UNOOSA

**Agenda Item:** *Exploring the Dynamics of Space Tourism*

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Most distinguished participants and dearest guests,

I am delighted to welcome you to the HASMUN’24 Conference of Kadir

Has University as the Secretary-General. Your participation and unique

perspectives will contribute to the success of this event.

With 8 diverse committees, each crafted to address the urgent need

forsolutions across a broad spectrum of specializations, we're set for

impactful discussions and innovative ideas. With our special 15th year of

Kadir Has University Model United Nations Club celebration, our

committees are:

• United Nations Office of Counter-Terrorism (UNOCT)

• International Atomic Energy Agency (IAEA)

• United Nations Population Fund (UNFPA)

• United Nations Industrial Development Organization (UNIDO)

• United Nations Office for Outer Space Affairs (UNOOSA)

• World Food Programme (WFP)

• International Monetary Fund (IMF)

• Historical Crisis Committee (HCC)

We, as the HASMUN'24 team, have made marvelous efforts to serve you,

participants, one of the greatest Model United Nations Conferences.

I want to conclude my words by thanking everyone involved in the

Academicand Organization teams for their greatest work. Delegates, I look

forward to your valuable contributions and meeting you in person.

#welcomehome

Best regards,

Aylin Rassad

Secretary-General HASMUN'24

1. Letter from President Chair

*“Somewhere, something incredible is waiting to be known.”*

-**Carl Sagan**

Most distinguished delegates of the UNOOSA,

It is my utmost honour to welcome you all to our committee. My name is Umut Işık USLUYER, coming from Istanbul University and will be serving you here, in HASMUN’24, as your President Chair. During the writing of this study guide I enjoyed every bit of second that I could learn and use the information regarding space and space-related matters. It wouldn’t be wrong the say that since my childhood I’ve been a huge space nerd and this committee gave me the chance to fulfil my nerdy desires regarding space. During the evaluation of this study guide, I hope you all will feel the same as me. Also, my huge thanks goes to my Deputy Chair Meryem ERMEYDAN and our academic assistant Ecrin İrem ŞAHİN.

I would like to conclude my letter by saying that delegates; do not be afraid to dream. Dreaming in this committee is the key to understanding and resolving the space and space related matters. In any kind of doubt, do not be afraid to contact me via my email ([uusluyer@ogr.iu.edu.tr](mailto:uusluyer@ogr.iu.edu.tr)). See you all in the committee.

1. Introduction to the Committee

It all started with one simple human being wondering about the flickering light in the night sky; first they said that it was Gods themselves watching humanity from up in the sky above the dome that surrounded the world. Then some people wondered whether it was true that these were Gods themselves, so they started to observe the sky from their temples in the desert. They found patterns, they found some were brighter than others and then they named these flickering lights in the night sky as “stars”. From there on, humanity never stopped wondering about the sky. They dreamed about reaching those flickering lights one day. They dreamed about reaching the moon. The keyword here is “dreaming”. Those dreams came true when humanity finally reached space and later what seemed as impossible, the moon itself.

During these 2 days you will be following your ancestors footsteps in order to explore the dynamics of our kind’s next step in space, space tourism. You’ll have to give it all in order to find and apply a safe and efficient way to deliver space tourism to humankind. So delegate; be brave, be innovative and keep on dreaming to achieve your ultimate goal in this committee.

Lastly, delegates of the United Nations Office for Outer Space Affairs, welcome to your committee.

1. Historical Background

4.1. Humanity’s Desire to Explore the Unknown

Human beings have always had the urge to find out things that are hidden from them. It is possible that even centuries ago people were wondering about their world. While some sought solace in religion and a higher being, others did so through experimentation. The early experiments were generally innovative and probably more speculative or philosophical as well. However, these experiments have become more scientific with advancing technology, science, and knowledge. Our interest in the unknown originates from our forefathers’ fears and desires which still exist today, tomorrow, and forever. It is clear that with curiosity coupled with desire human civilization can progress only when scientists keep testing prior experiments by performing new ones. Thus we start by attempting to know where we stay through ocean investigations, microscopic examination of life forms, and continuous expansion of our understanding’s horizons.

Nevertheless, humans can just come in awe of every mysterious thing now and then. The boundless universe of the cosmos keeps on baffling humans as if it is luring them into it. Even so, the mission to turn the reality of a cosmic site and a universe into a dream that will never let pass our minds is a dream that will never lose its effect. If the viewpoint remains the same that is changed, human capabilities, and chances to accomplish more meaningful missions than we could have ever imagined are constantly growing and pushing the boundaries of what is possible for humanity. Therefore the result will be a showcase of a remodeled age of culture which we can stand on.

4.2. Beginning of a New Race

This has been the reason for the world's two superpowers especially in the second half of the 20th century to focus on the exploration of space, as a lead priority mission. Upon the termination of the Second World War, the Cold War (another international antagonism between the USA and the Soviet Union) became the next stage of this hostility. Also, space exploration was not guarded from its influence. On the one hand, both sides claimed to become the colony of the world. However, on the other hand, there was also a popular desire to take revenge for the oppression of the past. Given the fact that space offered such a privilege as control over the technology of the future, and even its indirect control over the future, it granted considerable authority over the space. The trend was generated on the 2nd of August, 1955, when the Soviet Union, moving fast as the American space exploration project was revealed on the 13th of January that year, spelled out its plans to launch scientific satellites out into space.



“Representative Image: <https://www.history.com/topics/cold-war/space-race>“

That the space race between the United States and the Soviet Union states had caught the attention of the entire world crowd has become an obvious truth. This rivalry mirrored the Cold War period which kept both countries to double their investment and set into motion a race to space explorations (with an objective) of one surpassing the other. The race and rivalry of these two superpowers have sowed the seed of long-range astronautics and major developments, the most profound cast of which are the first satellite launch in this time and setting foot on the moon for the first time this age.

The Timeline of the Space Race

October 4, 1957: The USSR achieves a milestone by successfully launching Sputnik 1, the first satellite to orbit the Earth in history.

November 3, 1957: Continuing their advancements, the USSR launches Sputnik 2, carrying a dog named Laika into space, marking the first successful mission to send a living organism into orbit.

January 31, 1958: The United States entered the space race with the successful launch of Explorer 1, the country's first satellite to reach orbit. It carried experimental equipment that led to the discovery of the Van Allen radiation belt.

October 1, 1958: The United States established the National Aeronautics and Space Administration (NASA), replacing the National Advisory Committee on Aeronautics (NACA).

December 18, 1958: Another achievement for the US as they launched SCORE, the world's first communications satellite, which broadcasted a pre-recorded Christmas message from President Dwight D. Eisenhower, marking the first broadcast of a human voice from space.

January 2, 1959: The USSR launches Luna 1, which becomes the first human-made object to leave Earth's orbit and orbit the sun instead, though accidentally, earning it the nickname "cosmic rocket."

August 2, 1959: The US launches Explorer 6, the world's first weather satellite, obtaining the first images of Earth from space.

September 12, 1959: The USSR launches Luna 2, successfully reaching the surface of the Moon, becoming the first spacecraft to do so.

October 4, 1959: Continuing their lunar exploration, the USSR launches Luna 3, which captures and transmits images of the far side of the Moon, marking a significant milestone in space exploration.

August 19, 1960: The USSR achieves another feat as the first animals, two dogs named Belka and Strelka, along with various plants, return safely from space aboard Sputnik 5.

January 31, 1961: The US sends Ham, a chimpanzee, into space aboard a Mercury spacecraft, marking the first successful flight and landing of a hominid in space.

April 12, 1961: Yuri Gagarin of the Soviet Union makes history by becoming the first human to orbit the Earth aboard Vostok 1, solidifying the USSR's lead in the space race.

May 5, 1961: Alan Shepard becomes the first American in space aboard the Mercury-Redstone 3 spacecraft, though his flight did not orbit the Earth.

June 16, 1963: Valentina Tereshkova of the USSR becomes the first woman and civilian in space, spending nearly three days orbiting the Earth aboard Vostok 6.

March 18, 1965: Alexei Leonov of the USSR conducts the first-ever spacewalk, spending twelve minutes outside his spacecraft, Voskhod 2, in a specialized spacesuit.

It was not long after the successes of the USA and the Soviet Union in space research that almost all nations involved realized the great impact of space discoveries and the power of space navigation on the nation and how a country may arbitrarily gain very high status through its reach and advances on space. This led to an exponential growth of interest, giving birth to cutting-edge technology. This has assisted our space exploration efforts as well as the foundation of modern space organizations and research activities.

Besides, both space pollution and international conflicts have become the human colonization in space issue and such events have started to occur more often. As it would turn out, the space race served as a catalyzing factor for the boost of a sense of international cooperation. This fact is not surprising at all if we look at the nature of modern people, who understand that the development of discoveries and research is closely connected both with curiosity and with the fight between people for the implementation of the latest ideas. With the world elapsing into a stage where peaceful data sharing between nations becomes increasingly popular on a global scale, the mere fact is that the exploration and utilization plan of space continues to broaden more. This calls for constant interaction among nations and it is what has generally propelled forward the space exploration as well as the investigation of the limits of space and the universe in general.

Therefore, space studies have changed and built up to the next level of advancements. In a situation where even the limits of human curiosity are already left behind, those futures that science fiction writers have been imagining ever since are far from consideration now.

Thus, whether it is a competition between the world`s leading countries or the connecting link for humanity on the common ground that marks world borders where the investigation of space is involved, the space race is explained only in this way. Countries, global-wide, have never been as united as they are today when it comes to space exploration, with this cooperation yielding results unimaginable to past generations. The future of this travel within space will be even better as people all over the globe will further contribute to the advancement of science and high-level human civilization as a whole.

4.3. Foundation of the ***UNOOSA***

The United Nations Office for Outer Space Affairs (UNOOSA) has been entrusted with the task of the promotion and strengthening of international cooperation and dialogue in the peaceful use and exploration of outer space, offering input to the United Nations General Assembly back in 1962. It had been in 1967 that the Department of Political Affairs had to work from the Department of Political and Security Council Affairs, thereafter it was changed to the Department of Space Affairs from the Department of Miat's Affairs in the same year. As the Department of Foreign Affairs, it was rebranded. It was designated the United Nations Office on Drugs and Crime in 1993 and resided in the UN Complex in Vienna.

UNOOSA, the authority of the United Nations for Space Affairs, fuses efforts to make global collaboration in space exploration as well as to provide a peaceful and responsible space environment among member states. It also helps in the use of new space technology in alignment with the sustainable development goals of the UN. The UN also promotes the newly emerging space investigation programs of developing nations by giving them ancillary training programs and technical assistance, serving as their fundamental bridge. The exploration of outer space is safe, peaceful, and unified by establishing a political environment in which all nations' scientific activities are balanced and the level of cooperation is high.

Additionally, it facilitates diplomatic discourse and knocks heads among the member states on space affairs in high-level meetings. One of the main objectives of UNOOSA is to bring the number of outer space-related conflicts between nations down to zero through diplomacy and cooperation on issues of common importance. Spending resources for the development of space for the benefit of mankind in all areas of international cooperation is one of the main lines of action.

Additionally, UNOOSA plays a significant part in making sure that space security is directed and that space activities to take place adhere to the established principles and practices that are universally known. The activities and efforts of UNOOSA frame and shape the progress of space exploration and a harmonious and inclusive atmosphere for international cooperation in space among countries from different regions of the world.

4.4. The U.S. Communications Satellite Act(1962)

The USA issued the so-called Communications Satellite Act of 1962 on 31st August 1962. These laws sparked a modern way of conducting space research because they also incorporated sending manmade objects into space like orbiting satellites to help improve telecommunications. There is no doubt that this satellite played a key role in the widespread commercial use of space and therefore the development of many technologies we all use as well like in the past from Space Exploration like satellite phones, the internet, or TV. This system was additionally to other countries apart from those countries that have spaceships to get a new horizon in space exploration but also was a source of inspiration that led to the development of the technology field.

From the other side as well as being just amazing innovative it also helped in further international cooperation in this area by conveying a different perspective to the general world public regarding space technological developments. Furthermore, this law focuses on both types of organizations namely private and state. It also states the rights that these organizations can claim over satellites. While being a primordial improvement in the field, this law also reduced the project costs, while leading to the availability of sat-based studies and a decrease in cost for the dispatches of satellites.



“President Kennedy signed the Communications Satellite Act which created the Communications Satellite Corporation (Comsat). [https://www.nasa.gov/image-article/august-1962-communications-satellite-act-signed](https://www.nasa.gov/image-article/august-1962-communications-satellite-act-signed/)”

The passage of the Communications Satellite Act (CSA) was motivated by the incorporation of the Communications Satellite Corporation (COMSAT).COMSAT as an organization was founded to maintain an American position as the chief funnel for space sector communications technologies worldwide. Furthermore, far beyond well-established fields, this law promoted international cooperation in space technologies in demonstrating a broad range of the human exploitation of space.

4.5. Outer Space Treaty

The Outer Space Treaty was the main item for the consideration of the Legitimate Subcommittee in 1966 and it was accepted by all member nations of the United Nations in the same year ( resolution XXI). The Treaty was based on the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space and gained wide adoption by the General Assembly in its resolution 1962 (XVIII) of 1963, but it also included a few alterations. The Treaty was opened for signature by all three depository states (the Russian Federation, U, K, and the USA) in the first month of 1967 and entered into force in the last month of the same year. The Outer Space Treaty gives the fundamental system of international space law, including the following principles: The Outer Space Treaty provides the fundamental system of international space law, including the following principles:

* the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind;
* outer space shall be free for exploration and use by all States;
* outer space is not subject to national appropriation by claim of sovereignty, using use or occupation, or by any other means;
* States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies or station them in outer space in any other manner;
* The moon and other celestial bodies shall be used exclusively for peaceful purposes;
* astronauts shall be regarded as the envoys of mankind;
* States shall be responsible for national space activities whether carried out by governmental or non-governmental entities;
* States shall be liable for damage caused by their space objects; and
* States shall avoid harmful contamination of space and celestial bodies.



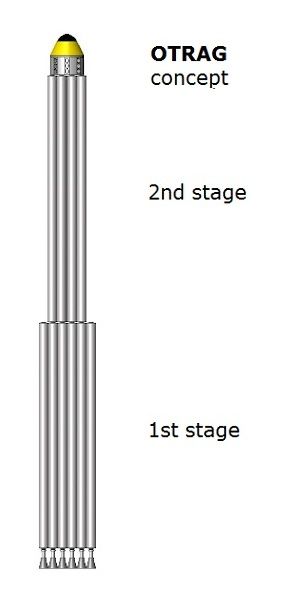
“Soviet Ambassador Anatoly F. Dobrynin, UK Ambassador Sir Patrick Dean, US Ambassador Arthur J. Goldberg, US Secretary of State Dean Rusk, and US President Lyndon B. Johnson at the signing of the Outer Space Treaty on January 27, 1967, in Washington. <https://www.thespacereview.com/article/3155/1>”

From these basic principles, the countries switched to the peaceful approach of space and space pollution, created a shared responsibility that decreased the possibility of space war, and started to care about space pollution and international cooperation amongst different space objects. Such a situation is called the Outer Space Treaty and it is an acceptable and stable solution for the space between countries that works like a guide for us today.

4.6. First Private Initiative

OTRAG or "Orbital Transport und Raketen Aktiengesellschaft" was a company that aimed to provide the world with a cheaper, easier, and more ergonomic rocket technology. Their adventure started in 1975 when Lutz Kaiser founded the company in Germany, which had Dr. Kurt H. Debus and Dr. Werner Von Braun as advisers. Eventually, they made a difference because they were the first and only private initiative that was able to achieve such remarkable success in space technology. The company adopted a modular approach to its innovations. This approach led them to bring another perspective to traditional rocket science and provided a more sustainable method for further studies by providing cheaper and less complicated versions of rockets of the time, and the ability to make changes that will be required in the future depending on the investigation by using replaceable materials. So, their rocket became a template and the first example of ergonomic rocket engineering. Also modular approach gave their rocket scalability, the ability to be fixed and maintained more easily.

However, this company was founded during the Cold War between East and West Germany, and West Germany and West Germany implied some political pressure on ORTAG and their studies. Similarly, some countries like the USA, Soviet Union, France, etc. didn't approve OTRAG's studies because they did not want a private initiative to have an active role in Space exploration and use. As a result, this caused political tension to increase. Furthermore, OTRAG had to deal with financial insufficiencies which forced to initiative to stop its innovations.



<https://www.wikidata.org/wiki/Q7073104>

As an example of the features of their rocket, they used non-cryogenic propellants, kerosene as fuel and nitric acid, and di-nitrogen tetroxide as oxidizer. Their engines were built from graphite, did not require any cooling, and only had one valve for each propellant. The propellant tanks were built from thin, stainless steel tubing used in the oil industry. Instead of ellipsoidal or spherical caps, they used flat bolted ones, as their tanks had a diameter of only 27 cm.¹ Those materials were easy to store, change, and manipulate. Also, it provided a surprising cost reduction. As seen, at the beginning of the adventure of humanity in space, OTRAG had a significant contribution which had been an inspiration for the next generations.

1. New Millennium, New Opportunities, New Competitors

The beginning of the new Millennium came with many new developments in every industry that we can imagine. Of course, these developments lead to new opportunities to be formed in many ways. It wouldn’t be wrong to say that one of the most affected industries from these developments and opportunities was and still to this day is space-related industries. These effects might range from many new outer planets being discovered to new private initiatives being formed to conquer humanity's desire to explore the unknown beyond our imagination. To be more specific, let us explore these developments from a closer perspective relating to our committee’s topic in order to understand and fabricate some ideas on how we shall approach the matter and dynamics of space tourism.

5.1. Technological Advancements

Before the arrival of the new millennium, the cost of accessing space has been a major barrier in the development of space-works. However, the arrival of the new millennium saw advancements in material science, propulsion systems and miniaturization of the electronic equipment that’s to be used in the space missions. With these new advancements the costs were significantly reduced. Of course, these developments in the field lead to the emergence of the private space companies to activate and resume their own space missions and equipment.

5.2. Emergence of the Private Space Companies

Although there were some private companies like OTRAG mentioned in the previous parts, most of them couldn’t catch up with the costs of these missions and equipment, so, they were eventually faced with harsh conditions economically and later their companies got the notification for bankruptcy, leading these companies to delay their missions indefinitely. However, like mentioned in the previous part, the cost reduction in space-related work gave one more chance, or hope, to the entrepreneurs with great ambitions to explore the depths of space and widen the people’s vision about space and the future of humanity. Also, with the governments all over the world recognizing the benefits that the private companies could bring to space-works and provide insightful ideas on space-related matters, entrepreneurs began to work on their visionary projects.

5.3. A Dynamic Ecosystem

With the ideal conditions given, the entrepreneurs immediately jumped to the opportunity. Establishing many great companies like SpaceX or BlueOrigin during the following years. Of course, this with itself brings competition to the field, forcing companies to be innovative and to explore new methods to build on their companies’ strength and influence.

This competitive nature actually brings many goods with them. As we said, these companies shall not fail in order to achieve their vision and so they must be influential and powerful in their field. This forces these companies to force the boundaries of our now-technology. Meaning that these companies are inventing new ways to reduce the needed amount of money to travel to space. For example, let us take SpaceX's relaunchable rockets. They had to find a way to significantly reduce the cost of space travel for their future missions so they went with the idea of relaunchable rockets. Although they failed in the procedure many times, they didn’t give up on their ideals and continued to push their way to their goal. In the end, they achieved what they wanted. In another example, Blue Origin also was successful in their tests to bring their rockets back to the earth. For the first time in humanity’s history, two companies achieved an important milestone in space travel. These achievements pushed other companies to be as innovative as possible, actually not only the companies but in the process the government agencies itself. In the end, the result of this dynamic ecosystem is a faster pace of innovation and a wider range of space exploration activities.

1. New Era: Space Tourism

For millennia, the vastness of space has enthralled humans, igniting a desire to explore the unknown. Space tourism is fast moving from science fiction to reality, whereas space flight was previously only possible for scholars and explorers. Space tourism refers to the practice of taking leisure trips beyond Earth's atmosphere. This could involve a variety of interactions, such as suborbital flights that provide a view of space and orbital missions that provide a longer stay in space. Right now, suborbital space tourism has the most significant near-term promise. Businesses including Virgin Galactic and Blue Origin are building spacecraft that can reach the edge of space, allowing passengers to experience weightlessness and observe the tides of Earth.

Orbital space tourism, on the other hand, includes coming to Earth's circle, empowering travelers to encounter the sensation of persistent freefall and witness breathtaking views of our planet for a longer length. The International Space Station (ISS) as of now serves as a goal for orbital space tourism, with space offices like Roscosmos advertising constrained openings for private citizens to visit. Space tourism has many facets that make it appealing. It advertises an exceptional perspective of our world and the opportunity to experience the breathtaking marvel of weightlessness, all while speaking to the extreme travel encounter. Some see it as the realization of a long-held ambition of reaching beyond the earth, while others use it as a platform for intellectual or creative inquiry. Space travel is a potentially significant source of revenue.

6.1. Sorts of Space Tourism

6.1.1. Suborbital Flights

Suborbital flights offer a taste of space for those seeking a thrilling adventure. These flights reach high altitudes, allowing passengers to experience the sensation of weightlessness for a brief period, typically lasting from a few minutes to several hours. During this time, you will witness the curvature of Earth, a sight that astronauts often describe as breathtaking. Virgin Galactic's SpaceShipTwo and Blue Origin's New Shepard are two prominent examples of vehicles currently designed for suborbital space tourism experiences.

6.1.2. Orbital Flights

Orbital flights provide a more immersive space tourism experience. By achieving Earth's orbit, passengers get to experience sustained weightlessness for extended durations, ranging from several hours to even days depending on the mission plan. This allows for activities and experiments that wouldn't be possible in a suborbital flight. Imagine witnessing multiple sunrises and sunsets in a single day, a truly unique perspective only available from space. SpaceX's Crew Dragon missions, potentially adapted for tourism in the future, and future space stations specifically designed for tourists are examples of how orbital flights could become a reality for space enthusiasts.

6.2. Key Players in Space Tourism

6.2.1. Private Companies

6.2.1.1. Virgin Galactic

Established in 2004 by Richard Branson, Virgin Galactic has emerged as a frontrunner in the burgeoning space tourism industry. Their core mission is to democratize space travel, making it a more attainable experience for a wider audience. They achieve this through a unique air-launched space tourism system designed for suborbital flights, offering a thrilling taste of space for paying passengers.

Virgin Galactic's track record is impressive. Their innovative SpaceShipTwo, a winged spacecraft carried aloft by a mothership (WhiteKnightTwo), detaches and ignites its rocket engine for a suborbital spaceflight experience. Through successful powered test flights reaching high altitudes, they've achieved crucial milestones towards commercial operations. In a historic moment for space tourism, Virgin Galactic completed the first successful commercial spaceflight with passengers onboard SpaceShipTwo in July 2021, including Richard Branson himself.

Looking ahead, Virgin Galactic is actively expanding their SpaceShipTwo fleet to meet the anticipated demand for suborbital space tourism. They're also continuously upgrading the WhiteKnightTwo to ensure efficient and safe operations. Furthermore, construction of spaceport facilities at various locations is underway to support future launch and passenger operations.

Virgin Galactic's vision extends beyond their current achievements. Their ultimate goal is to offer regular suborbital space tourism flights, allowing passengers to experience the awe-inspiring phenomenon of weightlessness and witness the curvature of Earth from the edge of space. As the company gains experience and refines its operations, the frequency of these flights is expected to increase, potentially making space tourism more accessible in the long run. They're even exploring the potential of their technology for point-to-point hypersonic travel within Earth's atmosphere, further pushing the boundaries of space exploration.

Virgin Galactic's impact on the space industry is undeniable. They've been a pivotal force in pioneering suborbital space tourism, demonstrating the potential for space travel experiences beyond traditional astronaut missions. Their unique air-launched space tourism system fosters innovation within the industry, while their vision of democratizing space travel holds immense promise for the future, potentially leading to a more comprehensive exploration of space by a wider range of people.

6.2.1.2. SpaceX

SpaceX, which was established in 2002 with the bold objectives of lowering the cost of space travel and facilitating human habitation on other planets, has accomplished remarkable success. Compared to conventional expendable systems, launch costs have been drastically reduced by their early focus on creating reusable launch vehicles, such as the incredibly dependable Falcon 9 and Falcon Heavy rockets. This, in turn, has democratized access to space for a wider range of players, from government agencies to private companies. Beyond launch vehicles, SpaceX has made history with the Dragon spacecraft. Initially designed for cargo delivery, the Dragon capsule successfully completed the historic Crew Dragon Demo-2 mission in 2020, marking a turning point as the first private company to launch, orbit, and recover a human spacecraft. This feat cemented SpaceX's position as a major player in human spaceflight. Looking ahead, SpaceX's ambitions are far-reaching. The Starlink constellation, a mega-constellation of internet satellites, aims to bridge the digital divide by providing global internet access. The true showstopper, however, is the Starship and Super Heavy launch system. This fully reusable behemoth is designed to propel humanity further into the cosmos, with missions to Mars at the forefront. Starship is central to Musk's vision of establishing a self-sustaining human colony on the Red Planet.

In addition, Starship's potential expands past profound space exploration. Its reusability and gigantic capabilities may usher in a modern period of space travel, encouraging lunar tourism, point-to-point Earth transportation, and logical investigation past our sun based framework. The effect of SpaceX cannot be exaggerated. By altogether decreasing dispatch costs and spearheading reusable dispatch innovation, they have opened entryways to a more available and feasible space future. SpaceX's victory has too served as a catalyst, rousing a wave of unused private companies to enter the space industry, cultivating development and competition within the interest of a shared dream: growing humanity's reach into the

6.2.1.3. Blue Origin

Founded in 2000 by Jeff Bezos, Blue Origin has become a prominent player in the space industry, with its sights set on making space accessible for millions. Their vision extends beyond just tourism; they aim to develop reusable launch vehicles and infrastructure to establish a permanent human presence in space and foster a thriving space economy.

Blue Origin's achievements are noteworthy. Their New Shepard suborbital launch system offers a taste of space for passengers, allowing them to experience weightlessness and witness the Earth's curvature. They've pioneered reusable launch technology, successfully demonstrating multiple vertical takeoffs, landings, and reflights of the New Shepard booster, paving the way for a more sustainable approach to space tourism. Further solidifying their commitment, Blue Origin conducted the first crewed flight of New Shepard in July 2021, carrying Bezos and three others to the edge of space.

Looking ahead, Blue Origin isn't stopping at suborbital flights. They're developing the New Glenn, a larger, fully reusable launch vehicle capable of orbital missions. This opens doors for potential future orbital space tourism experiences, offering longer durations in space compared to suborbital flights. Furthermore, the Blue Moon lunar lander is being designed to deliver cargo and potentially astronauts to the lunar surface, supporting future lunar exploration and potentially paving the way for lunar tourism ventures.Blue Origin's affect is verifiable. They've spearheaded suborbital space tourism, cultivated reusable dispatch innovation for cost-effective and economical space travel, and fueled sound competition inside the space industry, eventually driving to encourage advancement and improvement. Their vision for a dynamic space economy holds gigantic potential for long run, enveloping tourism, asset extraction, and logical investigate.

6.2.2. Space Agencies

While the private sector is largely responsible for developing space tourism experiences and vehicles, collaborating with reputable space agencies like NASA holds significant potential. Firstly, NASA's extensive experience in space exploration and safety protocols is a significant asset for commercial firms venturing into the unexplored realm of space tourism. Collaboration in areas like emergency procedures, crew training, and safety regulations can ensure the security of space tourists and advance a more responsible and long-lasting space tourism industry. Second, NASA's space exploration initiatives serve as a fantastic source of inspiration for both the general public and private enterprises. Their productive extraterrestrial missions and ongoing research provide fresh opportunities for the development of dependable spaceflight technologies. Consequently, this foster's public trust in the viability and safety of space tourism, which could draw in a larger clientele down the road.The space tourism sector can further scientific studies in addition to providing exhilarating experiences. Working together, space agencies and private businesses can create cutting-edge research platforms and experiments that can be carried out in the microgravity environment, which could result in ground-breaking findings in a variety of scientific fields.In summary, while private enterprises spearhead the first wave of space tourism, cooperation with long-standing space agencies such as NASA provides a way forward for a future of space tourism that is more dependable, safe, and beneficial to science. Ultimately, this collaboration can ensure the responsible exploration of space for leisure purposes while contributing to the advancement of scientific knowledge.

6.3. The Cost of Space Tourism

Although the costs with space-related missions have reduced significantly throughout the new millennia, the cost still remains high with suborbital flights costing hundreds of thousands of dollars and orbital flights possibly coming to millions. The cost of space tourism remains a significant barrier, currently limiting participation to the ultra-wealthy. Suborbital flights can range from $250,000 to $500,000, while orbital missions to the International Space Station can reach a staggering $35,000 per night. These exorbitant prices are primarily driven by the high cost of developing and launching spacecraft, along with the inherent risks associated with space travel. However, technological advancements, particularly the development of reusable spacecraft, offer hope for the future. As the industry matures and reusability becomes more widespread, the cost of space tourism is expected to decline, eventually making this once-in-a-lifetime experience more accessible to a wider audience.

6.4. Possible Dangers And Difficulties for Space Tourism

Space tourism, while undeniably exciting, is not without its inherent risks. The complexity of spaceflight means that even with rigorous testing, the possibility of technical malfunctions or launch failures remains a concern. Passengers may experience G-forces, vibrations, and potential emergencies during launch and re-entry. Beyond these immediate challenges, the space environment itself poses unique hazards. Exposure to radiation, health risks associated with microgravity (such as bone density loss and muscle atrophy), and the potential for accidents during spacewalks or other activities are all considerations. These potential dangers highlight the importance of robust safety measures and ongoing research to mitigate these risks and ensure the well-being of space tourists.

Space tourism currently faces significant hurdles regarding accessibility. The high costs associated with developing, operating, and maintaining spacecraft limit the experience to a very select group with substantial financial resources. Beyond the financial barrier, physical limitations come into play. Spaceflight may necessitate medical screening and physical conditioning for passengers to endure the demanding environment. This requirement could exclude individuals with certain medical conditions, potentially limiting the diversity of those who can participate in space tourism.

The burgeoning space tourism industry presents a unique ethical landscape. While advancements in space travel are undeniably exciting, concerns regarding environmental impact and equitable access demand careful consideration. Rocket launches contribute to greenhouse gas emissions and create space debris, raising questions about the long-term sustainability of a flourishing space tourism sector. Critics argue that prioritizing resources on space tourism diverts attention away from pressing issues here on Earth, like poverty and environmental degradation. Furthermore, the high costs associated with space tourism limit accessibility to a privileged few, prompting questions about fairness and inclusivity. Moving forward, it's crucial to find a balance between fostering innovation in space exploration and ensuring responsible practices that minimize environmental impact and promote broader accessibility in the future.

While advancements in spaceflight technology are impressive, venturing beyond Earth's atmosphere presents inherent unknowns. One key challenge lies in fully understanding the human body's response to spaceflight. Space Adaptation Syndrome, a condition causing nausea and disorientation during initial space travel, highlights the complexity of human adaptation. Beyond these immediate challenges, the long-term health effects and potential for unforeseen medical issues remain an area of ongoing research. Furthermore, the psychological impact of space travel, particularly on extended missions, requires further exploration. Understanding how isolation, confinement, and the psychological effects of spaceflight may influence passengers is crucial for ensuring their well-being during future space journeys.

1. Questions to be Addressed

-What measures can be implemented to minimize the environmental impact of space tourism?

-What ethical considerations should guide the development and regulation of space tourism?

-What ethical considerations surround space tourism?

-How can space tourism be made more feasible?

-What impact might space tourism have on the longer term of space investigation?

-What role can private-public partnership play in promoting responsible and inclusive space tourism?

-Can space tourism affect our already existing social structure regarding elitism and exclusivity?

-Can space tourism be used to further improve the international relationships between the nations?

-How can we ensure that space tourism activities don’t harm any celestial bodies or potential life forms beyond Earth?

-What can be done in order to mitigate the risk that could arise with space tourism, such as accidents and potential long-term health issues?

-Should governments subsidize efforts relating to space tourism or shall the industry grow organically?

-In case of an accident or emergency, who would be responsible in such a case?

-Regarding the environmental issues relating to the space debris surrounding earth, shall member states consider some limitations in order to further worsen the situation?

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