

A Bridge to the Future

SpaceTech White Paper

THE BURGEONING SPACE ECONOMY: LOOKING BACK TO 2024

Introduction

The space industry continued to evolve, in terms of both achievements and investments, in 2024. At the same time, there were significant setbacks that will require corrective action as we move into 2025. On the positive side, SpaceX launched three Starships this year, and achieved the remarkable feat of capturing the booster rocket from one of the missions with its “chapsticks,” or “Mechanzilla,” which was waiting back at the launch pad. Financially, the company’s valuation hit \$350 billion, based on a secondary share sale. SpaceX also participated in the historic Polaris Dawn mission, which saw the first civilian “spacewalk, when crew members Jared Isaacman and Sarah Gillis emerged from within the Dragon capsule one after the other and performed brief tests of their new spacesuits, which had never before been exposed to the vacuum of outer space.

In another milestone, Intuitive Machines successfully launched its robotic lunar lander Odysseus and landed it on the Moon. Although “Odie” tipped over on its side after landing, it was still able to transmit valuable data back to Earth. This was the first private American mission to the Moon, and was deemed a success in spite of its collapse as it touched down. The Moon was, in fact, a very busy place in 2024. Japan also sent a mission there, and China’s Chang’e 6 made the first sample return mission from the Moon’s far side. On the negative side, Boeing’s Starliner was finally able to launch and send two astronauts to the ISS. However, the spacecraft encountered problems along the way, and NASA decided to keep astronauts Butch Wilmore and Suni Williams on the space station far beyond their original return date. They are now scheduled to return to Earth on a Dragon capsule in February of 2025. In addition, after an extensive evaluation of heatshield problems on the Artemis 1 uncrewed mission, NASA decided to push off the Artemis 2 flyby of the Moon until 2026.

For American space buffs, perhaps the most interesting news was President-elect Trump’s announcement that he would nominate Jared Issacman, primary funding source and commander of Polaris Dawn, to become the new NASA Administrator. Isaacman, a high school dropout with an entrepreneurial streak, became a billionaire and has now funded two private space missions, Inspiration 4 and Polaris Dawn. Isaacman is close to Elon Musk, and has a strong interest in Mars, as does the SpaceX leader. It remains to be seen if this tandem will create any major changes in NASA’s policies or missions. Worldwide, investment in space activities continued to accelerate, and talk of an emerging cislunar economy showed no signs of diminishing. Overall, it was an exciting year for the space community, with more to come in 2025.

ORBITING OPPORTUNITIES: THE \$1.8T SPACE ECONOMY AND ITS TERRESTRIAL APPLICATIONS

The global space economy is projected to reach \$1.8 trillion by 2035, underscoring the increasing investment and innovation in this sector. We believe that this growth is not merely about exploring the cosmos but also about driving progress across various industries here on Earth. The evolution of space technology, from ancient rockets to modern spacecraft and satellites, has been marked by historic milestones. While Neil Armstrong’s moonwalk is an iconic image, it’s essential to recognize earlier innovations like the liquid propulsion rocket launched by Robert Goddard in 1926 and Germany’s V2 rocket during World War II. These advancements laid the foundation for today’s sophisticated space technology.

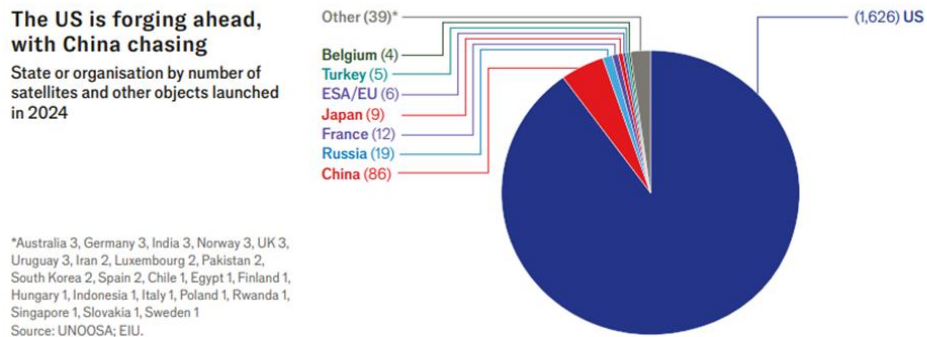
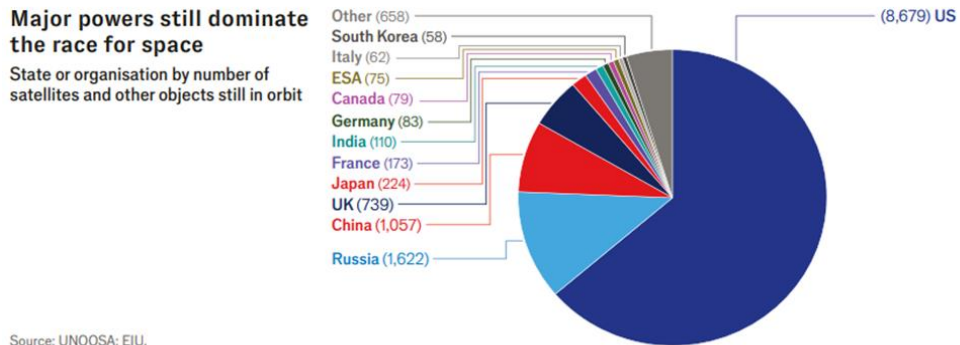
Today, SpaceTech players are pushing boundaries in mobility, robotics, additive manufacturing, and more. These advancements not only enhance our exploration capabilities but also open up exciting possibilities on Earth. **The “new space race,” driven by business rather than competition between nations, aims to address key issues in**

communication, the environment, agriculture, national security, and other areas of life. This is evident in the nearly \$6 billion funding to VC-backed startups in this area. Satellite technology, for instance, offers greater global connectivity, enabling remote communities to access information and receive virtual healthcare services. Starlink by SpaceX provides satellite Internet services, transforming global communication, while Contec offers a global ground network for quick satellite data analysis. Moreover, satellites power the **Global Positioning System (GPS)**, enhancing travel safety and environmental monitoring. Space missions have also driven advancements in lithium-ion battery technology, benefiting electric vehicles and consumer electronics. Medical imaging processes developed for astronauts have spurred device creation and telemedicine, improving healthcare access in remote communities. Companies like Ecoatoms design biological hardware and devices for space use with terrestrial applications in mind.

THE UNITED STATES: STILL THE PACESETTER, BUT PRESSURES MOUNT

The global space economy is undergoing a profound metamorphosis, driven by technological advancements, falling costs, and an influx of private-sector involvement. The United States, long the dominant force in space exploration and commercialization, now faces increasing competition from nations eager to carve out their own niches in this burgeoning market. **The United States maintains its leadership in the global space sector, boasting over 8,600 satellites in orbit and 20 operational spaceports.** This dominance is bolstered by robust public-private partnerships, notably between NASA and firms like SpaceX. These collaborations have accelerated satellite launches and reduced costs through innovations such as reusable rockets. In 2023, commercial activities accounted for \$445 billion of the U.S.'s \$570 billion in space sector revenue, with SpaceX's Starlink constellation dominating the Low Earth Orbit (LEO) satellite market. However, the U.S. faces internal and external pressures, including calls for greater competition in satellite services and the need to address emerging challenges like orbital debris. Despite these hurdles, we believe that the **U.S. leadership is deeply rooted in both funding and infrastructure, ensuring it will remain at the forefront of space exploration and commercialization.**

Chart 1: The U.S. Leads on Space Activity



Source: Intro-act, The Economist Intelligence Unit Limited 2024

An [EIU](#) report underscores the growing ambitions of countries like China, Russia, and India, which are rapidly expanding their space capabilities. China, ranked second in space activity, is developing large satellite constellations and planning ambitious lunar missions. However, its reliance on state funding and limited access to reusable rocket technology constrain its progress. Meanwhile, Russia struggles with outdated infrastructure and budget limitations despite its plans to remain a major space player post-International Space Station (ISS). Developing nations are also making significant strides; India, ranked tenth overall, is enhancing its launch capabilities and building new spaceports, aiming to become a regional leader. In the Middle East, the UAE and Saudi Arabia are investing heavily in space-related projects as part of broader economic diversification strategies. **We think this shift toward regional hubs of innovation signals a more multipolar future for the global space sector.**

OPPORTUNITIES ABOUND, BUT CHALLENGES LOOM

The future of the space economy depends on balancing growth in infrastructure with the development of new applications. Satellite-based communication services, Earth observation, and navigation systems represent the backbone of current commercial activity. Emerging opportunities such as space tourism, mining, and solar power generation promise to expand the industry's reach but also come with significant risks. Orbital congestion, space debris, and regulatory gaps pose serious threats to the sustainable growth of the sector. Developing nations face additional hurdles, including limited funding and a reliance on external partnerships. **We believe that implementing innovative business models—such as subscription-based satellite services, data monetization strategies, and partnerships for in-orbit maintenance—will be critical for maximizing the economic opportunities of space exploration and commercialization.** As the global space economy enters a transformative phase, marked by increased competition, innovation, and complexity, we think it is crucial for both established and emerging players to address challenges such as orbital congestion, debris mitigation, and equitable access to space. The next decade will be pivotal in shaping the future of the spacetech industry, determining whether it becomes a truly global enterprise or remains dominated by a few key actors. Stronger international frameworks will be essential in navigating this complex landscape and unlocking the full potential of the space economy.

LEVERAGING AMERICAN ENTREPRENEURSHIP TO WIN THE NEW SPACE COMPETITION

The global balance of power is inexorably shifting toward outer space, with tomorrow's conflicts likely being fought above Earth rather than on it. This strategic reality, often overlooked by the public, underscores the urgency for the United States to maintain its dominance in this new frontier. China, with its meticulous planning and execution, is rapidly closing the gap, threatening to surpass the U.S. in space power within decades. China's satellite fleet has grown exponentially in a decade, mirroring U.S. systems like GPS and remote sensing, and now includes a constellation reminiscent of SpaceX's Starlink broadband system.

The stakes are indeed high. Economic dominance is intrinsically linked to military superiority, and whoever leads commercially in space will likely dominate the global stage. Furthermore, space has long been America's "shining city on the hill," and maintaining this soft power requires continued leadership in space exploration and innovation. Given China's proven prowess in copying technologies, can America outpace its rival and retain its edge in space? **We believe the answer lies not in trying to outdo China at its own game but rather in leveraging America's unique strengths.** While China excels at central planning, America's distinct advantage is its culture of freedom, which fosters entrepreneurial innovation like no other. Historically, NASA has demonstrated success by partnering with U.S. commercial industry to create breakthrough capabilities, such as **SpaceX's Falcon launchers** and **Dragon spacecraft**.

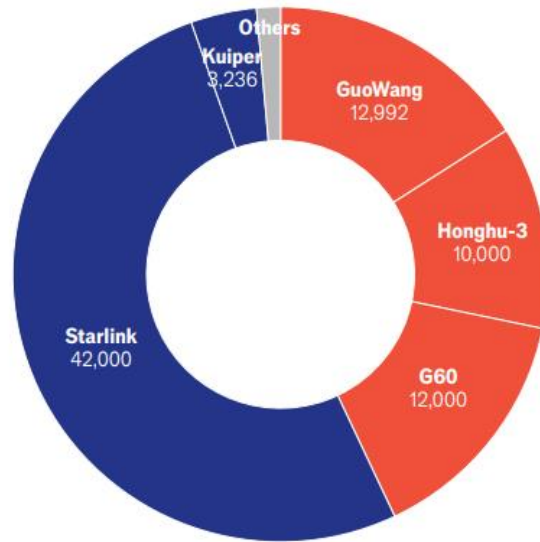
We think it's crucial for NASA and the U.S. Space Force to double down on these commercial partnerships. The private sector's speed and innovation are vital in countering China's strategic breakout in space. By embracing this approach, the U.S. can change the game once again and secure America's position as the leading force in space exploration and commerce.

Chart 2: How Countries are Challenging the US Dominance Of Space

The US and China will dominate competition for low-Earth orbit

Number of planned satellites in megaconstellations, based on ITU filings

- Chinese firms
- US firms
- Other



Note: this is a partial listing of major LEO satellite operators. "Others" also include US operators with much smaller satellite

Source: ITU; Hinrich Foundation; EIU.

Source: Intro-act, The Economist Intelligence Unit Limited 2024

U.S. SPACE EXPORT CONTROL REFORMS

The U.S. space industry has witnessed significant strides in export control reforms over the past decade, with a notable victory achieved when many space technologies were shifted from the U.S. Munitions List (USML) to the less-restrictive Commerce Control List (CCL). This move, enacted by the State Department in 2014, aimed to facilitate exports of American space technologies to foreign customers while maintaining national security. However, the pace of technological advancements and global capabilities have outstripped the frequency of export control reviews, prompting calls for more regular updates.

In a recent development, the U.S. Commerce Department announced three rules alongside one from the State Department, collectively aiming to streamline export controls while safeguarding sensitive technologies. Two of these rules simplify license requirements for certain items, benefiting countries like Australia, Canada, and key European allies. The first finalized rule eliminates licensing needs for exporting remote sensing spacecraft and related components to select nations, while the second "interim final" rule reduces license requirements for 40 countries, primarily close allies. The third Commerce Department rule, along with a State Department counterpart, proposes moving specific space technologies from the USML to the CCL. This includes in-space refueling logistics, certain components like optics and electric thrusters, and gyroscopes. Notably, these proposed rules create license exemptions for commercial technologies used in official space agency programs, such as Mars Sample Return missions and NASA's Commercial LEO Destinations program.

We believe these reforms are a step forward in maintaining U.S. leadership in space technology while fostering international cooperation. However, we think it's crucial to monitor the public comment period, which closes on November 22, to understand industry feedback on specific aspects like the bandwidth threshold for synthetic aperture radar (SAR) satellites. The phased implementation of these rules is expected to continue into early 2025, with officials emphasizing their commitment to completing the process despite administrative changes. We anticipate that this ongoing effort will help shape a more agile and secure export control regime for U.S. space technologies in the years ahead.

NASA'S 2024 MILESTONES: A GIANT LEAP FOR SPACE EXPLORATION AND ECONOMIC IMPACT

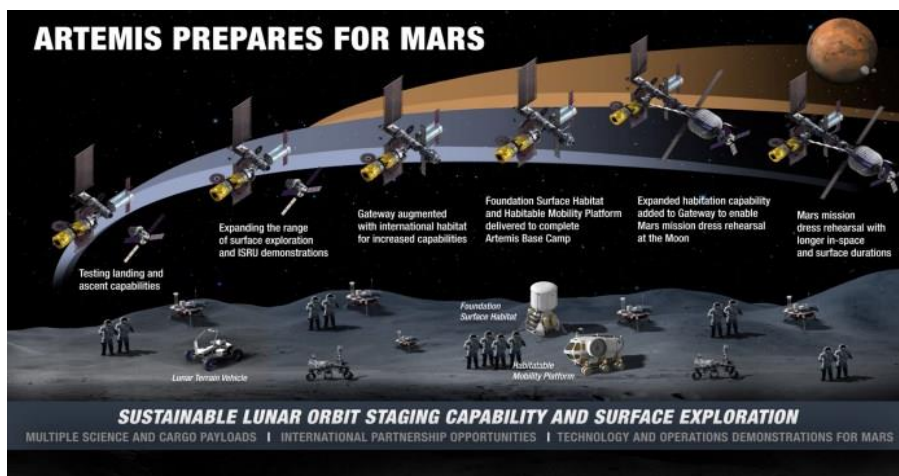
In 2024, NASA demonstrated its commitment to pushing the boundaries of space exploration, Earth science, and technological innovation, as outlined in a recent article. The agency marked significant achievements across various missions, from landing new science and technology on the Moon with an American company for the first time, to launching a new mission to study Jupiter's icy moon Europa. These accomplishments not only expanded humanity's understanding of the universe but also underscored NASA's dedication to fostering commercial and international partnerships. **One of the most notable feats was NASA's progress in securing support for the Artemis Accords.** A total of 15 countries signed the Artemis Accords, signaling a collective commitment to safe, transparent, and responsible space exploration with the United States.

NASA's focus on Earth science also bore fruit in 2024. The agency launched multiple satellites to monitor climate change and opened its second Earth Information Center, making critical data more accessible to a wider audience. This dedication to understanding our home planet is not only vital for environmental conservation but also contributes to NASA's overall mission of benefiting humanity. We believe that NASA's economic impact on the United States is equally impressive. **According to the agency's latest Economic Impact Report, NASA contributed \$75.6 billion to the U.S. economy in 2024.** This figure highlights the significant return on investment for taxpayers and underscores NASA's role in driving American innovation, workforce development, and economic competitiveness. We think that continued investments in NASA will continue to propel U.S. leadership both domestically and internationally.

NASA'S ARTEMIS AMBITIONS

The agency announced updated timelines for Artemis II and III, following a comprehensive Orion heat shield investigation. Meanwhile, the core stage and launch vehicle stage adapter of the Space Launch System (SLS) rocket were delivered from NASA's Michoud Assembly Facility to Kennedy Space Center, with booster segments beginning to be stacked at the latter location. Safety measures were bolstered by the addition of an emergency egress system on the mobile launcher at Launch Pad 39B. Integrated testing of the Orion spacecraft was PI conducted under deep space vacuum conditions, ensuring its readiness for a crewed mission around the Moon. Astronauts and support teams engaged in crucial training activities, including sea recovery operations and launch countdown simulations. The **Commercial Lunar Payload Services (CLPS)** initiative saw success with Intuitive Machines' Nova-C lander, which captured valuable data from the lunar surface. NASA also announced plans for a new set of science experiments and technology demonstrations to arrive at the lunar South Pole in 2027 via CLPS. To facilitate Mars sample return, NASA explored innovative designs and assembled a strategy review team.

Chart 3: NASA's Ambitious Plan for Sustained Lunar Exploration and Development



Source: Intro-act, New Space Economy, NASA

Mars Exploration and Lunar Infrastructure

On Mars, NASA's MAVEN spacecraft celebrated a decade of exploring the Red Planet's upper atmosphere. The Ingenuity Mars Helicopter concluded its mission after three years, having completed dozens more flights than initially planned. In support of lunar communications, **Intuitive Machines** was contracted to support NASA's Near Space Network. NASA identified nine potential landing regions near the lunar South Pole for Artemis III and released the second revision of its Architecture Definition Document. International collaborations were strengthened with agreements signed with the United Arab Emirates and Japan for Gateway airlock module and pressurized rover development, respectively.

Technological Advancements and Collaborations

A range of technologies were tested and evaluated in 2024 to ensure readiness for lunar missions. Astronauts and engineers participated in moonwalk simulations in Arizona, while human factors testing was conducted for the Gateway. NASA worked collaboratively with SpaceX and Blue Origin on their human lunar landers, exercising an option under existing contracts. In a step toward sustainable lunar exploration, NASA issued a Request for Information to seek interest from American companies and institutions in conducting a mission using its **VIPER Moon rover**. The agency also selected three companies to advance capabilities for a lunar terrain vehicle that Artemis astronauts will use to traverse the lunar surface.

ADVANCING EARTH SCIENCE AND SOLAR SYSTEM EXPLORATION

NASA kicked off 2024 with significant strides in its mission areas of observing and learning about Earth, exploring our solar system, and pushing the boundaries of astrophysics. We believe these accomplishments will have profound implications for understanding our planet's climate, searching for life beyond Earth, and unraveling the mysteries of the universe. In Earth science, NASA demonstrated its commitment to monitoring our home planet's health with several notable missions. The **PACE satellite mission**, launched in February 2024, is already transmitting data on ocean health, air quality, and climate effects. We think this will provide valuable insights into how human activities impact our environment. Meanwhile, the **TEMPO** instrument offered near-real-time air pollution observations at an unparalleled neighborhood scale, aiding local authorities in decision-making processes. Furthermore, the **PREFIRE CubeSats** began collecting data on heat emissions from Arctic and Antarctic environments, adding crucial information to our understanding of these sensitive regions.

NASA also enhanced its disaster response capabilities with the rollout of the **Disaster Response Coordination System**. This resource delivers up-to-date information on various extreme events to emergency managers, potentially saving lives and mitigating damage. In solar system exploration, **NASA's Europa Clipper** embarked on its journey to Jupiter in October, aiming to investigate Europa's subsurface ocean for signs of life. This mission, along with others like **OSIRIS-Rex** and **Voyager**, underscores NASA's commitment to exploring our celestial neighborhood.

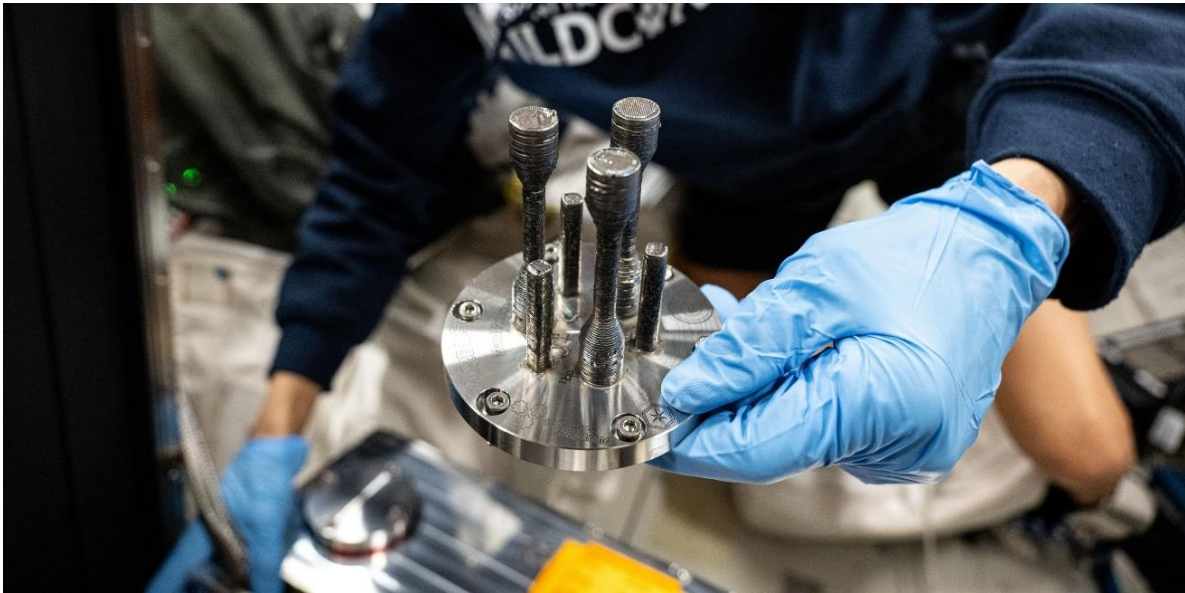
NASA also made significant progress in astrophysics research. The **James Webb Space Telescope** marked over two years in space, transforming our view of the universe with its observations of distant galaxies and exoplanet atmospheres. Moreover, NASA selected a new space telescope, **UVEX**, to survey ultraviolet light across the entire sky. We think these investments will lead to groundbreaking discoveries about the cosmos. Finally, NASA continued to develop innovative technologies for future missions. The establishment of the **Astrophysics Probe Explorers** class and the maturation of technologies for the **Habitable Worlds Observatory** are testament to NASA's commitment to pushing technological boundaries.

ORBITING ACHIEVEMENTS & AERONAUTICAL ADVANCEMENTS IN 2024

In 2024, the International Space Station (ISS) buzzed with activity, hosting a record-breaking 25 residents who dedicated their time to scientific research and exploration. To some extent, this population growth was unintended, with Astronauts Butch Wilmore and Suni Williams remaining on board for an extended period when

NASA decided it was not safe to return them to Earth aboard Starliner. This influx of personnel was supported by an impressive 14 spacecraft visits, including eight commercial resupply missions from Northrop Grumman and SpaceX. These missions delivered over 40,000 pounds of critical supplies, tools, and science investigations, fostering a microgravity laboratory that yielded invaluable data for humanity's benefit. **The ISS welcomed its newest astronauts in March 2024, with NASA graduating the Artemis Generation class and receiving an overwhelming response from applicants seeking to join their ranks.** The space station saw several crew rotations throughout the year,

Chart 4: The First Shape Created with the 3D Metal Printer



Source: Intro-act, New Atlas, ESA, NASA

HARNESSING THE FUTURE: NASA'S STRATEGIC ADVANCEMENTS IN LEO ECONOMY

In a strategic move to foster a thriving LEO economy, NASA has unveiled its microgravity strategy, comprising 42 objectives aimed at guiding the next generation of human presence and advancing scientific exploration. This comprehensive roadmap is currently being refined with stakeholder feedback and will be finalized by year-end. We believe this initiative signals NASA's commitment to making LEO a sustainable and vibrant hub for innovation and research. NASA's collaboration with private industry has yielded significant advancements in developing commercial space stations. The agency has modified agreements with two funded partners, keeping them on track to create LEO destinations for NASA and other customers. Notably, **Blue Origin's Orbital Reef**, a NASA-funded project, has successfully completed multiple testing milestones for its life support system. Meanwhile, Sierra Space's **LIFE habitat structure** passed a full-scale ultimate burst pressure test, demonstrating the robustness of its design. We think these advancements underscore the potential of public-private partnerships in accelerating space infrastructure development.

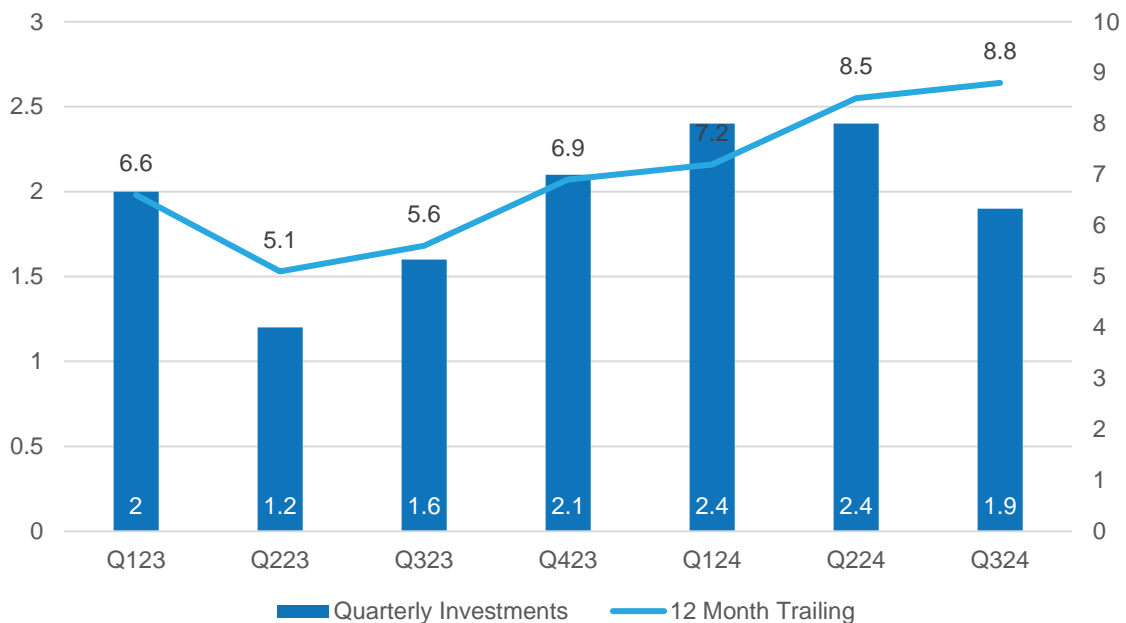
In parallel, NASA's industry partners have made substantial strides through initiatives like Collaborations for Commercial Space Capabilities and Small Business Innovation Research Ignite. These programs have facilitated safety milestones, successful flight tests, and major technological advancements, further enriching the LEO ecosystem. Moreover, NASA has shared its medical expertise and human system integration knowledge to aid in developing safe, reliable, innovative, and cost-effective space stations. We believe this collaborative approach will not only benefit NASA but also stimulate growth across the broader SpaceTech industry. To ensure the long-term sustainability of the rapidly evolving space environment, NASA has released an integrated **Space Sustainability Strategy**. This proactive measure addresses the need for responsible space operations and resource management, thereby preserving LEO for future generations.

Additionally, NASA's Glenn Research Center has successfully streamed 4K video footage from an aircraft to the space station using optical communications, marking a significant milestone in high-speed data transmission capabilities.

SPACETECH INVESTMENT MOMENTUM CONTINUES UNABATED

As per Seraphim Space Index's Report, the SpaceTech sector has maintained its robust growth trajectory, with five consecutive quarters of increasing investment on a trailing twelve-month basis. As of Q3 2024, total investment reached \$8.8 billion, up from \$8.5 billion in the trailing twelve months to Q2 2024. This upward trend is mirrored by the volume of deals completed, which has seen steady growth for four consecutive quarters, culminating in a record **595 SpaceTech deals in the last 12 months**. Capital concentration in Q3 2024 was notable, with capex-intensive businesses drawing significant investment. However, the largest deal of the quarter stood out: spatial intelligence startup World Labs emerged from stealth with a \$230 million round led by top-tier investors, including prominent AI researcher Fei-Fei Li. We believe this investment underscores the growing importance of data analytics in SpaceTech.

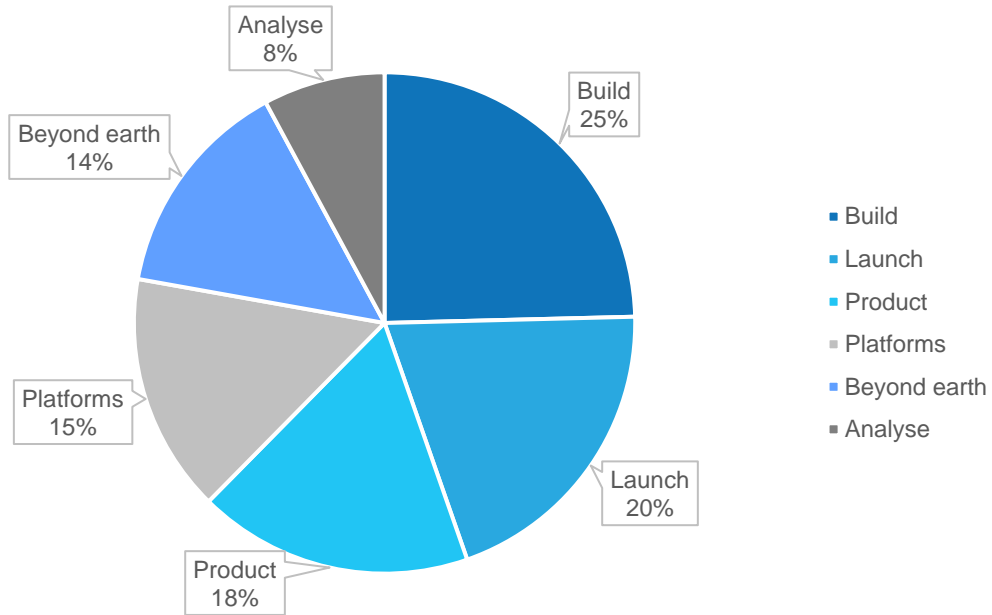
Chart 5: SpaceTech Investments Quarterly Trend



Source: Intro-act, Seraphim Space Index

Throughout 2024, China and the U.S. have alternated as leaders in quarterly SpaceTech investment, with the U.S. currently leading on a YTD basis. We think this competitive dynamic will continue to drive innovation and growth in both countries. **One standout venture deal was Anduril's \$1.5 billion raise at a \$14 billion valuation.** This next-generation defense contractor is expanding its space capabilities following its acquisition of Adranos in 2023. Anduril's plans to design, build, and operate its own satellite systems by 2025 are worth watching. Public market performance was mixed in Q3 2024. AST SpaceMobile saw its valuation surge past \$7 billion following the launch of its first batch of commercial satellites, while Terran Orbital agreed to a reduced acquisition deal with Lockheed Martin. Astra completed its delisting and take-private transaction after facing mission failures and cash flow problems.

Chart 6: Total Funding over 9M2024 for US Companies Attributable to the Data Lifecycle



Source: Intro-act, Seraphim Space Index

Chart 7: Top 10 US Companies per Fund Raised

Company	Stage	Amount (\$ million)
World Labs	Series A	230
Astranis	Series D+	200
Impulse Space	Series B	150
Hadrian	Series B	117
World View	Series D+	95.7
Apex	Series B	95
Varda Space	Series B	90
X-Bow Launch Systems	Series B	70
Muon Space	Series B	57
Insight M	Series D+	52

Source: Intro-act, Seraphim Space Index

HIGHLIGHTING DEVELOPMENTS OF PROMINENT SPACETECH PLAYERS IN 2024

Rocket Lab : In 2024, Rocket Lab has made significant progress in space technology, focusing on expanding its launch capabilities and services. **The company set a new record with its 12th Electron mission of the year in November , surpassing its previous record of 10 launches.** This milestone demonstrates Rocket Lab's ability to quickly fulfill launch contracts, completing missions in under 10 weeks. The company is also developing the Neutron rocket, designed for medium-lift capabilities, with plans to launch dedicated missions starting in mid-2026. Neutron aims to provide reliable and reusable services for large payloads (up to 13,000 kg) to LEO. In spacecraft manufacturing, Rocket Lab has delivered its second Pioneer spacecraft for Varda Space Industries, which supports in-space pharmaceutical processing, highlighting its vertically integrated approach to rapid development. CEO Peter Beck envisions making space access as commercially viable as the Ford Model T did for automobiles, with the cost-effective Electron rocket significantly lowering barriers for small satellite deployments.

Intuitive Machines: The Nova-C is a class of lunar landers designed by Intuitive Machines to deliver small payloads to the Moon. **The company was awarded a NASA contract in 2019 to transport science payloads as part of the Commercial Lunar Payload Services (CLPS) initiative.** The IM-1 mission, featuring the Odysseus lander, was launched on February 15, 2024, aboard a SpaceX Falcon 9 rocket, landing on the Moon on February 22, 2024. This marked the first Nova-C landing and the first American soft landing on the Moon in over 50 years. The mission also used methalox propulsion for the first time in a lunar journey. The IM-2 mission is set for launch in January 2025, with the IM-3 mission following in October 2025. **In November 2024, Intuitive Machines announced a collaboration with Johns Hopkins University Applied Physics Laboratory to enhance lunar communications and navigation infrastructure.** This partnership aims to develop technologies that ensure safe and reliable operations in cislunar space, which is crucial for future lunar missions. The company is also integrating Laser Imaging, Detection, and Ranging (LIDAR) technology for precise lunar landings, enhancing its capability to autonomously navigate and operate on the lunar surface.

SpaceX: In 2024, SpaceX made significant advancements in space technology, achieving several key milestones. The company successfully captured the first-stage booster of its Starship rocket mid-air using mechanical arms on October 13, 2024, marking a major step toward rapid reusability for future lunar and Mars missions. Additionally, **SpaceX announced plans to produce one Starship rocket per day** at its new Starfactory in South Texas, significantly enhancing launch frequency and reliability. The company continued to lead in reusable rocket technology, particularly with the Falcon 9 and Starship, driving down launch costs and increasing accessibility. SpaceX's long-term vision of Mars colonization progressed with advancements in Starship's methane-fueled engines and fully reusable design. **In December 2024, SpaceX's Falcon Heavy launched NASA's Europa Clipper spacecraft, further cementing its role in space exploration.** The company also made strides in propulsion systems, testing new technologies to improve efficiency for deep-space missions.

World Labs: In 2024, World Labs, founded by AI expert Fei-Fei Li and a team of technologists, emerged as a leader in spatial intelligence and AI. The company raised **\$230 million in September 2024**, backed by major venture capital firms like Andreessen Horowitz and NEA, to advance its mission of developing **Large World Models (LWMs)**. These models aim to transition AI from 2D representations to fully interactive 3D worlds, enabling AI to perceive, generate, and interact with virtual and real environments, akin to human spatial intelligence. In December 2024, World Labs announced its first project: **an AI system capable of creating interactive 3D scenes from a single image**, designed to produce video game-like environments that follow the laws of physics and allow for realistic interactions, marking a significant leap forward in fields like design, gaming, and robotics.

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