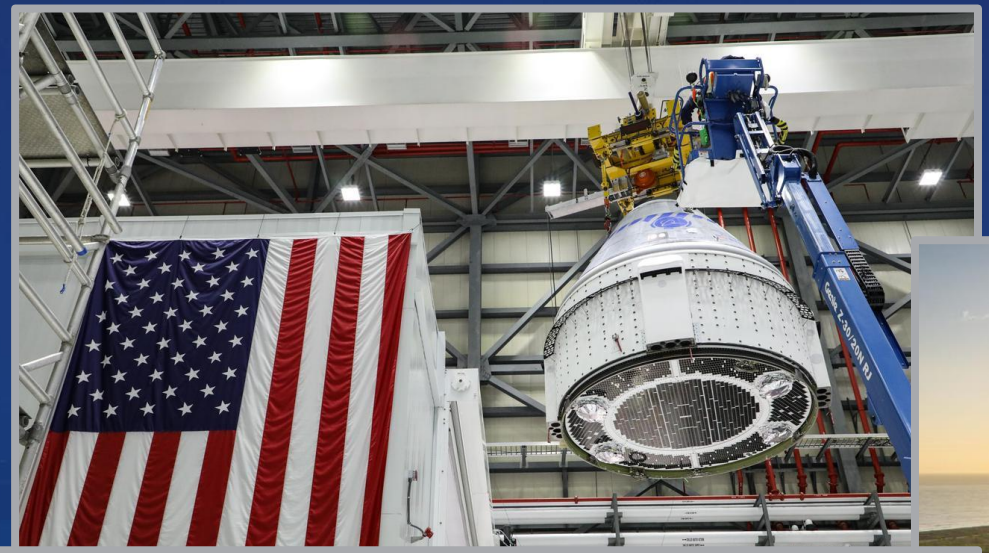
Kennedy Space Center
Community Leaders Update

May 23, 2024

AMERICA'S SPACEPORT

Mission:

Provide **continuous** **access** to space from **Earth's premier** **spaceport** through **creativity** and **innovation**.

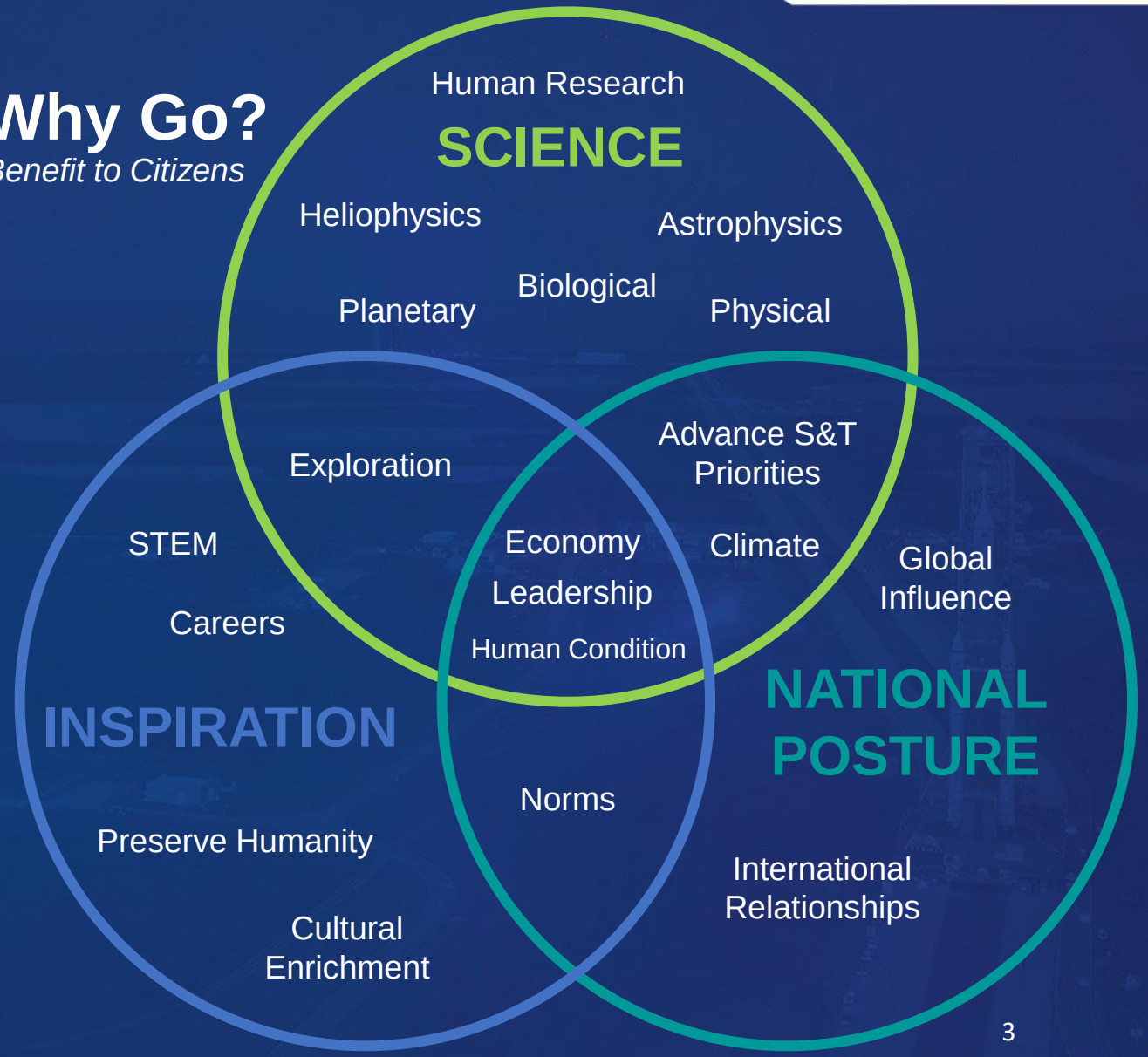


KSC Priorities

- *Continue as Earth's Premier Spaceport*
- *Lead Commercial Space for the Agency*
- *Provide Sustainable Processing, Launch, and Recovery Operations*
- *Develop, Deliver, Operate, and Sustain Surface Technologies and Ground Systems on the Earth, Moon, and Mars*
- *Provide Scalable Skills and Expertise for NASA Missions*

Why Go?

Benefit to Citizens



Kennedy Space Center
Overview

Kennedy Space Center, Earth's premier multiuser spaceport, has various users that directly support NASA mission directorates, other government agencies, and commercial providers.

Space Florida
(Commercial)

Amazon
(Commercial)

Boeing
(DoD)

Boeing
(SOMD)

Boeing
(Commercial-ESDMD)

EGS Program
(ESDMD)

SpaceX
(Commercial, DoD, ESDMD, SOMD)

Sierra
(Commercial, SOMD)

SpaceX
(Commercial, DoD, ESDMD, SOMD)

Florida Power and Light
(Commercial)

MSFC
(ESDMD)

Lockheed Martin
(Commercial - ESDMD)

SSPF
(Commercial, STMD, SOMD, ESDMD)

EGS Program
(ESDMD)

Blue Origin
(Commercial, DoD, ESDMD, SOMD)

Delaware North
(Commercial)

Space Florida
(Commercial)

Launch Service Program
(SOMD)

Not all users shown

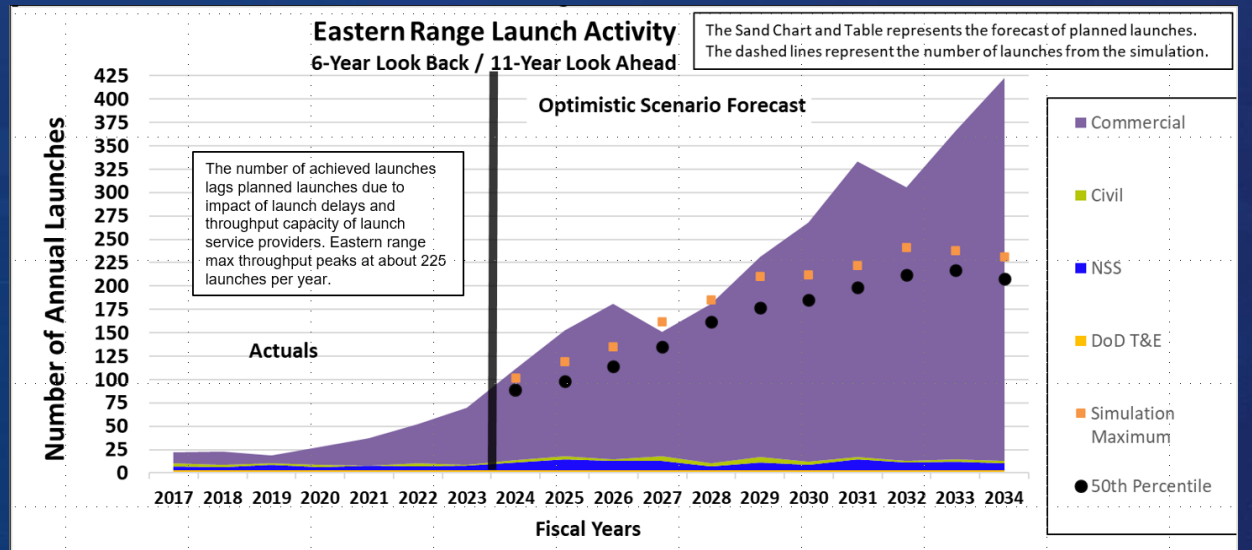
Launch Demand at KSC and CCSFS

72 launches in CY23
(134 major operations total)

37 launches in CY24*
(30 major operations total)

KSC supports every launch and major milestone operation (e.g., Tanking Test, Wet Dress Rehearsal, Static Fire) that occurs from Cape Canaveral Space Force Station (CCSFS) and KSC.

- Gaseous Nitrogen (GN2) and Gaseous Helium (GHe)
- Tropospheric Doppler Radar Wind Profiler
- Protective Services
- Emergency Operations Center
- Emergency Response (if necessary)



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Commercial	12	14	9	19	29	42	61	98	135	166	133	171	214	256	316	293	351	410
Civil	3	3	1	3	0	3	1	3	3	2	5	3	6	3	2	2	3	3
NSS	4	3	6	3	5	4	5	8	12	10	10	4	8	6	12	8	9	7
DoD T&E	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Totals	22	23	19	28	37	52	70	112	153	181	151	181	231	268	333	306	366	423
Simulation Maximum								102	119	135	162	185	210	212	222	241	238	231
Simulation 50th Percentile								89	98	114	135	162	177	185	199	212	217	208

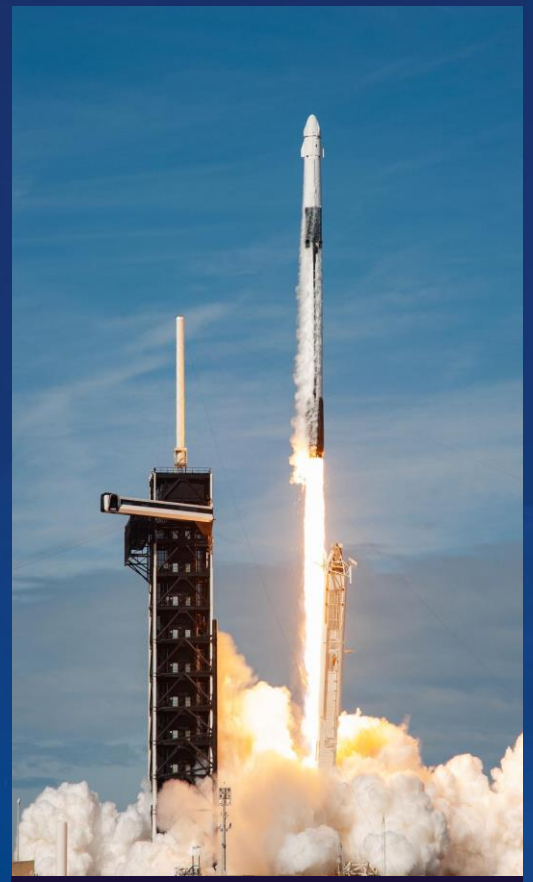
File: Launch_Schedule_2023_10_02_CUI.xlsx Sheet: ER_SandChart_4Cat_Opt_FY

Center Focus Areas

LAUNCH SERVICES PROGRAM

EARTH'S BRIDGE TO SPACE

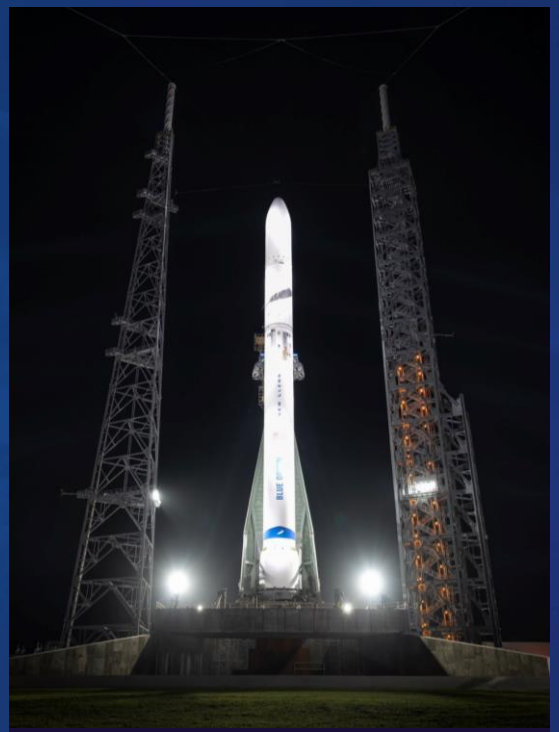
Uniting scientific and robotic spacecraft customers' needs with the appropriate rocket



Ensuring safe, reliable, cost-effective and on-schedule launch services

Executing strategies for evolution of launch services for the growth of the small satellite sector in NASA

Ensure the spacecraft is placed in the appropriate orbit around the Earth, the Sun, or powered to destinations deeper into the solar system



Certifying new commercial rockets to launch high-value civil-sector payloads

Providing commercial logistics acquisition services for Gateway and advisory services for commercially procured Artemis payloads

UPCOMING MISSIONS

NISAR (LSP Advisory)
Date: 2024
Launch Vehicle:
GSLV Mark II

GOES-U
Date: June 25, 2024
Launch Vehicle: SpaceX
Falcon Heavy

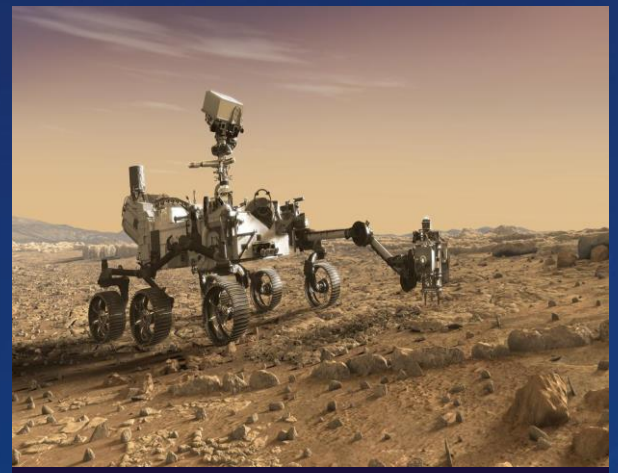
Europa Clipper
Date: Oct 2024
Launch Vehicle: SpaceX
Falcon Heavy

PREFIRE
Date: Summer 2024
Launch Vehicle: Rocket Lab Electron

ESCAPADE
Date: Late 2024
Launch Vehicle: Blue Origin New Glenn

PAVING THE WAY – MOON TO MARS

James Webb Space Telescope



MARS 2020 - Perseverance

CAPSTONE

CRS Missions

Human Landing System

HALO PPE

Commercial Crew Program

COMMERCIAL CREW PROGRAM

HOW IS CCP DIFFERENT

- NASA is not the owner or operator of the crew transportation system
- CCP has two commercial providers, Boeing and SpaceX, each with different rockets, spacecraft, organizational structures, and cultures
- NASA is only *one of many* customers
- NASA and providers operate with separate risk management systems
- NASA's Safety Review process begins early in the design phase to derive NASA requirements and capabilities, but providers own their processes and approaches

Our NASA Purpose

- Safe transport of NASA and NASA-sponsored astronauts to and from the space station

Our Public Purpose

- Support the development of non-NASA markets for commercial human transportation services to and from low-Earth orbit.





CCP ACHIEVEMENTS

- ✓ Returned human launch capabilities back to the United States
- ✓ SpaceX Crew Dragon system certification complete – 8 crew rotation flights and counting
  - ➢ SpaceX private flights enabled by CCP (example: Private Astronaut Missions to ISS)
- ✓ Upcoming Boeing Crewed Flight Test launch
  - ➢ Boeing full system certification and first rotation flight expected in 2025.
- ✓ CCP flights directly enable more science at least doubling NASA's crew time capability for research

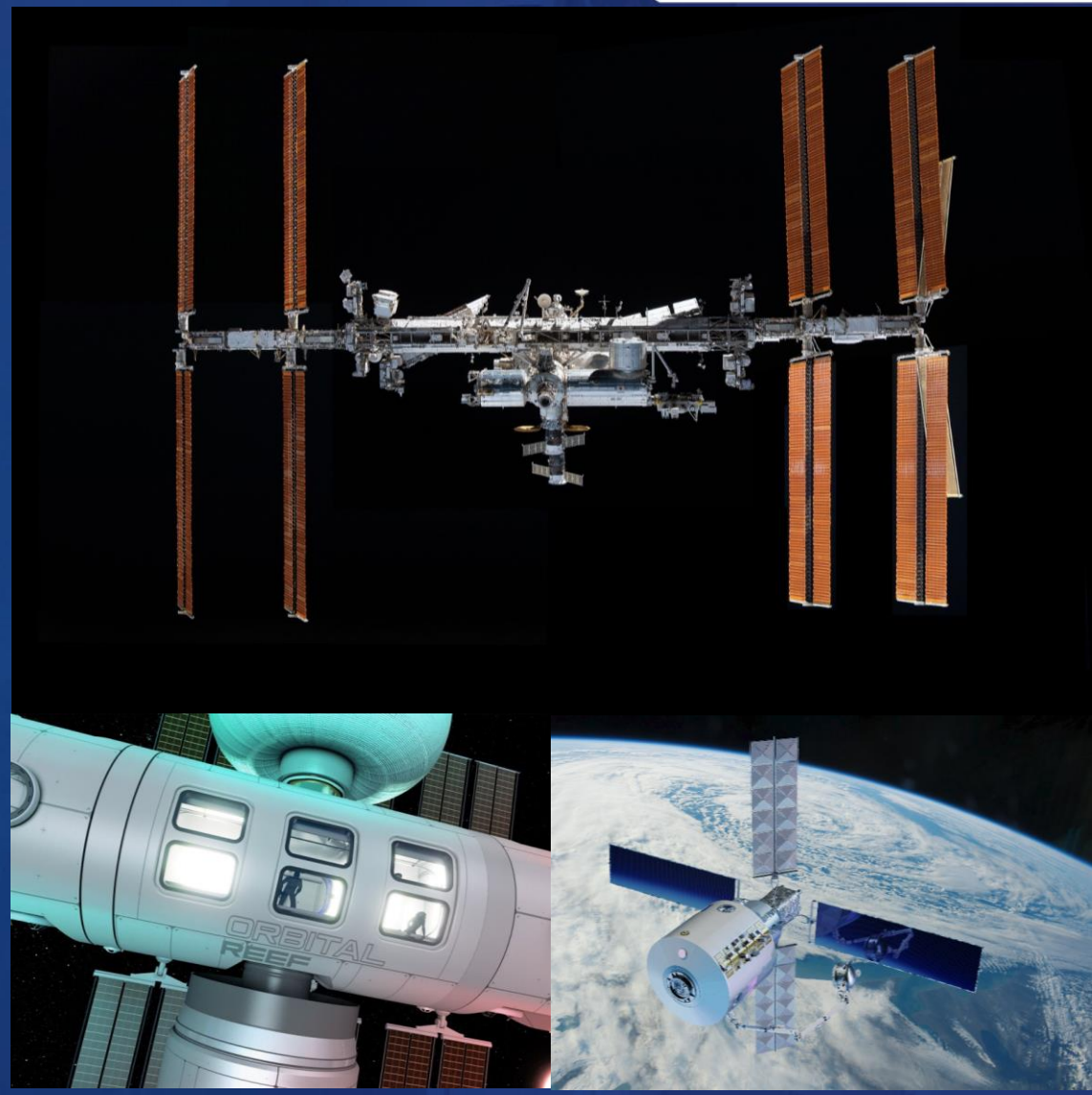
NASA support and technical guidance makes all the difference.

WHAT'S NEXT?

Commercial Low-Earth Orbit Destinations

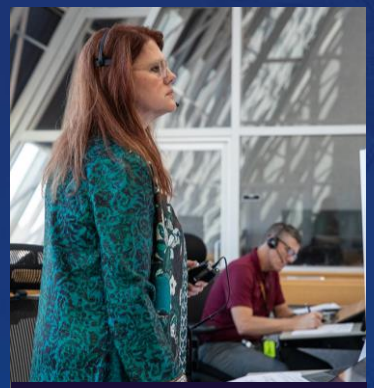
Our future in Low-Earth Orbit is exciting!

- NASA is poised to take the next step in developing commercial low-Earth orbit destinations with industry.
- These destinations will serve our collective needs following the retirement of the space station.
- **CCP is working with our partners in the Commercial Low-Earth Orbit Development Program leading the transportation-related activities associated with these future destinations.**



EXPLORATION GROUND SYSTEMS

PREPARING FOR ARTEMIS II



NASA Artemis Launch Director Charlie Blackwell-Thompson monitors activities during the Artemis II terminal countdown simulation

The first Artemis II launch simulation inside the Firing Room at the Launch Control Center at NASA's Kennedy Space Center. The team rehearses the steps to launch Artemis II mission

New LH2 Sphere at the Pad for Artemis II

NASA Artemis II crew members are assisted by U.S. Navy personnel as they exit a mockup of the Orion spacecraft in the Pacific Ocean during URT-11

Artemis II Booster Segments in processing in the RPSF

EGS teams begin installation of four emergency egress baskets at Launch Complex 39B.

DEVELOPMENT OF MOBILE LAUNCHER 2

Artemis I

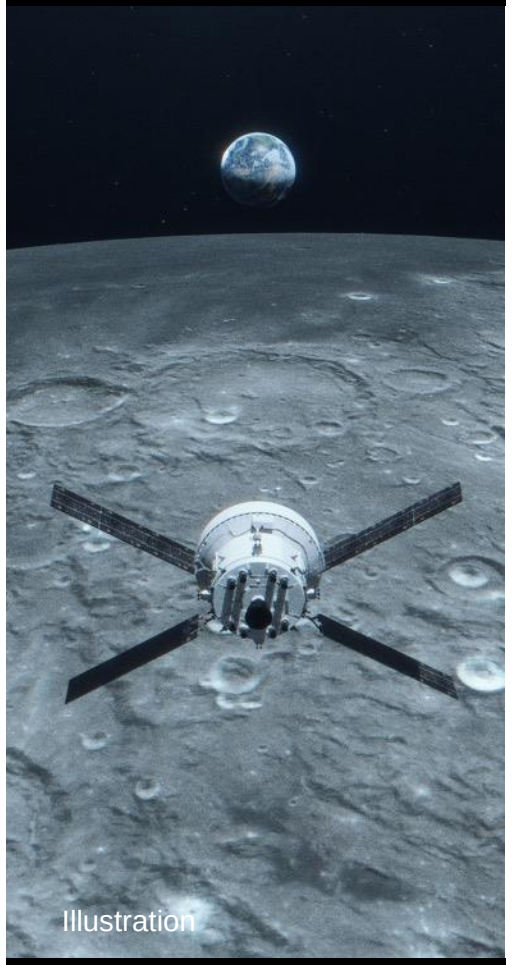
Uncrewed flight test

COMPLETE

SLS, Orion, EGS

Artemis II

Crewed flight test



SLS, Orion, EGS

Artemis III

Crewed surface expedition

SLS, Orion, EGS, HLS

Artemis IV

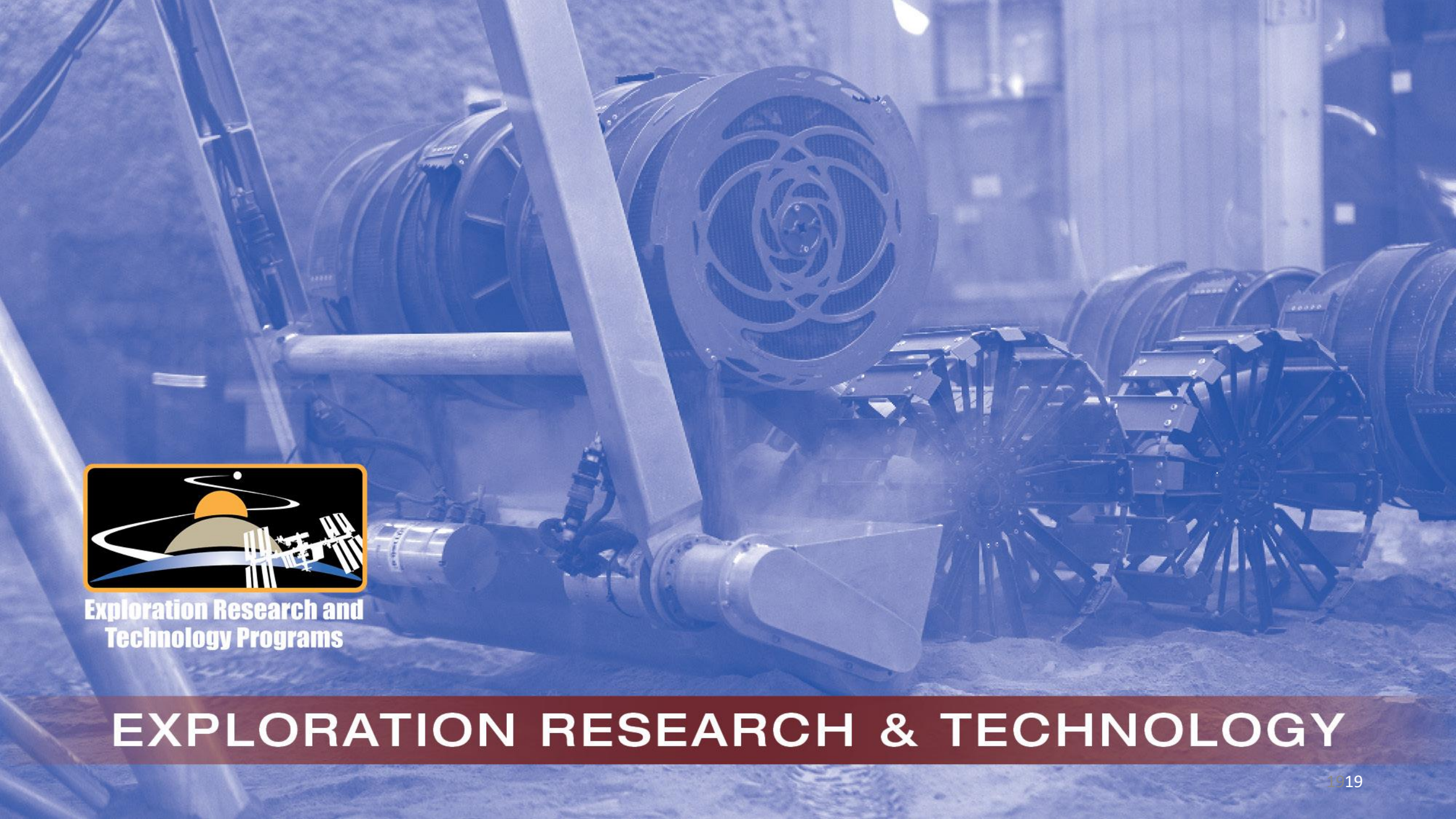
Gateway assembly, crewed sustaining lander expedition

SLS, Orion, EGS, HLS, Gateway *(PPE/HALO, DSL, I-HAB)*

Artemis V

Crewed mobile surface exploration, Gateway expansion

SLS, Orion, EGS, HLS, LTV, Gateway (*ESPRIT, Canadarm3*)

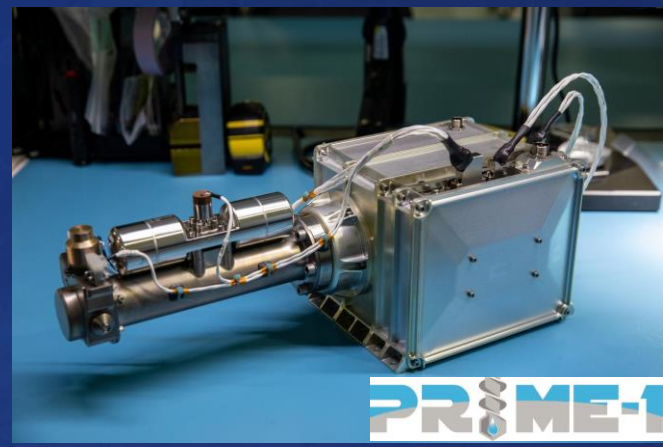

Exploration Research and
Technology Programs
EXPLORATION RESEARCH & TECHNOLOGY

INTERNATIONAL SPACE STATION

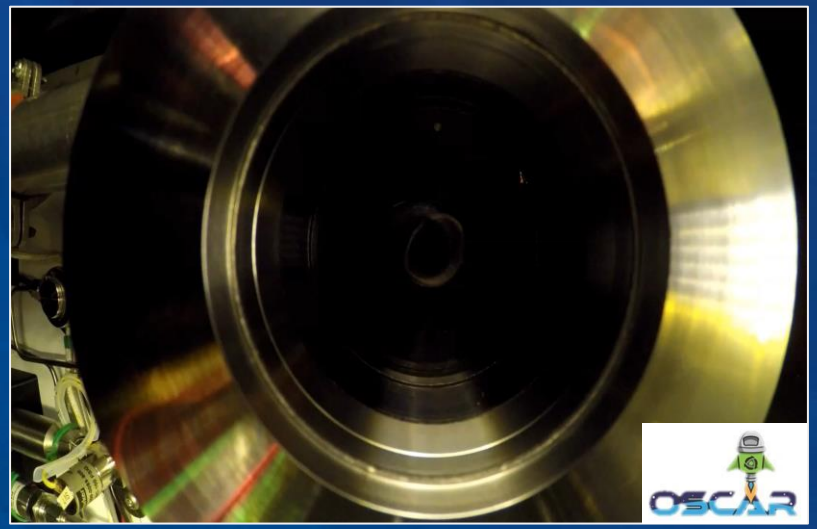
EXPLORATION RESEARCH & TECHNOLOGY

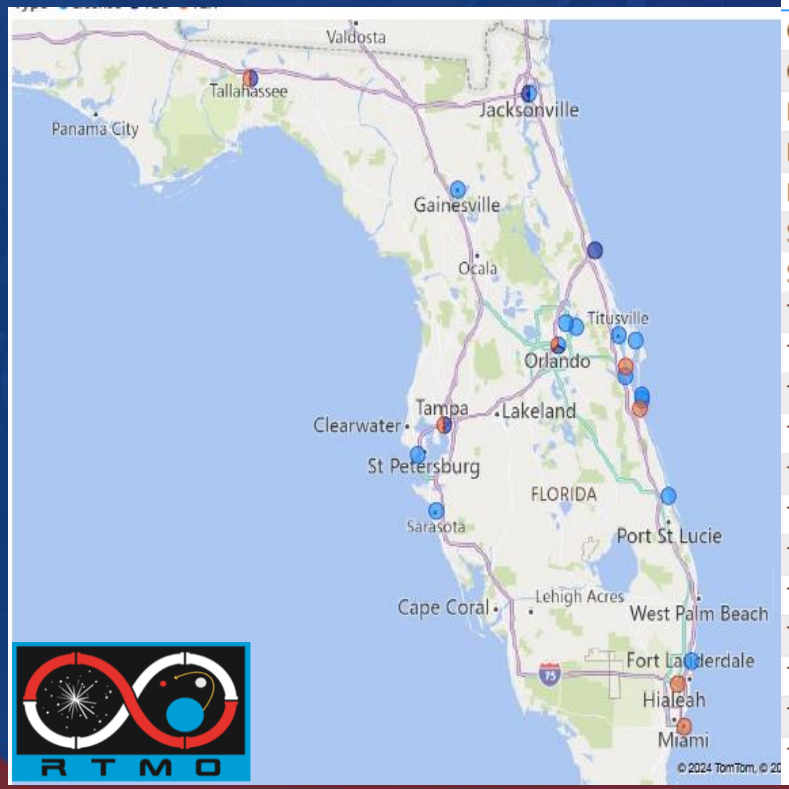
CUTTING EDGE RESEARCH....

Plume Surface Interaction Project

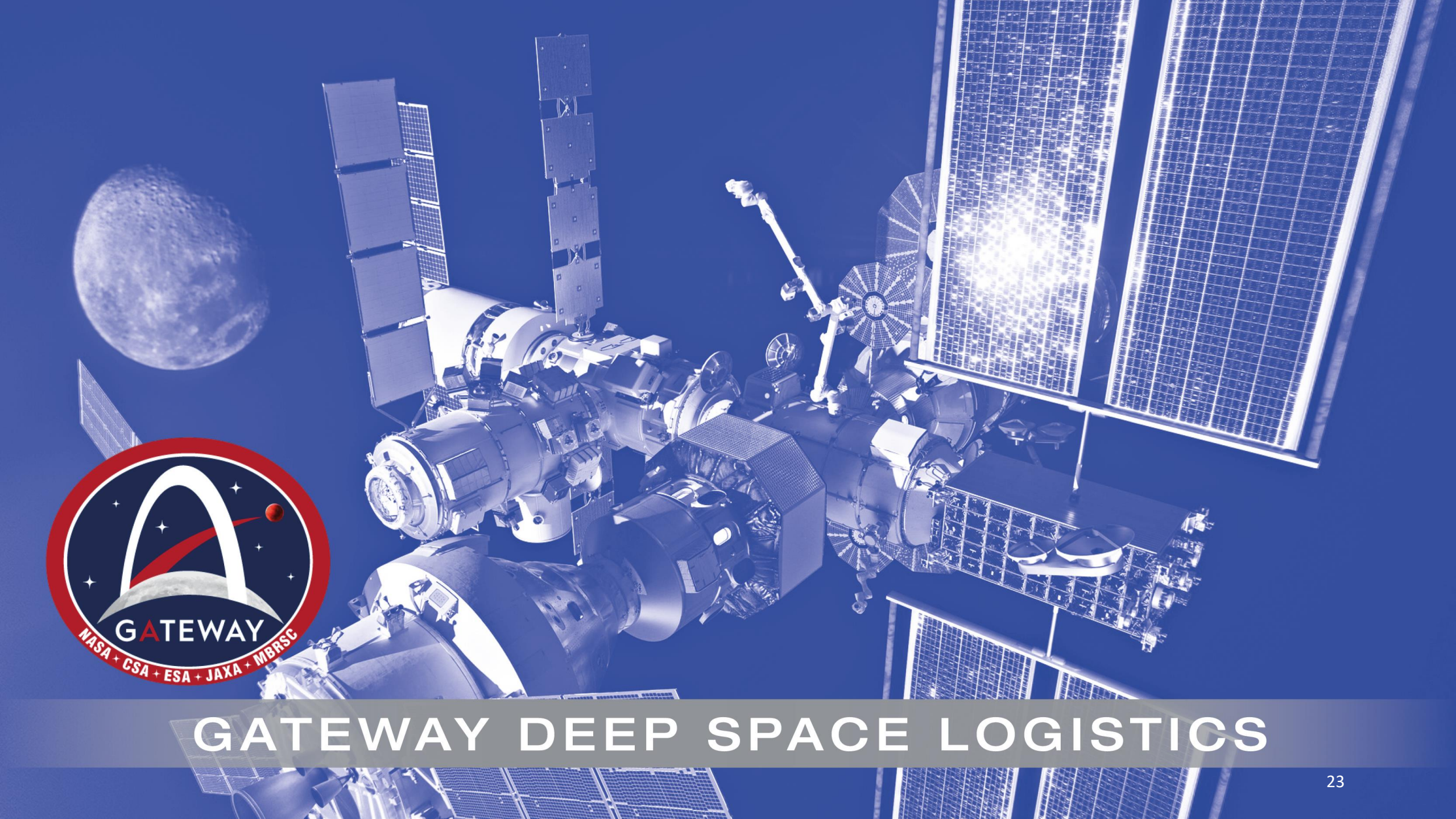


…FOR THE EARTH, MOON, AND BEYOND





Type	University/Project
Grant	Univ of Florida
Grant	University of Florida
License	Florida Space Institute - University of Central Florida
License	University of Central Florida (UCF)
License	University of Florida
STTR	The University of Central Florida
STTR	University of Central Florida (UCF)
T2U	Embry-Riddle Aeronautical University
T2U	Florida State University
T2U	Hillsborough Community College
T2U	Rollins College
T2U	University of North Florida
T2U	University of South Florida
T2X	Florida High Tech Corridor
T2X	Florida SBDC at Eastern Florida State College
T2X	North Florida Partners
T2X	Nova Southeastern University Levan Center of Innovation
T2X	University of Central Florida (UCF)
T2X	USF Connect



GATEWAY DEEP SPACE LOGISTICS

NASA's Artemis missions will return humans to the Moon for long-term scientific research and discovery.

Gateway will be a vital and versatile outpost staging-point to access the lunar surface for research and development.

Earth → ISS
20 hours travel
250 miles away

Earth → Moon
1 week travel
250,000 miles away

Deep Space Logistics cargo module on docking approach to Gateway.

Kennedy Space Center is home to **NASA's Deep Space Logistics project.**

Our Mission: Launching deep space delivery for exploration.

Extending a human presence to the Moon and beyond requires a robust logistics supply chain.

Exploration is a Team Sport

Examples of collaboration, cooperation & partnerships

Academic Community

University of Central Florida

Embry-Riddle Aeronautical University

Auburn University RFID Lab

R&T Investment

NASA HUNCH

High Schools United with NASA to Create Hardware

GRABCAD

DoD

United States Transportation Command

United States Space Force
Department of the Air Force
MMXIX

Int. Partners

Canadian Space Agency
Agence spatiale canadienne

esa

JAXA

مركز محمد بن راشد للفضاء
Mohammed Bin Rashid Space Centre

Industry & Associations

SpaceX

The International Air Cargo Association
TIACA

Opportunity Next

Industry and Legislative Support

- Advocacy
- University
- Partnership

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