ISSRDC

Accelerating the LEO Economy via Commercial Space Stations

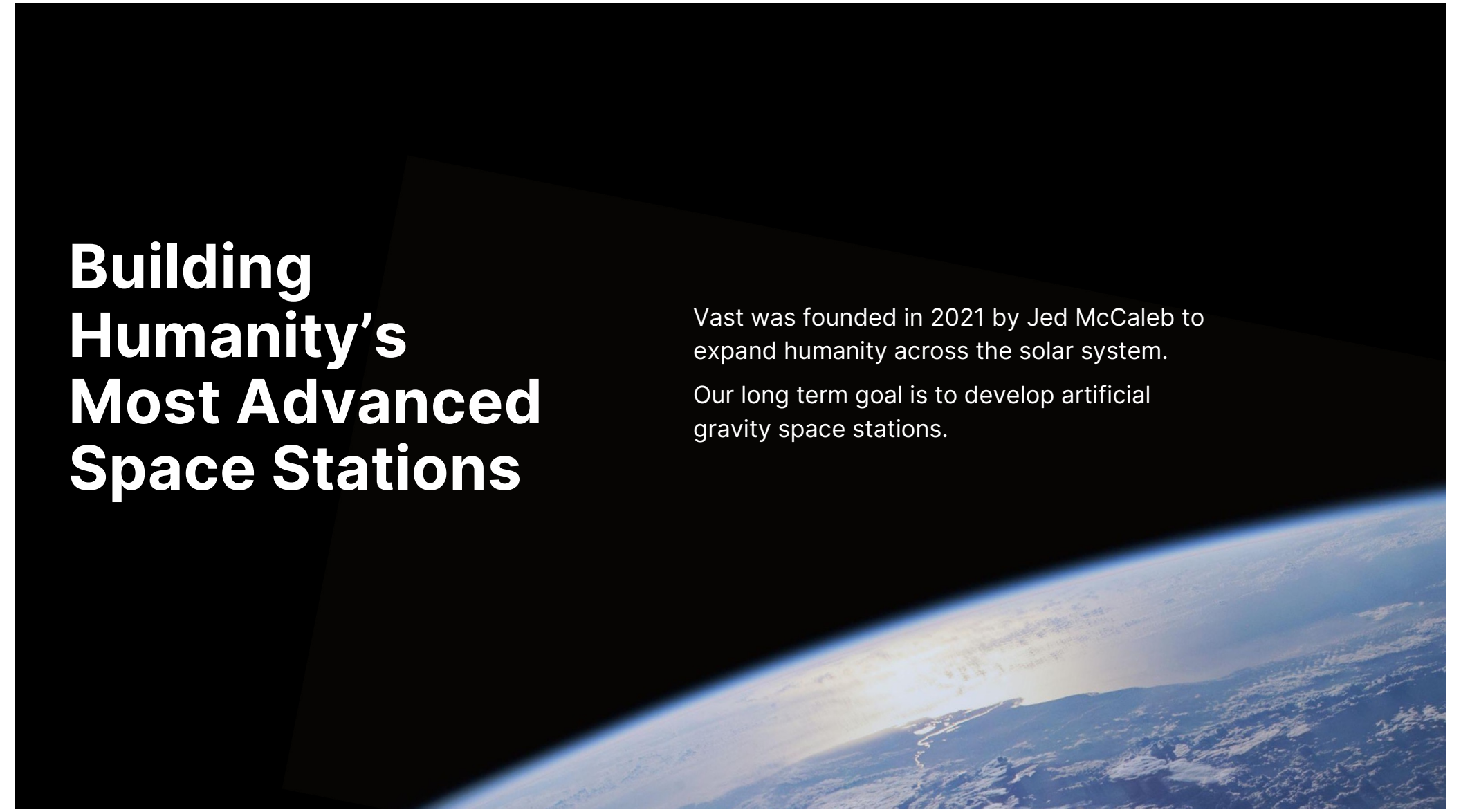
Dennis Stone
VP, Business Development

AIRBUS
Technical Session Sponsor

Building Humanity's Most Advanced Space Stations

Vast was founded in 2021 by Jed McCaleb to expand humanity across the solar system.

Our long term goal is to develop artificial gravity space stations.



OUR FOCUS THIS DECADE

Build and Launch the world’s first commercial space station, Haven-1

Build and launch the successor to the ISS

3


INTRODUCING
HAVEN-1
Scheduled to be the world’s first
private space station.
VAST
HAVEN-1

KEY PARTNERSHIPS

FALCON 9

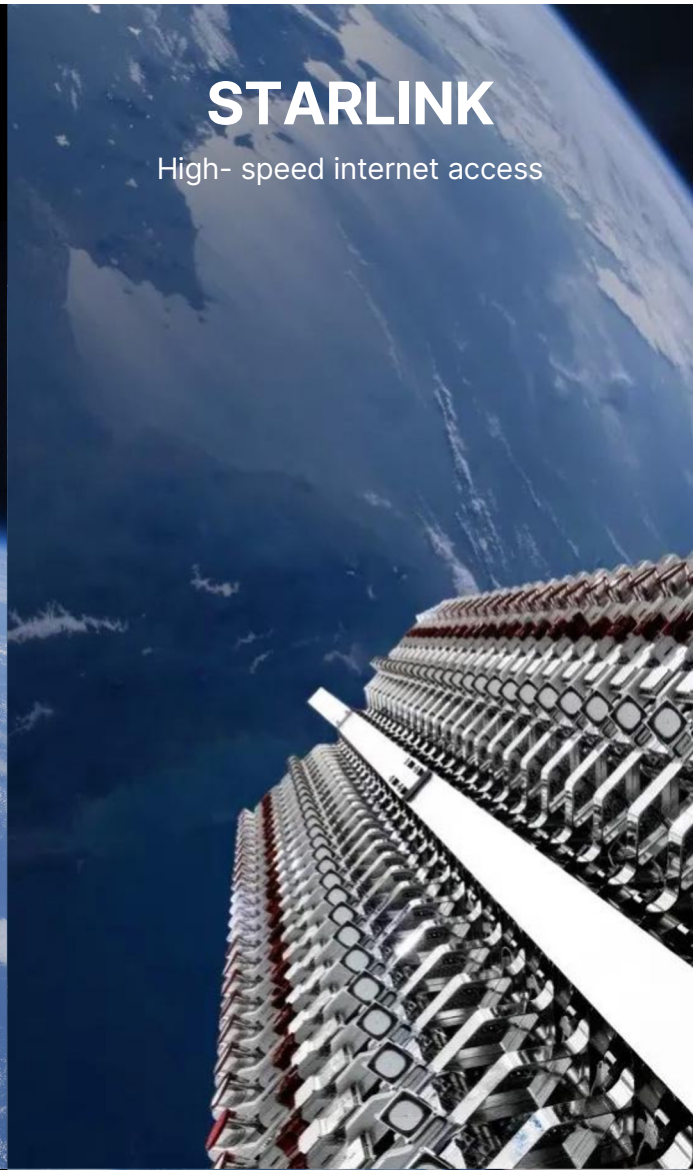
Launching from Cape Canaveral, FL.

DRAGON

Docking in orbit

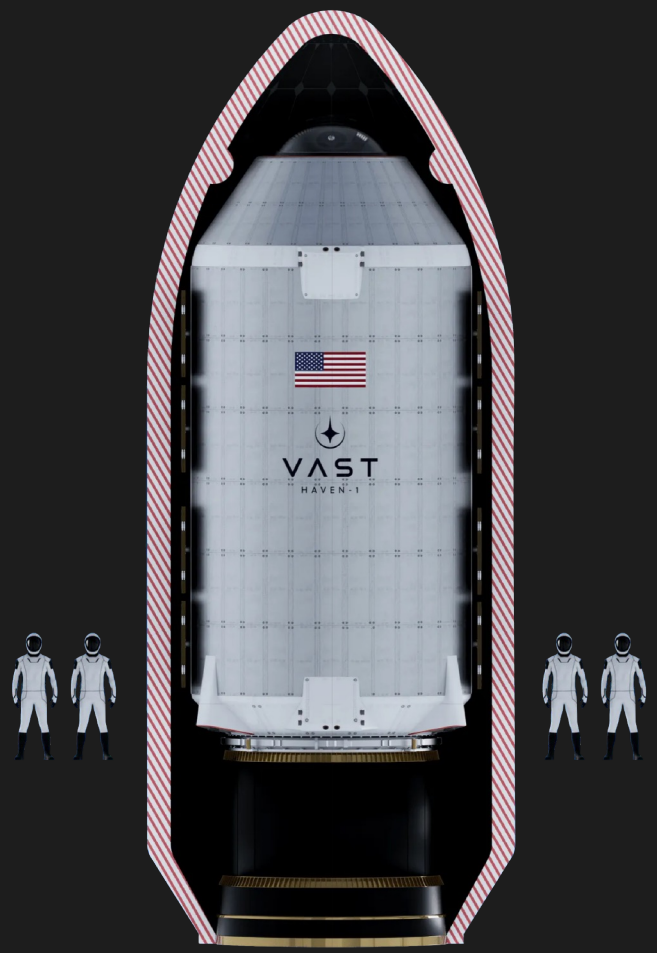
STARLINK

High- speed internet access



HAVEN-1 SPECS

DIAMETER	4.4 m
HEIGHT	10.1 m
PRESSURIZED VOLUME	80 m^3
MASS	14,000 kg
POWER	13,200 W
ORBIT	51.6°, 425 km
CREW CAPACITY	4



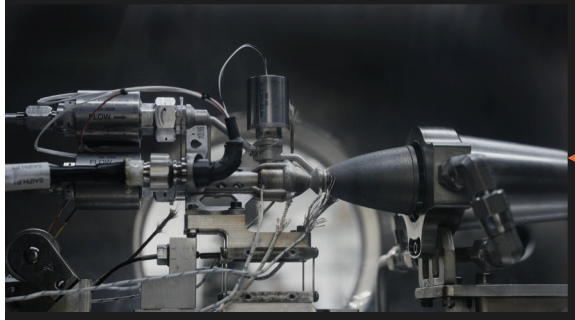
HARDWARE DEVELOPMENT

Deployable Solar Panel by DHV

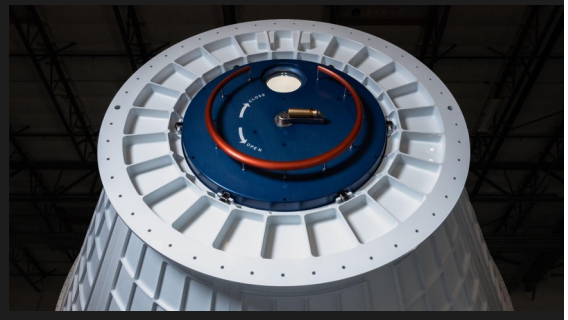
MMOD Shielding by Vast (impact testing shown above)

Primary Structure by Vast

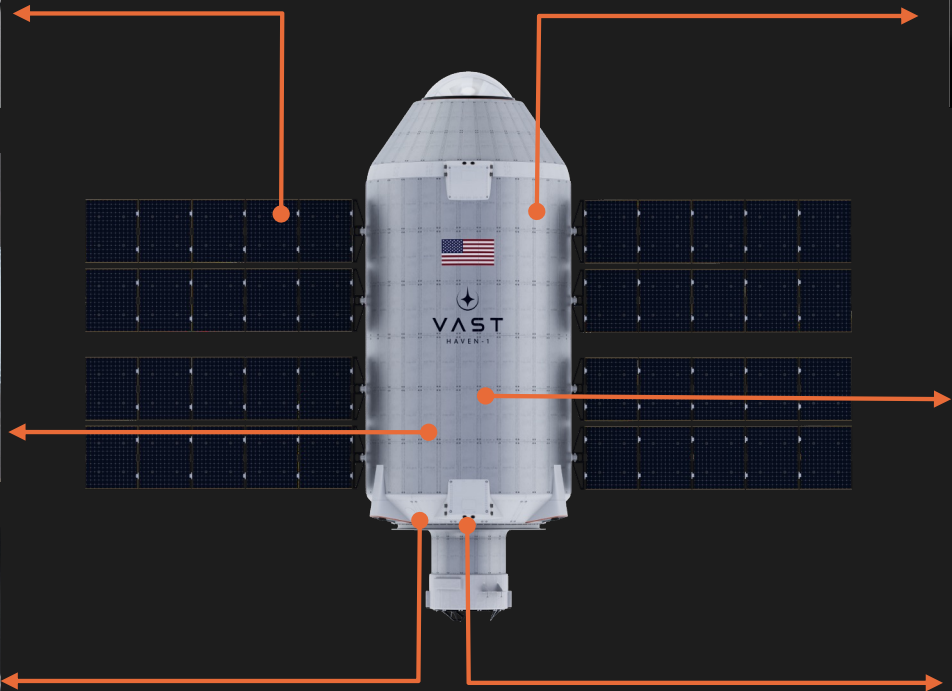
Control Moment Gyros by Vast



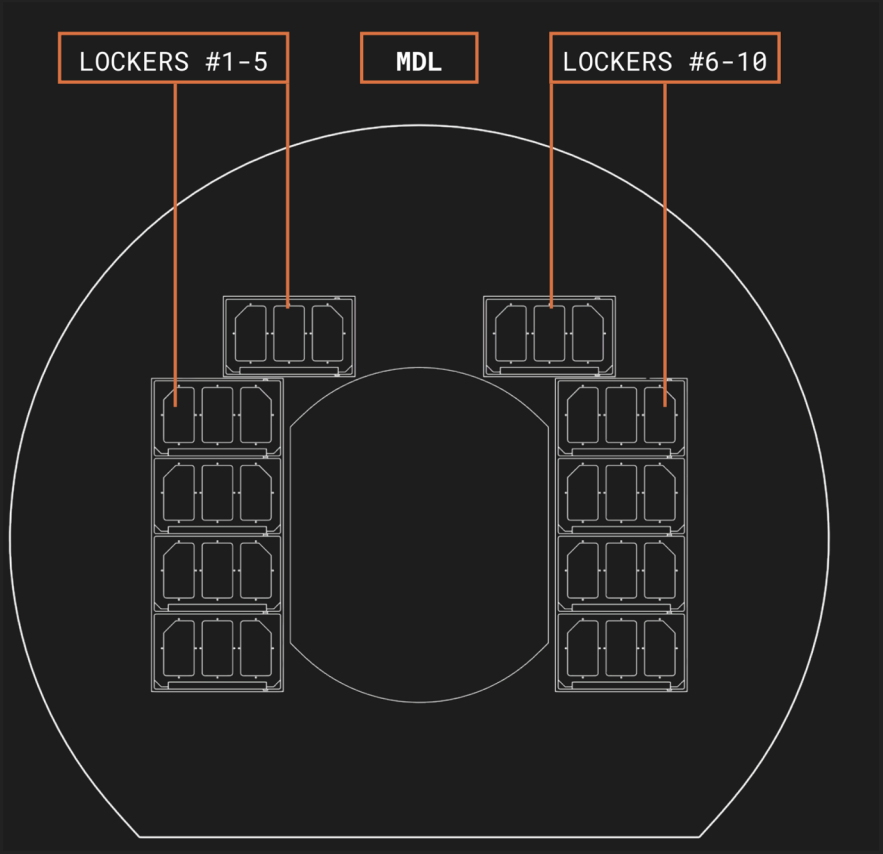
48x Saiph Thrusters by Impulse



Crew Hatch by Vast



PAYLOAD OPPORTUNITIES



Full ISS Express Rack Capacity

- 10x Middeck Locker Equivalent (MLE) payload slots
- 30 kg and 100 W per MLE

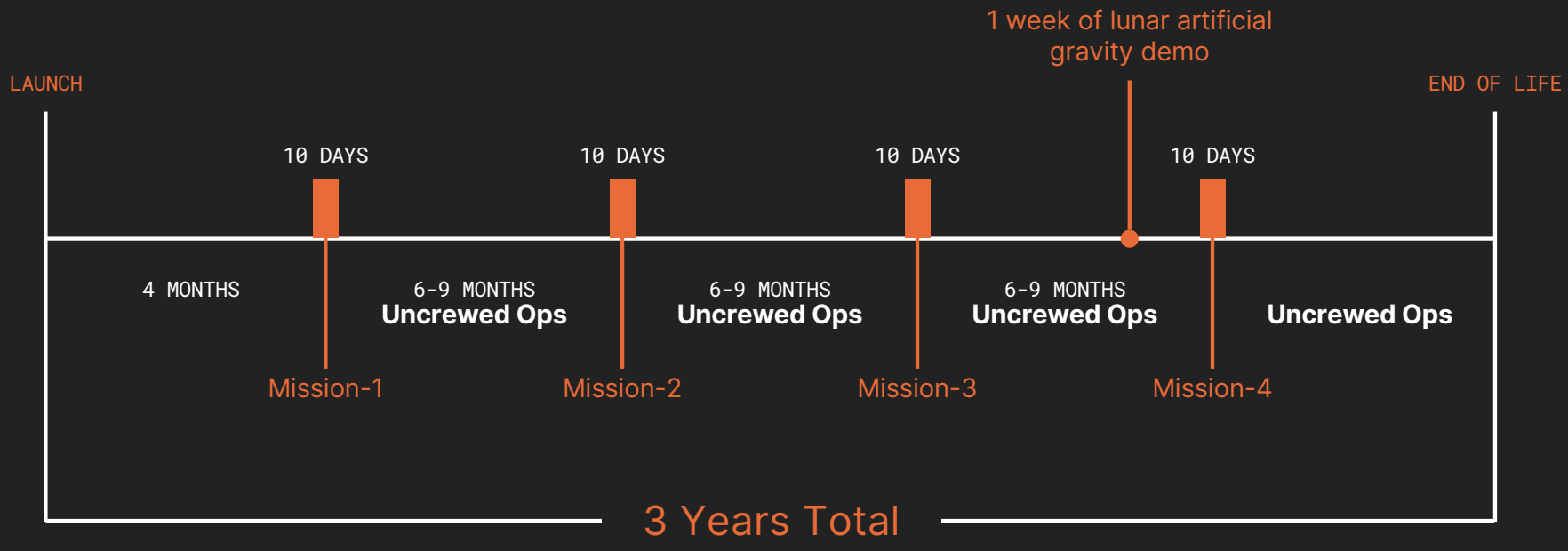
Lunar Gravity Demonstration

- Payloads have the opportunity to experience Lunar gravity for up to 1 week

Payload Features

- Integrate payloads prior to Haven-1 launch
- Crew-tended or autonomous payload operations
- Up & down mass cargo opportunities on Crew Dragon
- No restrictions on end-product sales and marketing

HAVEN-1 OVERALL TIMELINE



*DURATIONS SHOWN ARE NOTIONAL AND MAY CHANGE DEPENDING ON DESIRED CREWED MISSION DURATIONS

OUR TEAM– 500+

VAST COMBINED EXPERTISE

447

HUMAN SPACEFLIGHT YEARS

2,098

TOTAL SPACEFLIGHT YEARS

VAST LEADERSHIP

Jed McCaleb

FOUNDER, BOARD CHAIR & TECH FELLOW

Jed is a software engineer, entrepreneur, and philanthropist. He is renowned for founding Vast, Stellar, the Astera Institute, Ripple, and the eDonkey Network.

Max Haot

CHIEF EXECUTIVE OFFICER

Max is an aerospace, consumer electronic and internet entrepreneur. He joined Vast with the Launcher acquisition in 2023. Previously Max was Founder & CEO at Launcher.

Krystle Caponio

CHIEF LEGAL OFFICER

Served as SpaceX's first legal counsel based in its California headquarters. Formerly General Counsel and early team member at other successful space start-ups.

Alex Hudson

CHIEF TECHNOLOGY OFFICER

Proven track record of building and leading transformative R&D and Engineering teams in tech. Most recently the Vice President of Avionics at SpaceX.

Daniel DeMattia

CHIEF INFORMATION OFFICER

Over 20 years of experience designing, building, and operating critical infrastructure and systems, including as leader at SpaceX, Virgin Orbit, and Reliable Robotics.

Hillary Coe

CHIEF DESIGN AND MARKETING OFFICER

An Emmy-winning design leader who pioneered visual strategies for SpaceX's human spaceflight for NASA's Commercial Crew program. Also led innovative design for Google, Apple, and Starlink.

HUMAN SPACEFLIGHT ADVISOR

Andrew Feustel

Veteran NASA astronaut with 23 years of experience including NASA's acting Chief Astronaut from late 2022-early 2023, Deputy Chief of the Astronaut Office from 2020-2022, and flying 3 times to the ISS in 2018, 2011, and 2009.

PHOTO CREDIT: NASA

HUMAN SPACEFLIGHT ADVISOR

Garrett Reisman

Veteran NASA astronaut and space industry expert. Flew two missions to the ISS in 2008 and 2010, was the Director of Space Operations at SpaceX, and is a Professor of Astronautical Engineering at USC.

PHOTO CREDIT: NASA

VAST ADVISORS

Caryn Schenewerk

Experienced Regulatory & Government Affairs executive with a strong background in Space Law, Policy Analysis & Advocacy, Legal Compliance, Politics, and International Relations.

Hans Koenigsman

Previous Vice President of Mission Assurance for SpaceX, contributing significantly to the company's pioneering efforts in space exploration including human spaceflight.

Will Heltsley

Propulsion expert and was VP of Propulsion at SpaceX at the end of his 12 year tenure at the company. Direct contributions to all SpaceX boost engines including Merlin and Raptor, as well as additive manufacturing.

Yang Li

Previous Avionics Lead for SpaceX Dragon. Currently at Apple leading the user design and validation of the Apple Vision Pro, and previously at Waymo as the Self-Driving System Architect.

Peter Russell-Clarke

World-renowned industrial designer instrumental in the design of Apple's iPhones, iPads, Macs, and Apple Watches, as well as environments such as Apple's stores and HQ, and materials and processes.

Clay Mowry

25 years of experience, including roles as Chief Revenue Officer at Voyager Space and Vice President for Global Sales at Blue Origin. Demonstrated knowledge of the Commercial LEO Destinations (CLD) market, sales pioneer for the human suborbital spaceflight at Blue Origin.

NASA UPDATES

CCSC-2
In May 2023, NASA awarded Vast under the second Collaborations for Commercial Space Capabilities (CCSC-2) initiative.

Private Astronaut
Vast is bidding on Private Astronaut Missions (PAMs) 5-6.

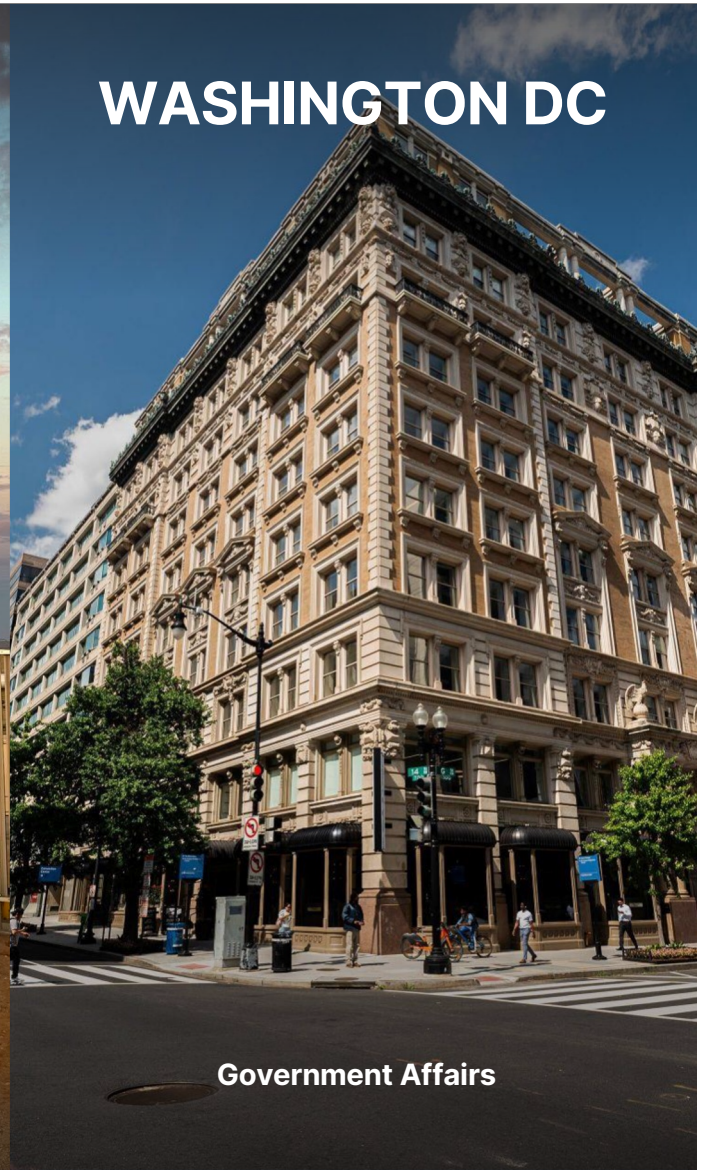
CLD Phase II
Haven-2 to bid on NASA's Commercial LEO Destinations (CLD) Phase II Certification and Services Contract.

LONG BEACH

Headquarters


HAWTHORNE, CA.
VAST
State-of-the-art manufacturing


MOJAVE, CA
VAST
Air and Space Port test site


WASHINGTON DC
Government Affairs

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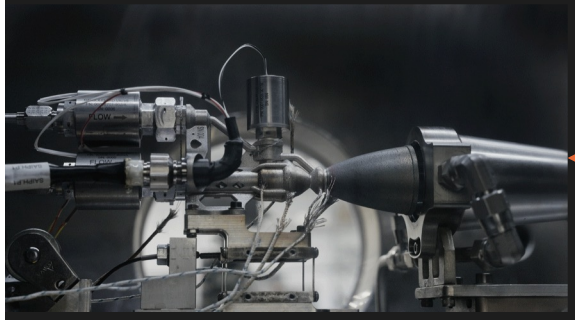

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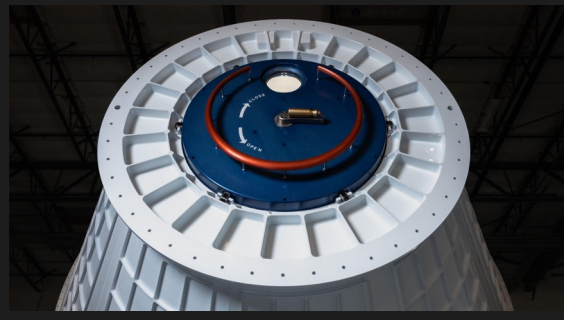

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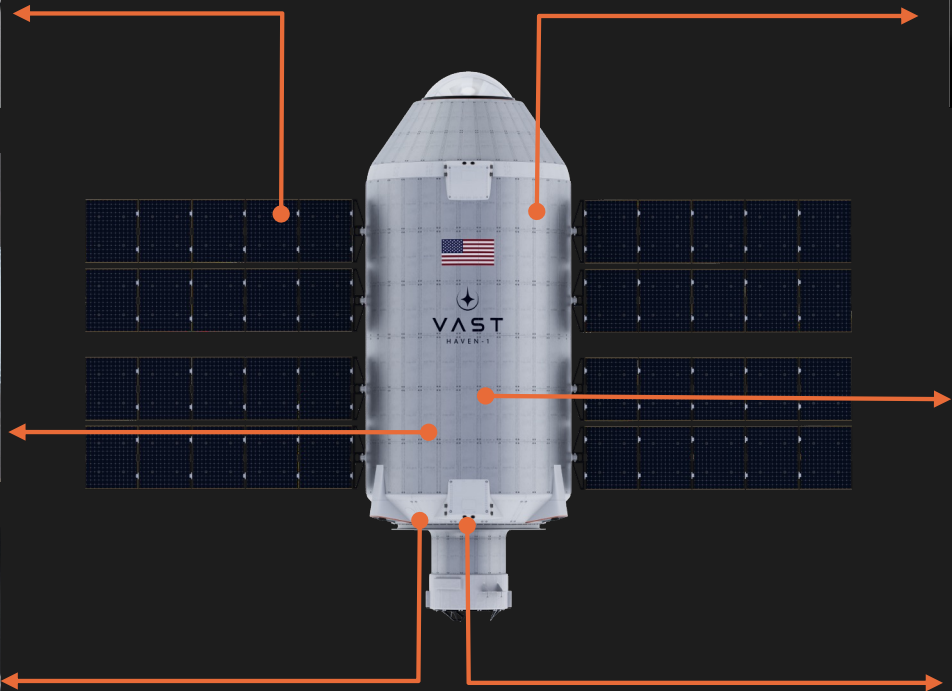
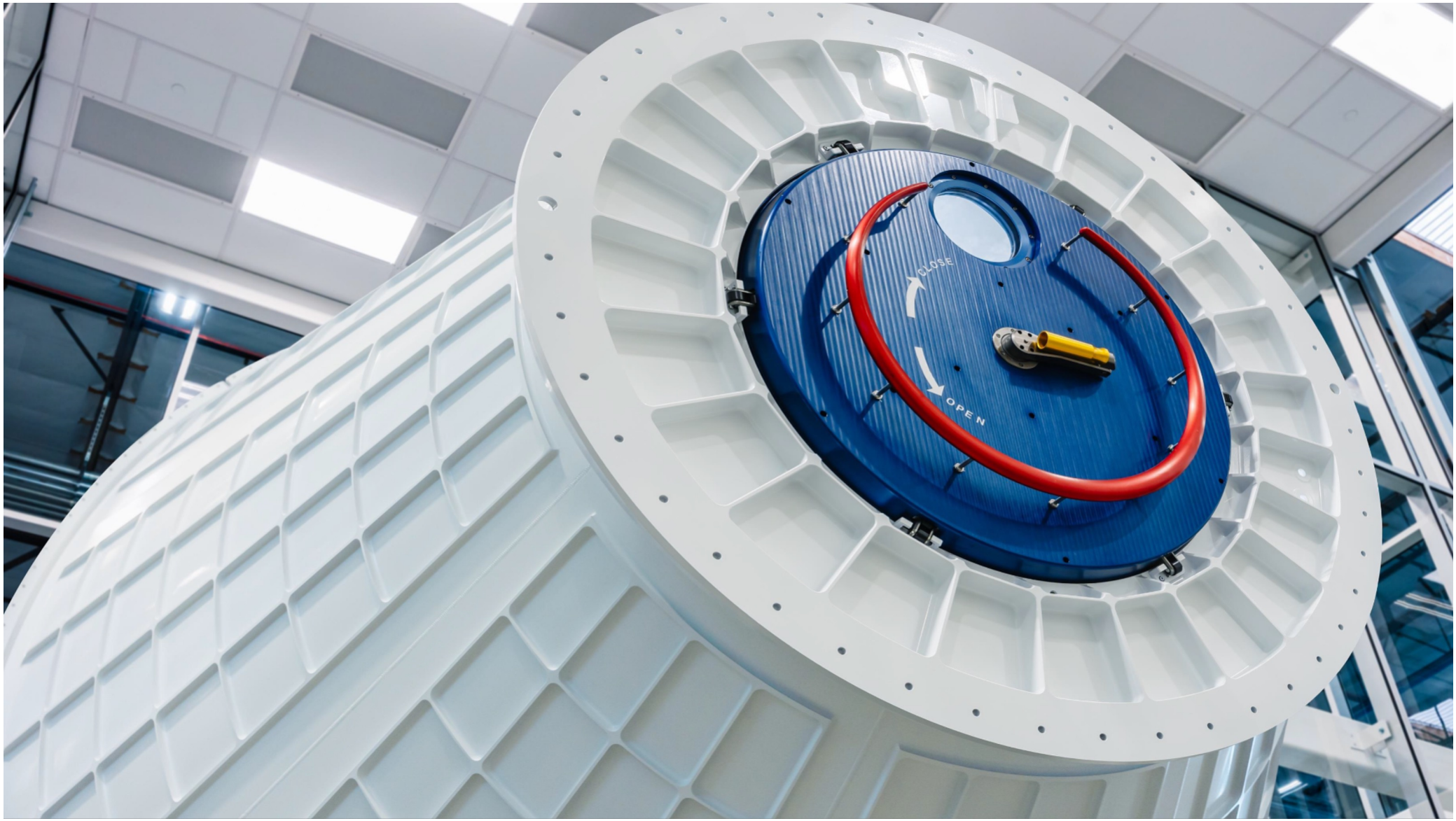



JLG
SUNNELL

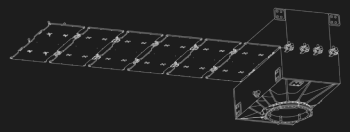

CLOSE
OPEN


ESA AND VAST PARTNERSHIP
esa
VAST
esa


NASA PRIVATE ASTRONAUT
MISSIONS (PAMs)

ROADMAP

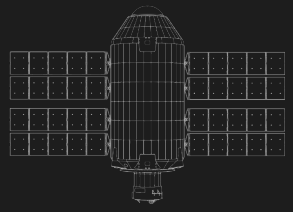
2025



Haven-Demo

- Testing systems for Haven-1 to support crew
- Aids Development of spaceflight/ team ops

2025



Haven-1

- Single module station
- Microgravity for payloads
- Up to 4 crew and 40 multi-mission days

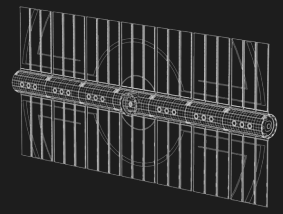
2028

COMING SOON

Multi-Module Station

- Multi-module station
- Advanced microgravity capabilities for commercial/government payloads
- Compatible with NASA's Commercial LEO Destination (CLD) Program

2030s



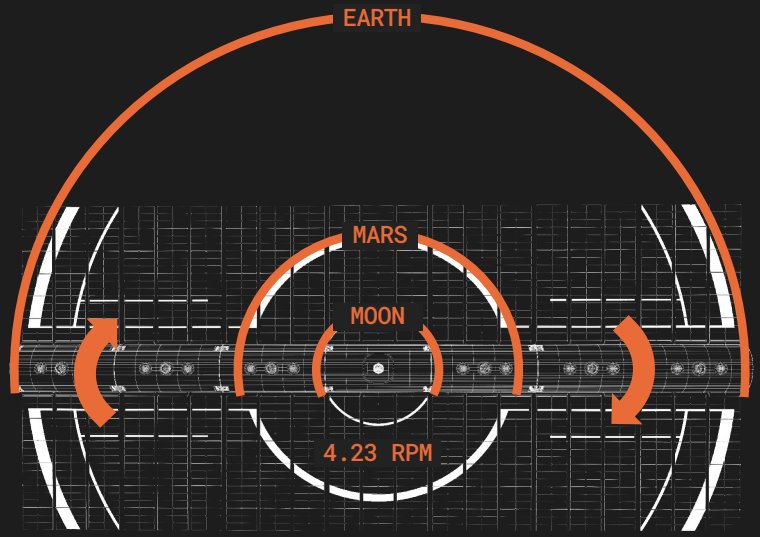
Artificial Gravity Station

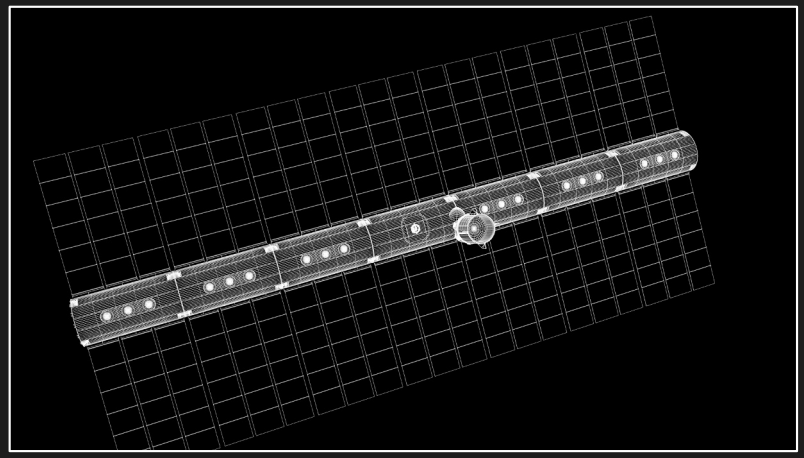
- 100+ meter spinning station
- Multiple individually launched Starship-class modules
- Earth, Mars, Moon, and microgravity for long term habitation and payloads

ARTIFICIAL GRAVITY STATION

- Artificial gravity generated by spinning the station end-over-end
- Station architecture is optimized for variable gravity experimentation

LENGTH	105 m
INTERNAL PRESSURIZED VOLUME DIAMETER	7 m
GRAVITATIONAL ENVIRONMENTS	Earth, Mars, Moon, Microgravity





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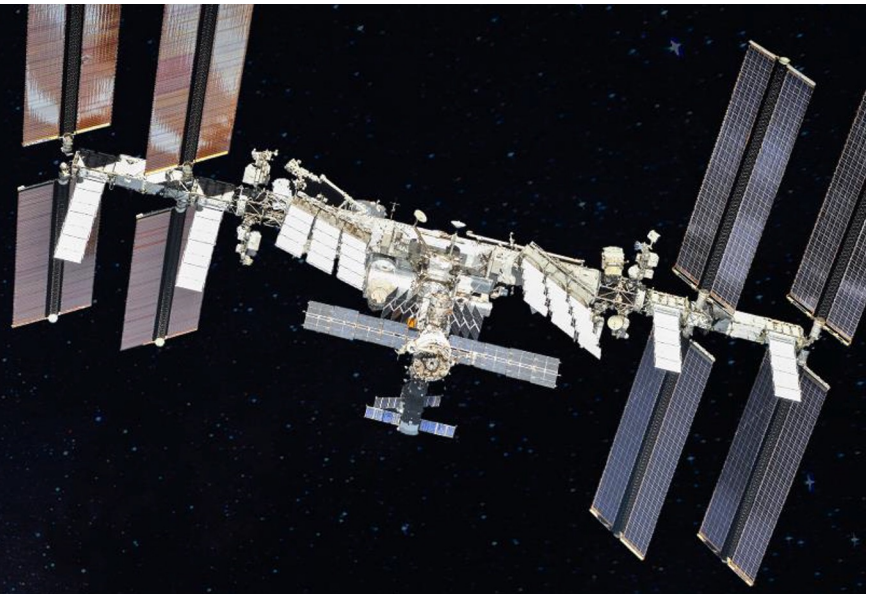
RECAP



- Vast is building and launching Haven-1, the world's first commercial space station
- Haven-1 offers near-term microgravity and lunar gravity research opportunities
- Vast is actively partnering with industry, government, and academia

For more information, please contact:

Dennis Stone, VP of Business Development

Dennis@vastspace.com