
NASA
National Aeronautics and Space Administration

Background Guide

Virginia Invitational

VIMNC

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VIMUNC X

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Esteemed delegates and sponsors of VIMUNC X,

Welcome to the tenth annual Virginia Invitational Model United Nations Conference. As the MUN year winds down, we hope to provide the best experience yet, with paramount service and attention to detail that creates the greatest conference. From broad UN organizations to regional bodies, from corporations to criminal organizations, VIMUNC has committees that truly serve every interest. With experienced chairs, czars and staff, we will ensure that every delegate truly has a positive experience, and we simply hope that you can enjoy your experience with us.

VIMUNC's 18 committees and over 700 delegates is one of the largest editions of our conference ever, and we look forward to expanding our outreach across Virginia to continue to provide a wonderful experience for all delegates. With a large MUN team that has years of experience, we hope that every single minute of the committee is filled with substantive debate that will create learning experiences that last for years to come.

So much hard work has been put into every single crisis update, background guide and dossier, and we sincerely hope that the work and care placed in every single aspect of this conference is displayed in its quality. If at any time you feel something about the conference is unsatisfactory, please don't hesitate to talk to your chairs, a staffer, or a member of the Secretariat.

Thank you so much for your commitment to VIMUNC X, and best of luck in your committee, future conferences, and ambitions.

Sincerely,

Kalyna Vickers

Secretary-General, VIMUNC X

NASA

(National Aeronautics and Space Administration)

TOPIC A: *Life on Mars*

TOPIC B: *NASA's Relations with the Soviet Union/Russia*

INTRODUCTION

to the National Aeronautics and Space Administration

NASA was created largely in response to the Soviet launching of Sputnik in 1957. It was organized around the National Advisory Committee for Aeronautics (NACA), which had been created by Congress in 1915. NASA's organization was well underway by the early years of Pres. John F. Kennedy's administration when he proposed that the United States put a man on the Moon by the end of the 1960s. There are four mission directorates composed: Aeronautics Research, for the development of advanced aviation technologies; Science, dealing with programs for understanding the origin, structure, and evolution of the universe, the solar system, and Earth; Space Technology, for the development of space science and exploration technologies; and Human Exploration and Operations, concerning the management of crewed

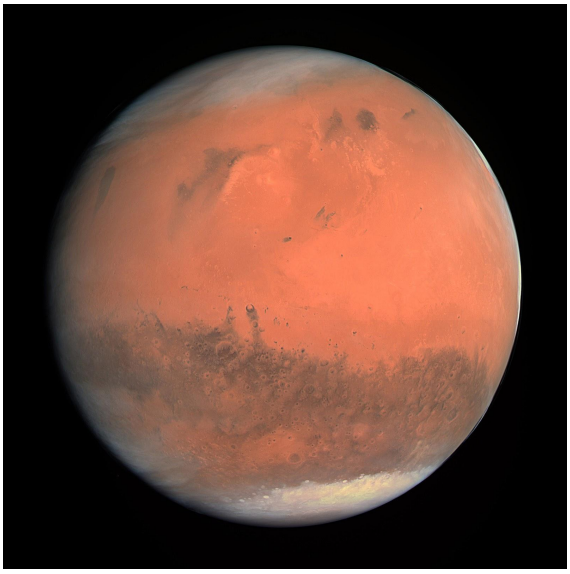
space missions, including those to the International Space Station, as well as operations related to launch services, space transportation, and space communications for both crewed and robotic exploration programs. NASA is responsible for developing and launching a number of satellites. Over the last 60 years NASA has continued to push the boundaries with cutting edge aeronautics research that has dramatically changed the way we build and fly airplanes. NASA has also completed the reconnaissance of our solar system, with intense investigation of all the planets. Using orbital spacecraft like the Hubble Space Telescope, NASA has also dramatically changed our understanding of the universe around us, as well as our own planet. NASA's early work on launch vehicles, communication satellites, and weather satellites has fundamentally changed daily life and created whole new industries. As a catalyst for international cooperation, NASA has also changed how and why humanity conducts space exploration. Now, NASA is preparing to take humankind farther than ever before, as it helps to foster a robust commercial space economy near Earth, and pioneers further human and robotic exploration as we venture into deep space.

Some recent NASA missions include the launch of NASA CLPS lunar lander, launch of ESA Mars Rover, and many more. Back in 2022, NASA claimed that its goal was to "foster a proactive, sustainability-focused culture Agency-wide." This has inspired and encouraged much of the work that is to follow.

TOPIC A: Life On Mars

Background Information

Mars is the fourth planet in the solar system. It is also known as the “Red Planet " and ancient Romans named Mars after the Roman god of war, because of its color. In reality, Mars has colors like brown, tan, and gold. The surface of Mars contains rocks that have iron, which oxidizes or rusts resulting in the reddish color. Similar to Earth, Mars was formed by whirls of gas and dust pulled by gravity. It has quite similar attributes to the other terrestrial planets. The core of Mars has iron, nickel, and sulfur in it and the crust is made up of the elements iron, magnesium, aluminum, calcium, and potassium. Although Mars is half the diameter of Earth, the surface is sort of the same as Earth. Mars has volcanoes, impact craters, crustal movement, and dust storms. Despite its size of 2,106 miles, Mars’s longest canyon is the Valles Marineris, which is almost the length from California to New York. Its deepest canyon is the Martian canyon, which is 7 kilometers deep. That’s around ten times deeper than Earth’s grand canyon! Unlike Earth, Mars has no protection from the meteorites, asteroids, comets, etc.. Mars’s atmosphere contains the gasses carbon dioxide, nitrogen, and argon gasses, but the red dust makes the sky look hazy red. Additionally, these molecules mix together with the air pressure changes. During the winter, carbon dioxide freezes which decreases the air pressure on Mars. During spring and



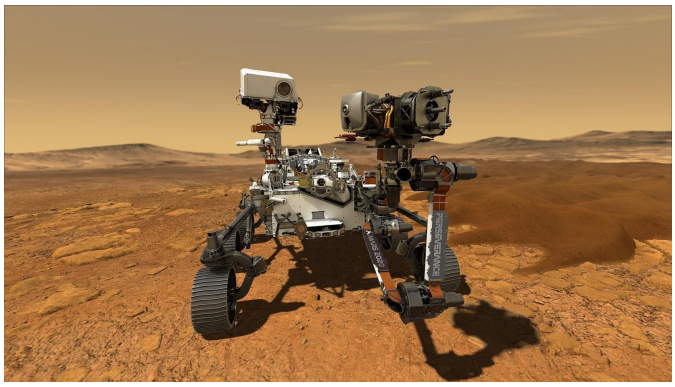
summer, the carbon dioxide evaporates mixes which increases the air pressure. The highs on Mars are 70 degrees Fahrenheit and the lows are around -225 degrees Fahrenheit. The reason for this temperature is due to its thin atmosphere, which doesn't trap the Sun's heat. Unlike Earth storms, Mars dust storms are vast and their duration can be for months. Today, there's no magnetic field, but evidence from some magnetized areas in the southern hemisphere prove that Mars did have a magnetic field around 4 billion years ago.

Mars's 1 complete rotation on its 25 degree tilted axis is every 24.6 hours and 1 year on Mars is 669.6 sols (Martian days) is equivalent to 687 days on Earth. Mars seasons last way longer than Earth's seasons, due to its elliptical orbit around the Sun. Phobos and Deimos are Mars's 2 moons, but unlike Earth's moons, they are oval shaped, because of the less mass they have to be sphere's for gravity. The larger and excessively cratered moon, Phobes, has a tendency to crash into Mars in around 50 million years. Deimos, on the other hand, orbits 2.5 times away from Mars. It also has craters, but they are hidden due to the loose dirt on the moon.

Scientists are striving to at least find signs/clues of life existing when Mars was filled with water and was warmer. To achieve this, NASA has sent multiple rovers to Mars to collect data. The Curiosity rover (2011) determines the history of rocks and their relation with water. The rover's SAM (Sample Analysis at Mars) has tested that the surface atmosphere on Mars are mixed with the gasses carbon dioxide, molecular nitrogen, argon, molecular oxygen, and carbon monoxide. The Perseverance rover (2020) searches for microbiological life traces from the formation of Mars. The Viking 2 (1976) discovered confusing chemical activity in the soil.

NASA has sent many satellites, landers, and orbitals which have brought vital information Although some of NASA's missions to Mars have been failures, it has been the most successful Space agency in bringing back data from Mars. In the end, NASA has a lot of exploring ahead!

Current Situation



On July 30, 2020 NASA launched the Perseverance Rover with its goal to seek signs of ancient life and collect rock samples. This rover has now been on Mars for 4 years, and its findings were outstanding, paving the way for the future of science. In 2022 the rover found traces of volcanic and igneous rocks and in 2023 scientists have taken these findings and compared them to the dawn of Earth. Earth began with those same volcanoes, which released the gasses to create an atmosphere that eventually evolved to support life. These conclusions allowed scientists to hypothesize that Mars is an early stage of Earth which will evolve into Earth as we know it with the condensation of atmospheric molecules into water vapor and oxygen developing through photosynthetic bacteria to eventually support human life on Mars. Although this is true, recent evidence in January of 2025 from the rover seems to show already existing signs of extraterrestrial life on mars. The rover had detected an unknown object in a deep canyon on the surface, and upon further investigation, it concluded that this was not an ordinary rock. After receiving photos, NASA scientists concluded that the mysterious object was a bone. This discovery paved a pathway to new theories and a team of specialists within NASA began to inspect the bone to understand how a species could be

surviving. As of February 24, 2025 the scientists had created a theory to explain the phenomenon. Considering that the composition of the planet's atmosphere is 95% carbon dioxide it appears that the organisms have a semi-photosynthetic composition allowing them to survive on Mars. Up to this point the board of directors had decided to keep this information from the public until they had gained more information about the topic. Now, SpaceX released the news that they are sending a rocket to Mars within the next 5 years, and the press team is pushing to release the information to gain more publicity from the media and draw attention away from SpaceX. The Board of Directors held a meeting to discuss this, and concluded that they would release the information that week. But, a complication came as suddenly the Perseverance rover went offline. Turmoil and discourse rang through the facilities in NASA as the lab was on emergency mode for 24 hours to recover from the situation. Despite many efforts the verdict came through and the rover had gone offline, unable to be turned back on or reached. The result did come with its condolences as the engineers were able to recover the last footage the rover had taken. In it, an alien-like figure hovered over the rover before the image went black. This image caused scientists to come to the conclusion that

the alien caused the rover to go offline, and that there was in fact life on Mars. In this committee as the NASA Board of Directors, delegates must collaborate to respond to the situation.

Possible Solutions

There are multiple ways to go about the situation, but the main two ways the committee will begin is by either releasing the information to the public or keeping it private within NASA. Publicizing the information could foster collaboration especially between SpaceX as a joint initiative could be put into place to make contact with these life forms using the SpaceX rocket, and NASA research. Although, considering the rocket is provided by SpaceX, the majority of the credit would be given to SpaceX and NASA would suffer severe publicity losses. Contrasting that, NASA could also publicize the information yet not work with SpaceX, but this will mostly end in SpaceX getting the credit with NASA having nothing. Finally, NASA can keep the information private and venture on its own expedition to make contact with the aliens. While this may succeed, SpaceX has already begun work on its rocket, and the race to make contact may end in a loss for NASA even if SpaceX does not have the information NASA does. Although these options pose interesting questions, there is also the opportunity to not make contact with the aliens and simply continue further investigating the species without direct contact.

Questions to Consider

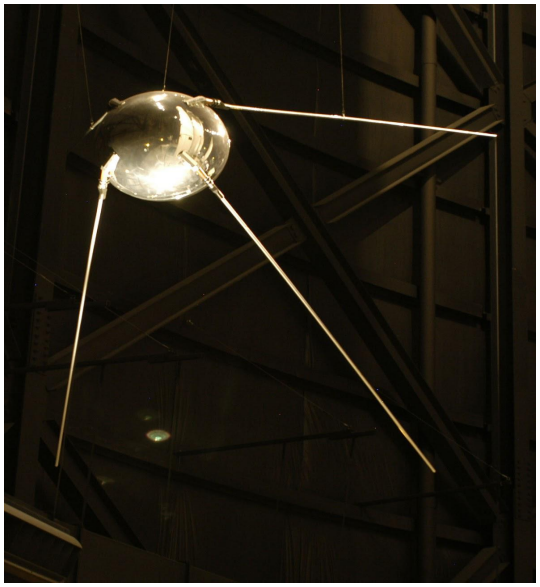
- Should SpaceX and NASA collaborate to further explore this new species?
    - What are the pros and cons?

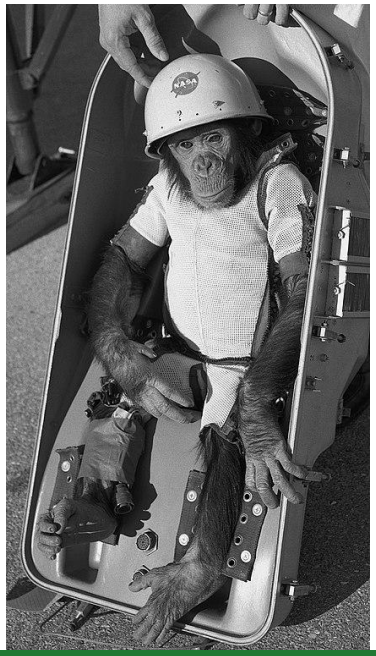
    - Is collaboration necessary / more effective than not?
- Who should be credited for the discoveries, NASA or SpaceX?
- Should the public have access to information about life on mars?
    - If so, how much of the information should be shared and who should share it?
- Is life on Mars a threat?
    - In what ways is it a threat?
    - How can we protect ourselves from whatever threats it proposes, whilst continuing to investigate the newly discovered information?
- How can we apply this information to our world?
    - Does life on Mars propose a solution to saving mankind post-climate change?
    - Should we focus our resources / attention on earthly affairs rather than extraterrestrial life?
    - Should the potential for human inhabitation on Mars be pursued?

TOPIC B: NASA's Relations with the Soviet Union/Russia

Background Information

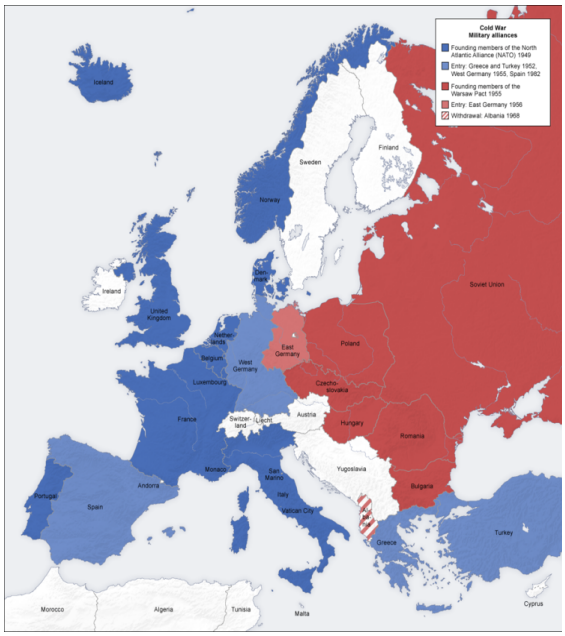
NASA has had complicated relationships with the Soviet Union. From the Space Race lasting for over twenty years to the addition of the Cold War into the conflict, all the way up to present, more peaceful, relations, the United States and USSR have always competed to be the most efficient and effective at exploring space. The Space Race began on August 2, 1955, before the formation of NASA, when the United States addressed the public, describing their plans to launch the first satellite into space. As a result, the Soviet Union launched their own satellite, beginning the long, costly competition between the two entities. It has seemed as if one accomplishment made by the Soviet Union was followed closely by another made by the United States, and vice versa. For example, after the USSR's launch of Sputnik 1 and Sputnik 2, the US launched Explorer 1 less than three months later.





In October of 1958, the United States founded the National Aeronautics and Space Administration, or NASA, which became an effective means to help the US compete against the Soviet Union in the Space Race. Fast forwarding a few more years of advancement, the Soviet Union launched Sputnik 5, which was the first satellite that returned dogs Belka and Strelka and a multitude of plants back from space alive. Then, in January of 1961, the United States launched the first ape, a chimpanzee named Ham, into space and returned this animal back alive. However, the Soviet Union seemed to have been ahead of NASA in 1961, as they were the first country to ever send a man who successfully reached space. Yuri Gagrin, traveling on the Vostok 1, became the first person to orbit the earth. In July of 1969, however, the US made history after sending the first men to land on the moon aboard the Apollo 11: Neil Armstrong and Edwin (Buzz) Aldrin.

All the while the Space Race was occurring, the Cold War was brewing, fueling further conflict and division between the United States' NASA and the Soviet Union. More specifically, the Cold War began after Germany's surrender at the end of World War II, and occurred between

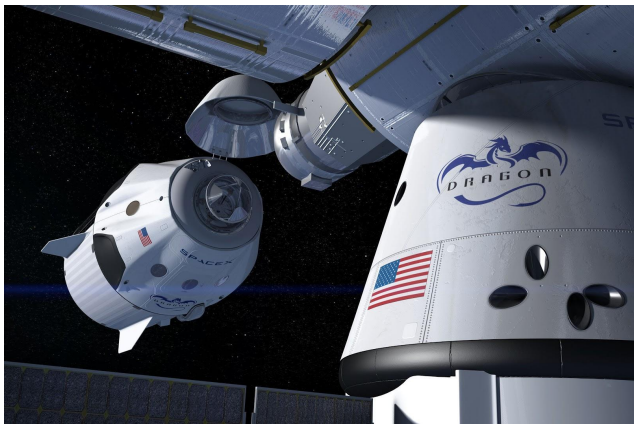


1947 to 1991. The Cold War describes political rivalry and conflict between these two territories, specifically due to their different political system (USSR being communist and US being capitalist), and supplemented the race to obtain the best technological tools to achieve goals the fastest in space. However, conflicts in politics did not always affect space rivalries; in fact, relations between the

US and the Soviet Union loosened long before the end of the Cold War in December of 1991.

In other words, while the Cold War did solidify tensions relating to the Space Race, this conflict did not cause them. In fact, the Space Race, while negatively impacting the Soviet Union's relations with NASA, did, in fact, speed up the rate at which discoveries were made by both countries. However, by encouraging space diplomacy and cooperation, both Russia and the United States - through NASA - will be able to combine their efforts in order to be able to formulate a stable future revolving around communicative space discovery and exploration.

Current Situation



In today's world, Russia and NASA have decided to cooperate with one another in order to maximize space exploration. In fact, just last year, both Russia and NASA sent their astronauts on the last Space X mission together.

While today's situation may be ideal, it is not certain to be long lasting. More specifically, Russia mentions that they will possibly remove themselves from the International Space Station by the year of 2024. This withdrawal could not only harm NASA-Russian relations, but rather affect the effectiveness in which space discoveries are made. It is NASA's responsibility to be able to establish a structured, secure framework that either protects the integrity and safety of NASA in the case that Russia halts their

cooperation with the United States, or provides a proposal to prevent Russia from withdrawing in the first place.

Possible Solutions

There are multiple ways to go about the situation, but the main two ways the committee will begin is focusing on fixing political relations or fixing the Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes Treaty. Politics matters, in fact it defines the process for making official government decisions. Political rivalry's can also create disunity and factionalism in every locality. Russia and the USA haven't been known for having diplomatic political relationships, and this could be leading to the removal from the International Space Station. To have this cooperative and beneficial relationship break would be havoc not only for the USA and Russia, but for many other countries. Mending this relation will help for better cooperation, which leads to more space exploration and projects. Some factors that have resulted in the strained relationship between the USA and Russia include the GPC (Great Power Competition). This geopolitical rivalry between influential nation's across the globe, notably USA, Russia, and China, is ignited by competitiveness in space exploration amongst other matters (economic dominance, political power, etc.) The tensions built up due to this can

be alleviated through collaboration between the nation's economically, politically, etc. Furthermore, the "Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes," signed in Moscow in May 1972, followed a decade of lower-level collaborative efforts between the two space powers and two years of detailed discussions on a common docking system. This treaty was essentially a mutual agreement to enforce cooperation between the US and Russia in a peaceful, non-conflicting manner. However, because it is so outdated, it is not considered beneficial anymore, and Russia has no use in staying with the International Space Station. This treaty needs to be revised to ensure all the needs of each country are being met while bringing space exploration to a new level.

Questions to Consider

- In what ways can the political relationship between Russia and the U.S. be kindled?
    - What are the current issues between the nations? How do these impact Russia's relationship with the International Space Station? How can these issues be mitigated?
- Should nation's prioritize political clashes over space exploration?
- Can the efficiency of space exploration be preserved without Russia's affiliation with NASA / the International Space Station?
- Is Russia benefiting in any way by staying with the International Space Station?
- How can the Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes Treaty be "fixed"?

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