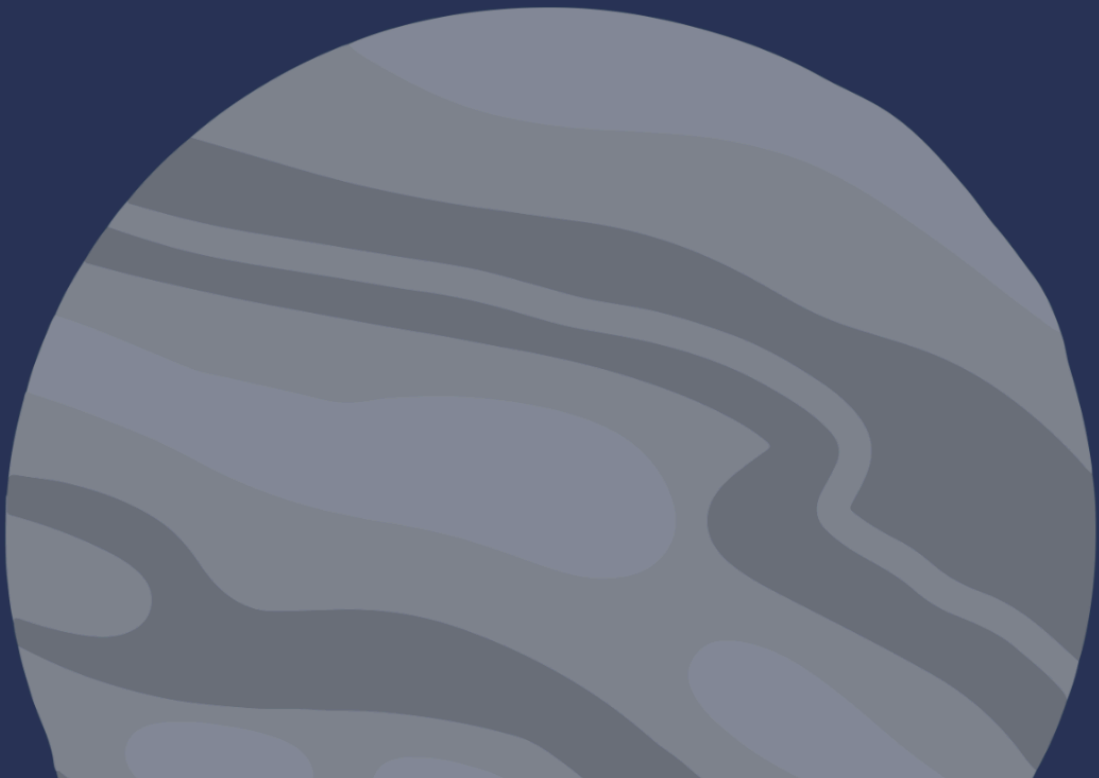


GENERAL ASSEMBLY

GOVERNANCE OF MARS

2100



Letter to the People:

Honorable Delegates,

Hello and welcome to the sixth iteration of Douglas Southall Freeman's Model United Nations Conference! Our names are Yana Prakash and Ridhima Vennu, and we are excited to be your chairs leading you through this committee, The Governance of Mars in 2100.

Yana and Ridhima are both sophomores in the Center for Leadership, Government, and Global Economics at Freeman High School. Yana's Model UN career began in middle school, and over the years she has come to appreciate the wide range of committees and perspectives it offers. Outside of MUN, she plays volleyball, serves on the teen board for Jacob's Chance, and is her school's TSA reporter. She also plays piano and participates in several clubs at Freeman with her friends including DECA and Asian Student Alliance. Ridhima's Model UN career started in high school and she has grown to enjoy the challenge it brings. Outside of MUN, she loves to run as well as playing the viola with her school and the Richmond Symphony Youth Orchestra. Ridhima participates in several other clubs, including Circle of Friends, DECA, and Young Democrats. We are both beyond excited to be chairing this committee!

Although the setting of this committee is in the future, the issues you are debating reflect real questions about governance and diplomacy. From the regulation of Martian resources to competition between nations for colonization, we hope delegates explore these topics with creativity and an understanding of international relations. We strongly encourage you to ground your positions in your assigned nation's perspective, not your own personal beliefs or bias.

While we strongly recommend that all delegates write position papers to gain a further understanding of your position, it is not required. However, they are necessary to be eligible for awards. Awards will be given based on performance in committee during moderated and unmoderated caucuses along with the quality and content of position papers. Delegates who make thoughtful and effective contributions to the committee through working papers, debate, and collaboration will be recognized for awards by the chairs.

We're honored to be chairing a committee with such potential for creativity and we can't wait to see the future come to life through your debates. If you have any questions or concerns, please don't hesitate to reach out to us at gov.mars2100vi@gmail.com. We wish you good luck with your research and preparation!

Your chairs,

Yana Prakash and Ridhima Vennu



Douglas S. Freeman High School Model United Nations Conference

General Assembly

Governance of Mars in 2100

Topic I: *Regulation of Resources on Mars*

Topic II: *Competition of Colonization on Mars*

Introduction

The Governance of Mars in 2100 is tasked with establishing and maintaining political and legal structures for the growing human presence on Mars. With the Red Planet now home to multiple settlements, it brings together nations to address pressing issues such as the regulation and equitable distribution of the limited resources on Mars, as well as resolve the intensifying competition for colonization rights. This committee aims to fulfill its mission of ensuring peace, cooperation, and sustainability. As tensions rise and national interests begin to clash, delegates must navigate complex diplomatic, ethical, and political challenges to shape a stable and just future for Martian settlement. Settlements on the planet are no longer theoretical - they now house research stations and civilian populations backed by competing nations and private corporations.

Background

By the year 2100, Mars has evolved from a barren land into a complex network of human settlements. Initial crewed missions that were launched in the 2030s laid the groundwork for habitation, and over the decades, permanent settlements evolved into self-sufficient colonies created by a mix of government space agencies and private companies such as SpaceX, iSpace, Axiom Space and Blue Origin. These settlements are primarily located on regions rich in subsurface ice, such as Arcadia Planitia and Utopia Planitia, allowing for water extraction and fuel production critical for sustaining life and enabling further exploration. Mars is now home to research facilities and biodomes supporting civilian populations that are all connected through a system of transit tunnels and transport vehicles that are pressurized and solar-powered. This is important because it allows people to move safely between settlements without being exposed to Mars' thin, unbreathable atmosphere or dangerous dust storms, and even help transport goods along Mars. However, no single governing body has control over Mars, and tensions are rising as nations and corporations assert

Topic I: Regulation of Resources on Mars

informal claims over territories and resource-rich zones. Although the Outer Space Treaty of 1967 prohibits national sovereignty in space, it lacks enforcement and rules around private corporations are non-existent. Mars is being held together by

Current Situation

With technological advancements in 2100, it has made the extraction and use of the natural resources offered on Mars possible. The planet's polar ice caps as well as below-ground ice hold critical supplies for human drinking water and agriculture.¹ This water ice can also be used to produce hydrogen and oxygen by a process called electrolysis, and these gases can be used for survival and further exploration of the Red Planet. Additionally, Martian regolith contains many economically significant metals and minerals including iron, aluminum, titanium, nickel, magnesium, chromium, rare earth elements, and even trace amounts of both zinc and gold. These resources allow for in-site manufacturing (ISM) endeavors, referring to manufacturing a product at its intended location or use, rather than transporting it from another factory. It costs four-thousand dollars to ship one kilogram of supplies from Earth to Mars, making ISM more necessary. The thin, carbon dioxide dense atmosphere (made of about 95% of CO₂), can be harvested by chemical methods such as the

¹ Mendenhall Research Fellowship Program. "18-27. Evaluating mineral resources on Mars for exploration and colonization." *USGS.gov*, www.usgs.gov/centers/mendenhall-research-fellowship-program/18-27-evaluating-mineral-resources-mars-exploration. Accessed 9 July 2025.

fragile cooperation, with settlements asserting autonomy and tensions starting to rise. As more groups claim land and resources, there is a clear and urgent need for strong laws and systems of government to keep conflicts from breaking out.

Sabatier Reaction in order to produce methane fuel and oxygen that is breathable for individuals, while inert gases including nitrogen and argon find uses in life support and industry.

On the other hand, Mars' environment remains extremely fragile. Due to the thin atmosphere, high radiation, and common dust storms, this planet is highly susceptible to disruption. Unlike Earth, Mars lacks a global magnetic field or active ecosystem that is capable of recovering from contamination. In-situ resource utilization (ISRU) such as drilling, mining, and fuel processing, have what it takes to risk a disturbance in geological strata, the release of toxic perchlorates, or could cause atmospheric contamination. Without official regulations, continued exploitation of these resources and the Red Planet's environment can lead to large-scale degradation of scientifically valuable and potentially life-supporting terrain.

Current legal treaties, such as the 1967 Outer Space Treaty (OST) and the Moon Agreement state that celestial bodies are the "province of all mankind" and prohibit national appropriation, meaning that no nation can claim sovereignty over any part of outer space or a celestial body. This could be through occupation, claims of their sovereignty, or by any other means. The

Artemis Accords include a series of agreements between various world governments. The Artemis Accords are grounded in the OST and were created to guide civil space exploration and use in the 21st century. Additionally, these documents highlight that space exploration and use should be strictly for the benefit and interest of all countries. However by 2100, these treaties are ineffective because they are now considered to be outdated and not rigorously applied. Additionally, these documents don't necessarily address the increasing role of private companies in space exploration, leading to them being insignificant. The absence of a binding and unified legal code has led to rising tensions between these nations. Disputes over mining zones and access to resources have resulted in diplomatic stand offs. During this time, developing countries fear they are being left behind while environmental scientists worry about the irreversible damage to the fragile biosphere and environment Mars has if unchecked resource exploration is allowed.

The lack of regulation reaches far wider than environmental concerns into legal uncertainty over ownership. While the OST prohibits sovereignty over Martian territory and in-situ resources, it doesn't clearly address the legal status of resources once they are extracted. Some nations and private companies take this loophole as an opportunity to claim ownership after extraction of these materials. However, others argue that post-extraction claims violate the "spirit of the treaty" as well. These legal uncertainties have led to overlapping claims and disorder over the issue between nations, particularly for the

locations of high value with subsurface water or for rare minerals and metals. Additionally, the lack of international environmental standards or impact assessments increases the risk of exploitation due to competition. While the Artemis Accords is providing safety zones and principles of transparency to promote safe and sustainable space exploration, these norms are not being applied across the board and remain voluntary. Meanwhile, international competition among countries such as the United States, China, Russia, the European Union, India, and commercial space-fairing companies, continues to grow.

The key issues surrounding ownership of Martian resources center on geopolitical competition and ethical concerns. Without an enforced legal framework, nations and corporations can exploit loopholes to claim resources, leading to overlapping territorial interests and conflict. This challenges the equal distribution of Martian resources, especially for developing nations with limited space access. It also raises moral questions about making private extraterrestrial resources that could be used for all humankind. Additionally, Mars' thin atmosphere and lack of a magnetic field make the planet highly vulnerable. Resource extraction risks causing permanent damage that Mars cannot naturally recover from.

Analysis/Potential Solution

Creating a durable framework for the governance of Martian resources requires inclusive approaches that recognize the shared ownership of space by all humanity.

This begins with revising enforcing current treaties to create a binding international legal system that governs the extraction, ownership, and use of Martian resources. These agreements should involve a diverse range of people, including developing nations and private entities, to ensure fair access and equal benefits. This inclusive representation will make sure Martian resources are distributed fairly, rather than being in the arms of a few powerful actors.

Long-term stability on Mars should be achieved by having transparency, communication, and trust among nations and corporations. Establishing neutral international bodies to control arguments, allocate mining zones, and monitor compliance with treaties and legal systems will help reduce the risk of conflict and competition. Partnerships between settlements, companies, and governments can also promote ethical standards.

Strong environmental laws are also crucial. The creation of standards for environmental protection, such as pollution limits and conservation zones, would help protect Mars' delicate ecosystem. Oversight of activities can ensure that resource extraction supports long-term human survival and scientific exploration without permanently damaging the Martian environment. Independent teams or organizations could aid in ensuring these environmental rules are followed, along with assessing the impact of humanity. By combining strong legal foundations, inclusive representation, and strong governance, humanity can manage resources in a way that supports scientific discovery and economic growth without sacrificing the planet or repeating mistakes made on Earth.

Questions to Consider:

1. Should there be limits or restrictions on the amount of resources taken or used?
2. How can resources be distributed fairly and effectively among nations?
3. How can resources be utilized while preserving Mars' fragile environment?
4. How can nations get the funding to transport the materials between planets?
5. How can nations and entities collectively make sure that developing and third world countries benefit from resource extraction?
6. How can nations be required to comply with agreed upon regulations?
7. How can you prevent resource wars or exploitation between nations?
8. How will private corporations play a role in acquiring resources?

Topic II: Competition for Colonization on Mars

Background

As Mars transitions from being explored to open for settlements during the 2100s, the need to establish permanent human colonies sparked a brand new form of global competition, one that is stellar and no longer strictly terrestrial. Following the earlier mission success in the 2030s and 2040s, colonization efforts increased exponentially over the following decades. By 2100, various nations and private corporations have not only set up working establishments, but also expanded into growing Martian colonies. These colonies are located in the best resource-rich locations that provide access to ice, flat land to be used for construction, and areas to potentially use solar energy. Though these earlier attempts have been cooperative and focused solely on scientific discovery, the 22nd century has undergone a shift towards national ambition and private profit. The “global commons” concept of Mars has begun to disintegrate.

Technological innovations such as advanced propulsion systems, self-replicating construction robots, and bioengineered life support systems have made the colonization of Mars not only possible but competitive. Because every country or corporation is competing to seal

out influence, territory, and resources, a newfound colonialism is taking place. However as Mars becomes more populated, a significantly growing list of complex questions between nations arise. The existing space law such as the 1967 OST prohibits national appropriation and claims of sovereignty over any objects in outer space. Even though international law may not officially allow it, in reality there is no way to stop a country or company from taking control of an area, even if they don’t officially own it. This has led to people making “soft claims,” regions where countries or companies operate independently, creating a grey zone where it is not clear who has legal authority. The Moon Agreement of 1979, an effort to clarify colonization rights, did not come into force broadly, inhibiting spacefaring nations. Furthermore, only 18 countries are part of the ²Moon Agreement: The United States, China, and Russia are noticeably absent. The lack of these countries makes it strenuous to enforce the provisions of the Moon Agreement as a matter of international law. Without new or binding contracts, the reality of colonization of Mars is evolving at a much faster pace than its laws.

Current Situation

Mars in 2100 has over a dozen major government sponsored settlements belonging to different Earth powers. Contact with Earth is still necessary, but the Martian society consisting of scientists, workers, and civilians, have already begun to form their

² "The Moon Agreement." *Law on Mars*, www.lawonmars.com/moon-agreement. Accessed 30 July 2025.

own unique identities. The majority of inhabitants are born on Mars or have spent their entire lives there, so issues on citizenship, sovereignty, government, and civil rights come into play.

At the heart of this competition is the major issue of control of lands. Although international law does not permit ownership of land, the colonizing nations have a tendency to exercise jurisdiction over the colonies. These regions are defended by infrastructure and surveillance. While no open militarization has occurred, there are rising concerns that space-faring nations will begin to employ defense technology in the name of “settlement protection.” This has generated controversy regarding the militarization and colonization of space.

Still another cause of conflict is settlement to settlement mobility and migration. As the number of people increase, struggles break out about who is able to reside where, what rights migrants enjoy, and whether or not settlements can restrict entry or exit. Some colonies demand loyalty oaths to corporations or governments; some are city-states with their own constitutions. Without one unified Martian charter or main code of laws, individual settlers are vulnerable. Moreover, the developing world starts to fear that colonization is becoming a new form of imperialism. As with enormous entry barriers in space exploration, countries without advanced programs are left unrepresented in the colonization effort. While some alliances do exist, they are imbalanced, leading to fears regarding

neo-colonial space dynamics. These follow Earthly patterns and leave us back to the importance of a government arrangement for Mars that is inclusive.

Analysis/ Potential Solutions

The growing competition for Martian territory and influence highlights the immediate need for solutions that address sovereignty and equal participation in colonization efforts. To prevent militarization, nations need to take care of the deployment of offensive weapons on Mars, while still keeping peacekeeping and safety enforcement effective. A neutral body is also necessary to mediate disputes and maintain transparency in settlement operations. The inclusion of private corporations in these efforts would also ensure that all colonizers are held to the same legal standards.

Agreements on freedom and movement should be created to ensure basic human rights along with fair migration. Fair decisions need to be made on issues such as preventing citizens from entering or leaving (aside from emergency situations.) A system that ensures controlled but fair migrations between colonies will also reduce tensions over policies.

Countries who do not travel into space have concerns about their benefits, when they do not have direct access to Mars. These countries need resources and funds that can support scientific missions and infrastructure projects, which will benefit these nations. Ensuring colonization does not deepen existing inequalities is vital.

Nations need to agree on how to keep settlements safe without the use of large and harmful weapons, such as utilizing surveillance systems and emergency defense measures to the benefit of everyone. Doing this ahead of time would prevent mistakes made in the past, and make Mars a fair, safe, and peaceful place.

5. Should military forces be allowed on Mars? If so, under what rules and regulations?
6. Who will have the authority to grant citizenship on Mars? What rights will these citizens have?

Questions to Consider:

1. Should a new governing body be created?
2. Should there be limits on the size of colonies or territory one nation can establish?
3. What rights do the settlers on Mars have compared to Earth citizens? Is Mars government going to evolve as Earth-controlled or independent?
4. Should private settlements be allowed to operate independently of international monitoring?

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