

# UNOOSA

*Novice  
Specialized*



**TOPIC:** Commercialization of Space

**CHAIRS:** Dean Staso, Enzo Rodriguez

*LAIMUN XXVIII*

*December 3-4*

# LAIMUN XXVIII

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**LAIMUN XXVIII**

*December 3-4*

## Letter from the Secretaries-General

Dear Delegates,

On behalf of our entire staff, it is our pleasure to welcome you to Session XXVIII of the Los Angeles Invitational Model United Nations (LAIMUN) conference. LAIMUN XXVIII will take place on Saturday, December 3 and Sunday, December 4 of 2022 at the Mira Costa High School (MCHS) campus.

Our staff, composed of over 100 MCHS students, has been working tirelessly to make your debate experience the best it can be. You will find your dais members to be knowledgeable about the issues being debated and MUN procedure. We pride ourselves in hosting a conference that is educational and engaging, and we hope you take advantage of that as you prepare and debate.

At LAIMUN, we value thorough research and preparation. We ask that delegates write position papers following [these directions](#). The deadline to submit position papers to be considered for Committee and Research Awards is Friday, November 25 at 11:59 PM PT. The deadline to submit to be considered for Committee Awards is Thursday, December 1 at 11:59 PM PT.

We also encourage all delegates to read the [LAIMUN Rules of Procedure](#) for conference-specific information and as a reminder of points and motions that can be made during committee.

Feel free to reach out to our staff with any questions or concerns you may have. Delegates can find their chairs' contact information next to their committee profile and the Secretariat's email addresses on the staff page. Any member of the LAIMUN staff will be happy to assist you.

We look forward to seeing you in December!

Sincerely,

Allyssa Lessinger and Brady Stephens  
Secretaries-General, LAIMUN XXVIII  
[secretarygeneral@mchsmun.org](mailto:secretarygeneral@mchsmun.org)



## Introduction to the USG

Hi Delegates!

My name is Izzy Hory and I am honored to welcome you to LAIMUN XXVIII! I am the Undersecretary-General of the Specialized Branch this year and cannot wait to see what everyone has prepared for debate.

This is my fourth year in the Model UN class at Mira Costa, and I can confidently say that everyone in the program has worked super hard to make the 2022 conference a success.

With that being said, we do not tolerate plagiarism or pre-written resolutions in any aspect. If any delegate is found to have plagiarized on their position paper, resolutions, or even speeches, they will be disqualified from receiving committee awards.

We want to create a safe space for everyone to share their ideas and form solutions as a community. Please do your part in being respectful to other delegates and your chairs. Every staff member is held to a high level of professionalism, which you can return by dressing appropriately and following LAIMUN's guidelines.

Don't forget to do your research and print out any papers you may need.

I can't wait to see each committee's resolutions and the passion that comes along with them.

If you have any questions, you can reach me at [specialized@mchsmun.org](mailto:specialized@mchsmun.org)! You can also look on the LAIMUN XXVIII website to email any of your chairs or other members of our secretariat.

Best of Luck,  
Izzy Hory  
Under-Secretaries General

## Introduction to the Dias

Hey delegates!

My name is Dean Staso, and I will take up the role of head co-chair in the UNOOSA Novice committee. I am currently a junior, and this is my third year as a MUN participant. I have taken part in numerous conferences nationwide, including NHSMUN 2022 in New York City last school year. I worked as a legal for LAIMUN last year, and I'm excited to be your chair this December. I try to improve my MUN skills every chance I get, and I will do my best to be fair to everyone in our committee.

Besides being in MUN, I play wide receiver for the Mira Costa football team. I also helped build the first pickleball court at Costa, and co-founded the Pickleball Club last year. I'm part of many other clubs here at Costa, because I like to stay involved with my school most of the time. I work at a market in Hermosa Beach as well. I also enjoy surfing when I have the time. Watching sports is another pastime of mine after I finish my homework. Another fun fact about me is that I'm the biggest Pittsburgh Steelers fan you'll ever meet!

What I'm looking for in committee is tailored solutions that pertain to the numerous subtopics of space commercialization. There are a lot of specific issues that all fall under the umbrella of this topic, and I want to see as many of them addressed as possible. Once again, I'm excited to be your chair for LAIMUN 2022, and I can't wait to see you in debate!

Best of luck,

Dean Staso

Hello delegates!

My name is Enzo Rodriguez and I will be your co-chair along with Dean for UNOOSA! I am a sophomore now at Costa and this is my second year as a delegate for the Costa MUN program. I have competed in multiple conferences, ranging from SOCOMUN to DMUC and have competed at LAIMUN in the past. Currently I am learning all that I can from my older peers so I can become the best MUN version of myself that I can be.

Outside of Model UN I play water polo (my position is utility/set) for Costa and Trojan Water Polo Club, swim for Costa, and help edit a Dungeons and Dragons optimization blog. I've played water polo since fifth grade, competing all over California and have taken trips across the country to play. I've played with and against other LAIMUN staffers on the water polo team, so I hope to out do them all as your chair for UNOOSA. I also surf fairly regularly for relaxation, and like lifting weights.

In UNOOSA, I would like to see novel yet broad solutions pertaining to interesting and comprehensive subtopics. Dean and I both worked hard in order to pick a topic with depth and relevance to every member of the international community. Feel free to reach out to us whenever at [unoosa.nov.laimun.xxviii@gmail.com](mailto:unoosa.nov.laimun.xxviii@gmail.com) with any questions, comments, or concerns. We can't wait for another great LAIMUN!

Best Regards,

Enzo Rodriguez

## Committee Description

The United Nations Office for Outer Space Affairs regulates the common mission of space exploration. In this committee, you will explore topics like how to prevent space debris, space militarization, and international telecommunications regulation. Since space, commonly termed the “final frontier”, is agreed to be under shared ownership internationally, this committee serves to properly regulate its use and the exploitation of extraplanetary bodies.<sup>1</sup> For example, they would take a particular interest in asteroid mining and how to prevent nations from creating an imbalance of resources because of it.

Rather than exploit resources, UNOOSA seeks to create a collaborative environment in space where nations can work together to perform scientific research and expand the frontier of mankind. The largest achievement of this mission, so far, has been the establishment of the International Space Station (ISS), where astronauts and scientists of different national backgrounds can collaborate on research to propel us forward.

Another large sector that the UNOOSA has begun to regulate is the privatization of space explorations. While nations like the United States initially just hired for-profit contractors to assist nationally-funded missions to space, private companies like SpaceX have begun to become competitors in this industry. Therefore, it is the UNOOSA’s job to see how the international community can best regulate these companies to ensure that they act properly in such a

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<sup>1</sup> Hazuki.mori. “United NationsOffice for Outer Space Affairs.” *Access to Space for All*, <https://www.unoosa.org/oosa/en/ourwork/access2space4all/index.html>.

dangerous environment<sup>2</sup>. The world of space is high-stakes, and the UNOOSA helps to prevent catastrophe for generations to come.

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<sup>2</sup> Kavanagh, Camino. “New Tech, New Threats, and New Governance Challenges: An Opportunity to Craft Smarter Responses?” *Carnegie Endowment for International Peace*, 28 Aug. 2019, <https://carnegieendowment.org/2019/08/28/new-tech-new-threats-and-new-governance-challenges-opportunity-to-craft-smarter-responses-pub-79736>.



## Topic: Commercialization of Space

### I. Background

Since humans first set foot on Earth, they have always looked to the sky. No one knows the extent to the possibilities it holds, and it is the last frontier for humans to explore. Civilization has conquered this world, and it is time to set sights on the great unknown – space. Governments worldwide have already started intelligence and militant operations in space, and private corporations are now looking to expand their business.<sup>3</sup> The commercialization of space is expanding, and there are lessons to be learned from previous expeditions and current ones.

Space exploration began during the Cold War, when the first satellite, Sputnik 1, was launched on October 4, 1957. The United Socialist Soviet Republics were the first to send something man-made into space, and they didn't stop there. The USSR dominated early on; the first to send a living organism into space was a dog named Laika. On top of this, they were also the first to get a human in space. His name was Yuri Gagarin, and he was sent on April 12, 1961. This event marked the point where the space race truly became dangerous. If someone could be actively mobile in space, they could quickly press a button to launch a missile. While the United States struggled to keep up, the Soviet Union kept pulling away from the Americans. They also became the first to land man-made objects on the moon in the series of Luna projects. After the USSR's persistent dominance, the United States finally responded. The consolidation of NASA

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<sup>3</sup>Ilya.lazarev. "United NationsOffice for Outer Space Affairs." *Documents and Resolutions*, [https://www.unoosa.org/oosa/documents-and-resolutions/search.jsp?view=documents&f=oosaDocument.subjects.subject\\_s%3AProgramme+on+Space+Applications](https://www.unoosa.org/oosa/documents-and-resolutions/search.jsp?view=documents&f=oosaDocument.subjects.subject_s%3AProgramme+on+Space+Applications).

led to the beginning of Project Gemini, which ushered in Project Apollo. On July 16, 1969, Neil Armstrong and his crew were the first to be launched to the moon on Apollo 11. Their flight is recognized as the end of the space race between the US and the USSR. The competition between these two governmental entities is the natural response to further exploration of the universe.

The United States and the Soviet Union are not the only governmental organizations that have contributed to the birth of space commercialization, however. Countries such as India and Japan started vamping up their space programs soon after the two world superpowers went head to head. India's equipment and ideology was heavily influenced by the Russians, though. The very first satellite India sent up was transported by a Soviet Kosmos-3M rocket, and launched from Russian soil.<sup>4</sup> Japan, too, used Soviet and American ideas to kickstart their own space operations. The decline of the USSR allowed for Japan to safely combine and conjugate ideas with the former superpower's space program. This led to the launch of Japan's first satellite, the OHSUMI, in 1970, significantly later than the glorified "space race."<sup>5</sup> The cases of Japan and India prove that smaller entities can end up becoming pawns for bigger organizations to spread their influence, especially the space commercialization world.

Private corporations are bound to follow the same route as the US and the USSR as they pursue financial success in space. This competition could take a dangerous turn unless remaining purely for furthering human understanding.

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<sup>4</sup> "Aryabhata." *ISRO*, <https://www.isro.gov.in/Spacecraft/aryabhata-1#:~:text=The%20Aryabhata%20spacecraft%2C%20named%20after,Yar%20on%20April%2019%2C%201975.>

<sup>5</sup> *Jaxa* 宇宙科学研究所, [https://www.isas.jaxa.jp/e/japan\\_s\\_history/brief.shtml](https://www.isas.jaxa.jp/e/japan_s_history/brief.shtml).

Current expeditions are also paving the way for the future of space. Numerous companies such as SpaceX, Virgin Galactic, and Blue Origin have been competing to lead the world into the next age. Commercial agendas in space have also had a few differing priorities than governmental operations. One of these is that space commercialization relies on the reusability of material. SpaceX has successfully lowered prices for their services, and “a key factor in that disruption [to the commercial space market] was SpaceX’s commitment to reusability.”<sup>6</sup> If private corporations can reuse their material, they can offer their services repeatedly with far less investment value. The significance of this method would cause an economic boom in the space industry, which has been happening in recent years. Activity in the space market has tripled over the last 15 years, reaching \$357 billion.<sup>7</sup> The fact that it is becoming one of the biggest markets in the world boosts its importance in the future economy.

Another priority that commercial space industries have is that they aim to serve the public, not just professionals in a specific field. A company called Orbital Technologies, based in Russia, had plans to create an orbiting hotel, set to open in 2016.<sup>8</sup> This plan has since been discontinued due to decreased motivation and lack of resources. However, the idea lived on. Another corporation, known as Orbital Assembly, has carried out the plans of the original organization. The developing Voyager Station is prepared to accommodate 400 people and is

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<sup>6</sup>Staff, SpaceNews. “2010-2019: The Decade in Space.” *SpaceNews*, 5 May 2020, <https://spacenews.com/2010-2019-the-decade-in-space/>.

<sup>7</sup>Ben-Itzhak, Svetla. “Analysis | Companies Are Commercializing Outer Space. Do Government Programs Still Matter?” *The Washington Post*, WP Company, 11 Jan. 2022, <https://www.washingtonpost.com/politics/2022/01/11/companies-are-commercializing-outer-space-do-government-programs-still-matter>.

<sup>8</sup>*The Luxury Travel Bible - Orbital Technologies' Space Hotel*, <https://luxurytravelbible.com/Orbital-Technologies'-Space-Hotel>.

only the beginning.<sup>9</sup> Hotels are just one form of sending ordinary civilians to space, and this sector would generate significant revenue for the space industry. Commercial activity in space has accounted for 80% of the \$447 billion in space-generated economies. These ideas fold into the grander theme of space tourism, an up-and-coming subtopic under the umbrella of space commercialization.

The concept of space tourism is critical to upholding the market of the space industry. NASA has been attempting to reach its goal of creating human habitats in space since the 1970s. Attempts at this have almost accidentally created “carbon monoxide detectors, studless winter tires, anti-corrosion coating, and even the electric car [which] are all byproducts of NASA’s mission”.<sup>10</sup> The entire goal of space exploration is to get humans to live in space eventually, and the commercialization of outer space is simply the catalyst for that. However, this is not the only use of space humans can reap the benefits. Corporations can also utilize space for intercontinental travel. SpaceX has been planning trips such as these recently, scheming up the Dragon rocket, Starship, and Super Heavy. According to SpaceX reports and studies, the most extended intercontinental trips will take an hour at the very most.<sup>11</sup> This would dramatically increase the economic prowess of space commercialization in the global economy, and it will soon be accessible to the average citizen of all nations.

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<sup>9</sup>Street, Francesca. “Inside the Space Hotel Scheduled to Open in 2025.” *CNN*, Cable News Network, 2 May 2022, <http://edition.cnn.com/travel/article/space-hotel-orbital-assembly-scn/index.html>.

<sup>10</sup>*The Commercialization of Outer Space* .

<https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?httpsredir=1&article=1406&context=honorsprojects>.

<sup>11</sup> “Earth Orbit.” *SpaceX*,

<https://www.spacex.com/human-spaceflight/earth/index.html#:~:text=Earth%20to%20Earth%20transportation,well%20as%20turbulence%20and%20weather>.

The commercialization of space will undoubtedly be the future of space exploration, and the safety of everybody who travels to space must be ensured. The long-term effects of space travel on the human body and bank accounts must be considered and studied heavily beforehand, but there are more pressing issues. The sheer amount of satellites and space junk that hovers around Earth's atmosphere can potentially be hazardous for future space commercialization. There are over 11,000 satellites and well over half a million pieces of space debris in Earth's orbit, which poses a problem for launching new orbital machinery.<sup>12</sup> The commercialization of space may be the future of humanity but can also be its destruction if caution is not observed.

## II. UN Involvement

Ever since man first ventured into space, the United Nations has created multiple organizations to help monitor and guide the new concept of space exploration. In response to the launch of Sputnik 1, the UN created the Committee on Peaceful Uses of Outer Space (COPUOS). Originally founded with 24 members, that number has grown to 95, which is now one of the most significant UN committees. Every year, they deliver reports that keep all informed countries up to date on current international laws and guidelines for space exploration. This provides a basis for governments to dictate their space operations, and COPUOS is there to help. For example, COPUOS has helped the United States to launch its National Oceanic and Atmospheric Administration (NOAA). The NOAA has in turn aided and partnered with Europe, Japan, Korea, and India with environmental threats.<sup>13</sup>

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<sup>12</sup> "As Private Satellites Increase in Number, What Are the Risks of the Commercialization of Space?" *World Economic Forum*, <https://www.weforum.org/agenda/2022/01/what-are-risks-commercial-exploitation-space/>.

<sup>13</sup> UNVIE, U.S. Mission. "2022 COPUOS STSC – U.S. National Statement." *U.S. Mission to International Organizations in Vienna*, 25 Feb. 2022, <https://vienna.usmission.gov/2022-stsc-national-statement/>.

The COPUOS committee was derived from the United Nations Office for Outer Space Affairs (UNOOSA). This office was founded on December 13, 1958, and has served as the legislature for international space law. In 1966, UNOOSA worked with the General Assembly to form the Outer Space Treaty, which the three major space race competitors signed: the United Kingdom, the Soviet Union, and the United States of America. Since then, UNOOSA has overseen and guided governmental operations in space. It has worked with the United States to develop the Wide Area Augmentation System (WAAS) for satellites to improve GPS efficiency.<sup>14</sup> However, it does not play as much of a role in the commercial industry of space. This is because the United Nations has its hands tied with numerous governmental space programs and does not have the authority or resources to keep up with private organizations. However, they have helped to guide private corporations using the 2030 Sustainable Development Goals.

In 2018, UNOOSA partnered with the European Global Navigation Satellite System Agency to “assess the impact of space technologies on the Sustainable Development Goals (SDGs).”<sup>15</sup> A study conducted with this organization concluded that “the SDGs directly benefit from the use of Earth observation and navigation satellite systems.”<sup>16</sup> On top of using the Sustainable Development Goals to guide commercial space exploration, UNOOSA also maintains the Register of Objects Launched into Outer Space. In 2017, there were 553 registered objects, which is exponentially increasing. Keeping a record of all known things in space

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<sup>14</sup>Robert.wickramatunga. “United NationsOffice for Outer Space Affairs.” *ICG: ICG: Members: USA*, <https://www.unoosa.org/oosa/en/ourwork/icg/members/members/usa.html>.

<sup>15</sup> “Space Technology and the Implementation of the 2030 Agenda.” *United Nations*, United Nations, <https://www.un.org/en/chronicle/article/space-technology-and-implementation-2030-agenda>.

<sup>16</sup> “Space Technology and the Implementation of the 2030 Agenda.” *United Nations*, United Nations, <https://www.un.org/en/chronicle/article/space-technology-and-implementation-2030-agenda>.

increases awareness of what could be hazardous. Regarding space exploration and just about everything else, the United Nations plays the role of safety officer.

### III. Topics to consider

#### A. *Humane treatment of workers in space*

Countries cannot claim sovereignty in space due to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.<sup>17</sup> This lack of sovereignty extends to space stations and other man-made habitats in space. Still, agreements have been made for multiple governments to “govern” space stations, such as the International Space Station Intergovernmental Agreement.<sup>18</sup> With the government's non-jurisdictions in space, a governmental void exists that corporations could potentially fill. Corporations acting as governments is the end goal of unchecked capitalism. Suppose a corporation has the resources to finance and build a privately owned space habitat. In that case, it can undoubtedly turn that habitat into a quasi "company town", where the primary employer in the region owns the major vendors and service providers. These conditions in the past have often led to abjectly horrible conditions for the company's workers. In the company towns during the period of American expansion into the American West, workers often felt dictated due to the lack of elected officials and lack of say in local affairs.<sup>19</sup> Due to the corporate lawlessness and the inherent need of capitalism to expand, the workers inhabiting these stations

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<sup>17</sup> Robert.wickramatunga. “United NationsOffice for Outer Space Affairs.” *The Outer Space Treaty*, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>.

<sup>18</sup> “International Space Station Legal Framework.” *ESA*, [https://www.esa.int/Science\\_Exploration/Human\\_and\\_Robotic\\_Exploration/International\\_Space\\_Station/International\\_Space\\_Station\\_legal\\_framework](https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/International_Space_Station/International_Space_Station_legal_framework).

<sup>19</sup> says:, Rosalie Atkinson, and Eileen Springer says: “Company Towns: 1880s to 1935.” *Social Welfare History Project*, 12 Mar. 2018, <https://socialwelfare.library.vcu.edu/programs/housing/company-towns-1890s-to-1935/>.

could easily be exploited to build space equipment rapidly. If company towns are put on the scale of a space habitat, severe human rights violations and other abuses of power by these company town corporations could be possible.

*B. Massive amounts of satellites of orbit*

There are a staggering amount of satellites currently in Earth's orbit. About 11,000 satellites now orbit Earth, and along with an estimated half million pieces of debris, there is an unprecedented need for an international body to govern the functions of satellites. The 1972 Space Liability Convention not only covers only spacecraft but is unclear on whether or not spaceships launched from planes (a primer model of launching craft off the ground) are counted under the convention. This legal vagueness creates a unique danger to the future of space development.

With the growth of space launches due to the growing commercialization of space, the number of satellites in the night sky will balloon as it has between the 1950s and today. More satellites create an increase in debris and thus more potential collisions. In 2009, Cosmos 2251 and Iridium 33 collided unexpectedly. Each day satellites have dozens of approaches within 100 kilometers, many within 10 kilometers or less.<sup>20</sup> These unexpected stealth collisions will only become more and more frequent if space launches are not regulated in some way.

Satellites and space debris also pose a distinct threat to the Earth and its ecosystem. Fragments and such typically burn up in the Earth's atmosphere, posing little threat to the Earth. But when more significant pieces of debris fall out of the sky, they often fall into the ocean,

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<sup>20</sup> "The Dilemma of Space Debris." *American Scientist*, 10 Aug. 2020, <https://www.americanscientist.org/article/the-dilemma-of-space-debris>.



polluting the ocean's ecosystem further. A unique horror commonly associated with falling space debris is the chance it will hit a major population center. Although this chance is small, the fact that there is a chance of this at all is too big for the residents of these population centers.

#### *C. Threat of Anti-Satellite Weapons and Other Space Based Weaponry*

Due to the simple vastness of space, satellites are exceedingly hard to destroy when spread over a distance. But due to the further commercialization of space, Earth's orbit is densely packed with satellites, creating a target rich environment for anti-satellite weaponry. The destruction of satellites in this way leads to debris further harming other satellites in the area, potentially causing major communications disruptions worldwide.

These weapons, if further developed, could even strike things such as the International Space Station and future space habitats, jeopardizing the country's space development. In addition, due to the properties of gravity, these satellite's remnants could easily jeopardize infrastructure and even human lives on the Earth's surface.

Asteroids flung down a gravity well (the pull of gravity that a large body in space exerts) could easily cause untold devastation to the citizens that live in that particular well. All a hostile body would have to do in order to possibly threaten Earth is to attach thrusters to a moderately sized asteroid. These rocks easily threaten the security of all of the United Nations' member nations, and thus must be dealt with.

#### *D. Space Tourism*

The growing interest in space travel for commoners has evolved into the idea of space tourism, which plays a massive role in the commercial sector of space exploration. The

construction of space hotels as well as intercontinental Earth-to-Earth space flight is the future of travel for civilians. The economic effects of this efficient travel would have drastic ramifications for the transport industry. Private corporations would compete for the title of a monopoly, and the increase in money spent on travel could lead to a potential global inflation problem. Airlines would depreciate, and the stock market would be forced to adapt to new methods of transportation investments.

In addition to the economic effects of space, tourism is the safety of human beings in space. Several studies have shown that the impact of space on the human body is unhealthy, even if one follows all of the correct procedures.<sup>21</sup> Infections become much more common, and strength starts to dwindle. The problem of aging becomes a factor as well. When one stays in space for a long time, they age slower, becoming problematic over time.<sup>22</sup>

#### **IV. Case Study in Satellite Development in the United States**

Many attempts have been made to commercialize the multifaceted nature of space. The primer example of a successful effort to do this is the utilization of satellites. These satellites have enabled connectivity that has revolutionized the world.

In 1945, RAF electronics officer Arthur C. Clarke wrote an article in the publication *Wireless World* detailing how the use of manned satellites in 24-hour orbits above the world

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<sup>21</sup> “Effects of Space on the Human Body.” *Lunar and Planetary Institute (LPI)*, [https://www.lpi.usra.edu/education/explore/space\\_health/background/](https://www.lpi.usra.edu/education/explore/space_health/background/).

<sup>22</sup> MacNeil, Matt. “Does Space Travel Make People Age More Slowly?” *UC Berkeley Public Health*, 26 Oct. 2021, <https://publichealth.berkeley.edu/news-media/research-highlights/does-space-travel-make-people-age-more-slowly/#:~:text=In%20space%2C%20people%20usually%20experience,heartbeat%20rates%2C%20not%20epigenetic%20aging.>

could be used to distribute television programs.<sup>23</sup> This was the first recorded time humanity dreamed of satellites, birthing the ideas that would revolutionize communications.

With the 1957 launch of Sputnik I, countries, organizations, and individuals realized the power and profits that came with satellite communications, leading to the United States developing the technology further. The United State's National Aeronautics and Space Administration, or NASA, agreed to launch the American Telephone and Telegraph (AT&T)'s TELSTAR I, the first satellite that operated like satellites today. With the advent of 1964, two TELSTARS, two RELAYS (Radio Corporation of America TELSTAR equivalents), and two SYNCOMS (24 hour [20,000s mile high] satellites developed by Hughes Aircraft Company)<sup>24</sup>, were operating at a global level, giving the world a glimpse into the connectivity of today.

NASA had ultimately decided to further develop the SYCOM system into the EARLY BIRD system. Before EARLY BIRD's launch date (in 1965), however, an international organization to control telecommunications states called the International Telecommunications Satellite Organization was established (in 1964). This organization would launch their own satellite, marginally improved versions of the EARLY BIRD system. This system is the system that broadcasted the Apollo landing to the world, inspiring countless people to further work in a field related to space.

The EARLY BIRD system made a major improvement on the space satellite formula. Its predecessor, TELSTAR I, was not geosynchronous, which means that TELSTAR constantly passed overhead and then disappeared over the horizon, giving ground stations stationed in the

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<sup>23</sup> "Communications Satellites Short History." *NASA*, NASA, <https://history.nasa.gov/satcomhistory.html>.

<sup>24</sup> "Communications Satellites Short History." *NASA*, NASA, <https://history.nasa.gov/satcomhistory.html>.

U.S and Europe only around 100 minutes per day.<sup>25</sup> These limitations did not allow for comprehensive communication networks and bottlenecking development. However, the designers of the EARLY BIRD system fixed this flaw by matching the satellite's speed with the rotation of the earth, making it geosynchronous. This method is the standard method of orbit for Satellites today.

Due to the standard of geosynchronous orbit, new uses for satellites emerged. Satellites could be used for everything from giving commercial ships navigational aid to bypassing existing land-based communications networks on a national level to provide links similar to the international scale. These uses lead to further development of the satellite communication networks via the commercial incentive to corner the market on these new uses.

In conclusion, most of the technology for robust satellite communication networks existed in the 1960s but was not utilized effectively to create those networks. Companies developed these communications technologies, generating around 271 billion United States Dollars in 2020 alone, and thus commercialized space to pursue the lucrative benefits that satellite communications had and have to offer.

## V. Guiding Questions

1. Given that space has a history intertwined with competition, should the UN encourage this competition or encourage cooperation?

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<sup>25</sup> Ethw. "Communications Satellites." *ETHW*, ETHW, 12 May 2021, [https://ethw.org/Communications\\_Satellites](https://ethw.org/Communications_Satellites).

2. If the UN encourages competition for the sake of innovation, how can the UN ensure that this competition does not turn into conflict?
3. Given that space tourism has generated such a massive share of the space generated economy, and that no country can claim sovereignty in space, who and with what authority should these habitats be governed with?
4. The vast amount of satellites currently orbiting the earth pose a unique threat to space commercialization. How can these satellites be dealt with?
5. How can countries bound by the Outer Space Treaty (no country can claim land in space) ensure other countries don't attempt to claim land in space?
6. Since countries cannot claim "land" in space, companies will likely fill the role of countries. How can we ensure that the workers for these companies are treated equitably and humanely?

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