

Titans Space Pioneers New Astronaut Roles for In-Space R&D and Cis-Lunar Development, Establishing New Global Standards

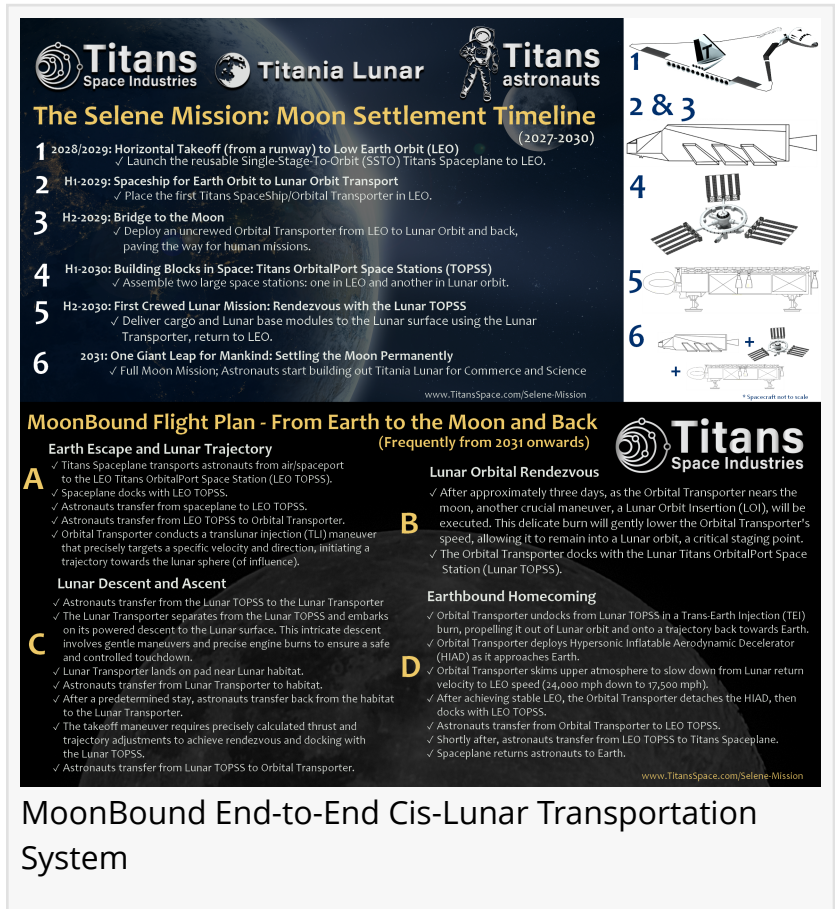
Titans Space introduces New R&D and Expedition & Development Astronaut Roles to Accommodate the Changing Needs of Next-Gen Space Transport and Commerce.

ORLANDO, FL, UNITED STATES, May 26, 2025 /EINPresswire.com/ -- Expanding on the established astronaut roles defined by the National Aeronautics and Space Administration (NASA), Titans Space Industries Inc. (TSI) recently announced two new, specialized astronaut categories: R&D (Research and Development) Astronauts and E&D (Expedition & Development) Astronauts.

As explained in TSI's recent [Manifesto](#), these roles are designed to accelerate innovation, infrastructure development, and sustained human presence beyond Earth, supported by training specific to TSI's multi-vehicle infrastructure. This initiative aims to establish new global standards in space exploration and development.

NASA has historically selected pilot astronauts, who command and pilot spacecraft and lead expeditions, and mission specialist astronauts, who support spacecraft operations, conduct experiments, and deploy satellites. Mission specialists often include engineers, scientists, and physicians, with educator astronauts also inspiring students in STEM fields.

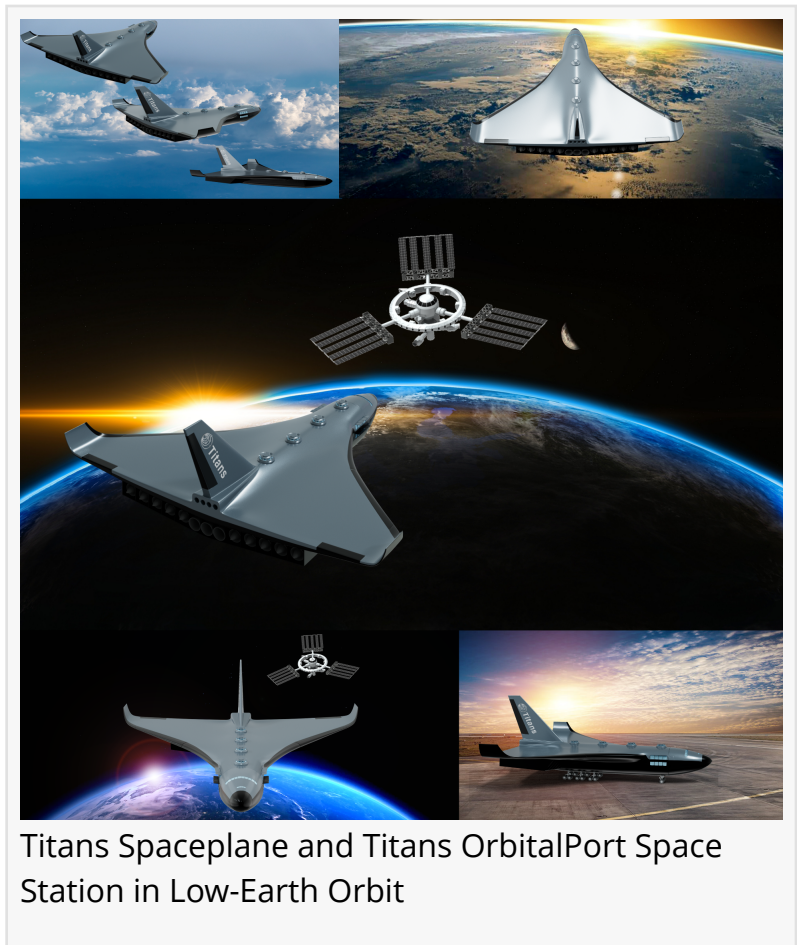
Titans Space Industries recognizes the changing needs of advanced space exploration and commercialization. TSI's new astronaut classifications are designed to meet these needs, representing a significant step in human spaceflight and supporting TSI's operational



framework.

TSI is taking a patient and careful approach to building a holistic cis-lunar infrastructure, rather than pursuing ad-hoc developments. This involves cultivating the right economic partnerships and incentives, securing technology and engineering partnerships, developing continuous innovation, and pursuing novel developments across the board.

As part of this strategic build-out, the company is currently finalizing its RFI (Request for Information) process to build factories and facilities in a number of sites in the United States for developing key components of its infrastructure, including spaceplane facilities, space stations, spaceships, lunar landers, rovers, habitats, and other essential elements for sustained cis-lunar operations.



Titans Spaceplane and Titans OrbitalPort Space Station in Low-Earth Orbit

Individuals selected for specialized roles as R&D Astronauts focus on pioneering scientific discovery and advancing new space technologies, and E&D Astronauts, tasked with constructing and maintaining vital in-space infrastructure, represent a new frontier in space human capital. Among these highly skilled professionals, those who demonstrate exceptional performance, adaptability, and leadership will be identified and offered the opportunity to transition into roles as "career astronauts."

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This multi-faceted approach to selecting, training, and integrating our astronauts sets a new global standard for space operations.”

*Colonel Bill McArthur, Chief
Astronaut, Titans Space
Missions*

This career astronaut designation signifies a long-term commitment to both terrestrial and extraterrestrial duties,

providing a stable and continuous professional path where they can leverage their unique expertise. It comes with the assurance of frequent opportunities to work in space, allowing them to build a substantial body of in-orbit experience. Crucially, their comprehensive and advanced training regimen is deeply integrated with the operational timeline of their respective programs, meaning their practical, hands-on astronaut training effectively begins with their participation in the [inaugural missions](#), ensuring they are not only prepared but also help to define and refine

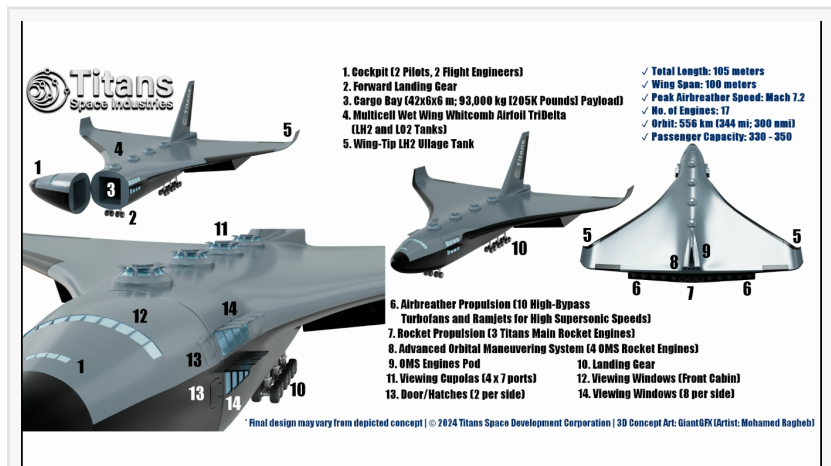
procedures from the very outset of these new space endeavors.

Titans Space Industries introduces the R&D (Research and Development) Astronauts.

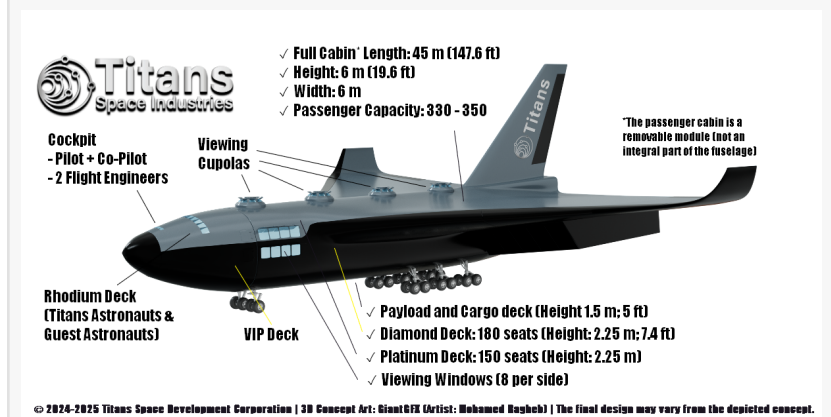
TSI's R&D Astronauts lead and perform research and development efforts in space. This group includes individuals from career scientists with PhDs in fields like biomedicine, materials science, or physics, to civilian scientists, individuals without traditional academic degrees, who will be paired with onboard degreed researchers to contribute their unique skills.

They will conduct hands-on testing, validation, and research of experimental technologies, prototypes, and applications, including medicines, for TSI and its commercial or institutional partners, within the microgravity environment. Their work covers in-space innovation, from advanced engineering and materials science to manufacturing processes, pushing the boundaries of what is possible beyond Earth. These astronauts will also collaborate with students, researchers, and institutions on Earth, conducting short-duration research on TSI's spaceplanes and long-duration investigations aboard TSI's space stations or on the lunar surface. This work starts on the ground, collaborating with TSI's engineers, scientists, and partners.

"Joining the inaugural class of R&D Astronaut candidates is an incredible honor," said Gitika Gorthi, an R&D AsCan from the class of 2025 and Founder of IgnitedThinkers. "The opportunity to contribute directly to groundbreaking research and development in space, working alongside both career scientists and civilian scientists, is exactly why I pursued this path. I set out on my journey to advance medicine from a unique perspective by utilizing space as a new laboratory,



Titans Spaceplane Design Overview



Titans Spaceplane Passenger Cabin Details



Titans Genesis Spaceplane approaching LEO Titans OrbitalPort Space Station (TOPSS)

and I am thrilled to have the chance to shape that research in the next few years. We're not just going to space; we're going to build the future of in-space medical innovation."

Titans Space Industries introduces the Expedition & Development Astronauts.

These individuals will perform tasks on spacecraft and space stations as defined by Titans Space Industries and its commercial or institutional partners. Their responsibilities include the development, assembly, and construction of structures and vehicles on-orbit and on the lunar surface, such as building lunar habitats and establishing infrastructure for sustained lunar presence.

Looking ahead, near-future work for E&D Astronauts will be critical for the on-orbit assembly of larger spacecraft (such as the Titans OrbitalPort Space Stations and the Titans Orbital Transporters/Spaceships, which will be launched with the Titans Spaceplane), executing space debris clean up missions utilizing a fleet of Titans Spaceplanes, and the construction and maintenance of gigantic space solar-power systems designed to beam terawatts of clean energy to both Earth and the Moon. This focus on on-orbit, in-space, and Lunar services, assembly, and construction is an area where TSI is establishing new global standards for off-world development. Similar to the R&D roles, these E&D specialists will begin their work on Earth, integrating with TSI and partner teams before their spaceflight missions.

The multi-vehicle infrastructure developed by Titans Space Industries, including spaceplanes for horizontal launch, orbital stations for staging and long-duration stays, interplanetary spaceships for transit, and specialized lunar vehicles, requires a new approach to astronaut training.

Given TSI's non-vertical-rocket launch system and complex cislunar operations, much of the current astronaut preparation is insufficient. TSI's training program will train candidates, depending on their mission roles, in the specifics of TSI's fleet and operational methods, from spaceplane maintenance to managing space stations, operating interplanetary spaceships, and using lunar vehicles for surface operations and construction. This training, specific to TSI's cislunar infrastructure, sets a new global standard for astronaut roles and training.

A significant portion of TSI's first group of R&D and E&D Astronauts will be involved in the final design review and analysis of TSI's cislunar multi-vehicle infrastructure, providing operational input from the start.

The Strategic Rationale, Explained

"Expanding human permanent presence beyond Earth and Low-Earth Orbit requires safe, reliable, efficient, and reusable infrastructure," added Neal S. Lachman, CEO and Chief of Spacecraft Design. "TSI's E&D Astronauts are the builders of this new era, constructing space infrastructure and lunar habitats, establishing orbital facilities and lunar real estate, manufacturing materials and goods in space, and developing an industrial-scale space and lunar

economy. Simultaneously, our R&D Astronauts are the pioneers of in-space innovation, revolutionizing scientific discovery and technological advancement in microgravity. The early involvement of both our E&D and R&D Astronauts in TSI's infrastructure design ensures their invaluable operational and research expertise is embedded from inception. Having future operators and researchers contribute directly to the final design and analysis of TSI's vehicles is revolutionary. It's about 'designing for space, by those who will live and work in it,' ensuring effective operation, safety, and efficiency."

Titans Space Missions commander [Bill McArthur](#) emphasized the practical aspects of these roles and the bespoke training. "Integrating R&D and E&D specialists directly into TSI's mission profiles enhances our capabilities significantly. The E&D astronauts are vital for the hands-on assembly and construction needed for our orbital stations and lunar bases, turning blueprints into tangible structures in space. Meanwhile, our R&D astronauts are focused on pushing the boundaries of scientific discovery and technological advancement in microgravity, directly contributing to innovations that will benefit humanity back on Earth and as we expand outwards. This critical R&D work is uniquely enabled by the robust, multi-modal infrastructure TSI is building. This multi-faceted approach to selecting, training, and integrating our astronauts sets a new global standard for space operations."

"Strategically, the introduction of R&D and E&D Astronauts has huge potential for TSI's commercial and institutional partnerships," commented Franklin Ratliff, Chief Technology Officer at Titans Space Industries. "This is a game-changer for the space economy, supported by a uniquely trained workforce meeting the challenges and opportunities of TSI's multi-vehicle ecosystem. Like all critical space missions, this work begins on the ground. Close collaboration with TSI's engineers, scientists, and partners here at Titans Space Industries. Crucially, a subset of these early astronauts will be embedded in the design and analysis phases of TSI's vehicles and infrastructure. This captures their invaluable operational experience and ensures it is ingrained from the blueprint stage into the very technology they will deploy."

Vaseema Hussain MCIAT, Director of Space Sustainability and Architecture, highlighted the long-term view. "For humanity's space efforts to be sustainable, TSI needs to design and build for longevity and resilience. TSI's new astronaut roles, particularly the E&D specialists focused on on-orbit and lunar construction and maintenance, are key to creating strong, lasting structures and systems that will serve future generations in space. Their direct engagement with TSI's complex infrastructure is essential for this sustainability, establishing new global standards through practical construction and maintenance in space."

"The future of humanity in space depends on what TSI can achieve at-scale, in the next five to ten years," stated Marcus Beaufort, Director of Business Operations and Space R&D Strategy. "TSI's R&D Astronauts are at the forefront of pioneering scientific discovery and technological advancement, directly involved in testing, validation, and research of experimental technologies and applications in microgravity. Equally crucial are our E&D Astronauts, who are essential for the development, assembly, and construction of the physical infrastructure needed for sustained

human presence in space, but also -for example- to build massive multi-terawatt space-based solar power systems for human utilization. The astronauts' collective work covers everything from in-space innovation in engineering and materials science to establishing orbital facilities and building lunar habitats. By including a wide range of individuals across both these specialized roles, from career scientists and engineers to civilian specialists, students, and institutions, and by offering both commercial and sponsored short-duration and longer expeditions, TSI is making space research, development, and exploration more accessible and impactful. This commitment to broad participation, scale, and frequency sets a new global standard for space exploration and access."

Titans Space Industries believes that these new, specialized astronaut roles, combined with their training and early involvement in infrastructure design, are crucial steps towards a future where humanity not only explores the universe but actively builds and thrives within it. By developing a workforce for in-space research and development, alongside orbital and lunar construction and maintenance, and by broadening access to space for diverse participants, Titans Space Industries is setting a new standard for the scope and ambition of human spaceflight across astronaut roles, vehicle design, in-space R&D, orbital/lunar construction, and space exploration itself.

Spaceplane and Space Station Operations

The Titans Spaceplane is specifically designed to provide safe, reliable, efficient, and low-cost transportation for astronauts and cargo to and from the Titans OrbitalPort Space Station. Much like NASA's Space Shuttle ferried astronauts and supplies to and from Low Earth Orbit, the Titans spaceplanes will perform a similar function, with a key difference: the Titans Spaceplane is a Single-Stage-To-Orbit (SSTO), Horizontal Takeoff and Horizontal Landing (HTHL) vehicle, while the Space Shuttle utilized a vertical takeoff configuration. This unique design dramatically increases safety (because there are no explosive take-offs and stage separations) for the crew, streamlines operations and rapid reusability, and significantly reduces the cost per flight compared to traditional rocket systems.

The Inaugural spaceplane flight is followed by frequent dedicated EarthLoop missions, providing an unprecedented platform for short-duration microgravity research. These EarthLoop flights are unique in that virtually all passengers aboard will be research crew, participating in a diverse array of scientific experiments. Each EarthLoop mission offers approximately three hours of sustained microgravity, a duration ideally suited for a wide range of scientific investigations.

This capability complements the long-duration research conducted on the Titans OrbitalPort Space Station, enabling a comprehensive understanding of microgravity's effects across varying timeframes. The scale of EarthLoop operations, with frequent flights carrying large numbers of research crew, represents a seismic shift in the accessibility of microgravity, revolutionizing fields such as materials science, biotechnology, and pharmaceuticals. By dramatically increasing the volume of microgravity research, EarthLoop and TOPSS missions will help accelerate the

development of new technologies, medicines, and manufacturing processes.

Recognizing the growing demand for access to LEO, Titans Space Industries is offering comprehensive 1-month all-inclusive mission packages to companies, space agencies, and research institutions for a fixed price of \$25 million. Each package includes transportation for two astronauts to and from TOPSS aboard a Titans Spaceplane, as well as accommodation and support within the station for the duration of the mission. This offering provides a cost-effective and streamlined pathway for organizations to conduct research, perform manufacturing processes, or gain firsthand experience in the unique environment of low Earth orbit.

About Titans Space Industries

Titans Space Industries (TSI) is dedicated to developing safe, innovative, and cost-effective cis-lunar space exploration technologies. The company is committed to making space accessible to all and is working to develop a variety of spaceflight programs, including human spaceflight, cargo transportation, and space exploration. TSI's vision is to lead the way in making space travel a reality for millions of people around the world.

With a combined 600 years of experience in business and aerospace, TSI's founding team boasts an unparalleled depth of knowledge and expertise. This seasoned leadership brings together the sharpest minds in both fields, ensuring strategic brilliance and operational excellence. Further amplifying this expertise, the company's development of factories and facilities throughout the U.S. will be under the leadership of a senior management team with a combined 1,000 years in aerospace, including director roles of the NASA Space Shuttle program and ISS missions. This wealth of hands-on experience guarantees the highest standards in manufacturing, safety, and innovation for all Titans Space projects.

Further Information:

- Titans Space Industries Business & Investment Thesis: www.TitansSpace.com/TSI-Investment/
- Titans Space Industries Manifesto: Introducing a New Paradigm for Space Access and Leading the Next-Gen Space Economy <https://www.linkedin.com/pulse/titans-space-industries-manifesto-introducing-new-paradigm-lachman-srrle/>

About the Titans Astronauts Corps

Titans Space Industries has established the "Titans Astronauts" program, an exclusive, subscription-based membership granting unlimited access to future space missions and related experiences, including frequent lunar visits. With a target membership of up to 2,000 ultra-wealthy individuals joining the program through 2030, each paying \$25 million over a six-quarter period, this program will generate a substantial (lump sum, non-recurring) revenue stream and create a community of dedicated space enthusiasts contributing to the long-term sustainability of TSI's space tourism initiatives.

Further Information: www.TitansSpace.com/Titans-Astronauts

Further Information

- Titans Space Industries FAQs: <https://titansspace.com/faq/>

Space Tourism & Exploration

- Space Exploration Overview: <https://titansspace.com/titans-space-exploration/>
- Inaugural Astronauts: <https://titansspace.com/inaugural-astronauts/>
- LEO Space Tourism (video): https://youtu.be/vluMF_4K3s
- EarthLoop Orbital Cruise (five-hour mission): <https://titansspace.com/earthloop/>
- EarthLoop (video): https://youtu.be/LAJ1SV_TfvA
- OrbitalLoop Three-Day Superyacht Expedition: <https://titansspace.com/orbitalloop/>
- LEO Space Hotel: <https://titansspace.com/leo-orbitalport-space-station/>
- Lunar Orbital Hotel: <https://titansspace.com/lunar-orbital-hotel/>
- Titania Lunar Resort: <https://titansspace.com/titania-lunar-resort/>
- Titans Astronauts: <https://titansspace.com/titans-astronauts/>
- Titans Space Society: <https://titansspace.com/titans-space-society/>

Technology

- Titans Spaceplanes: <https://titansspace.com/titans-spaceplanes/>
- Titans Spaceplanes (video): <https://youtu.be/1vOzgahx8us>
- Titans Engines Systems: <https://titansspace.com/titans-engines-systems/>
- Titans SpaceShips/Orbital Transporters: <https://titansspace.com/spaceship/>

Library

- White Papers & Analyses: <https://titansspace.com/library-analyses-white-papers/>

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