



# India's New Space Policy: A Leap Forward for a Future Space Superpower

*India has a long and proud history of space exploration. The country's first satellite, Aryabhata, was launched in 1975, and India has since become a major player in the global space community. In recent years, the Indian government has taken steps to further develop the country's space sector. In 2023, the government formed the Indian Space Policy 2023, which outlines the government's vision for the Indian space sector in the coming years.*

The 2023 space policy is a significant departure from previous policies. It is more liberal in its approach to private sector participation, and it gives greater emphasis to the use of space technology for social and economic development. The policy is also more ambitious in its goals, and it sets out a vision for India to become a leading spacefaring nation.

## The Previous Five Space Policies

India's history of space exploration is extensive and illustrious. Since the beginning of the Indian space programme in 1969, five space policies have served as its guiding principles. These regulations have played a role in shaping the growth of the Indian space industry and ensuring that the nation's overarching objectives for economic and social development are met by the space programme in India. Indian National Space Policy, 1969, was the country's first space policy. In this strategy, the government established its goals for the Indian space programme, which included the creation of space technology for the benefit of the nation. Additionally, the policy emphasized the necessity of international collaboration in space exploration.

India's Remote Sensing Data Policy from 2001 to 2011 was its second space policy.

This law governed how remote sensing data was used in India. It was created to make sure that the data was only used for lawful purposes and that it wasn't abused to compromise national security or breach people's privacy.

The Satellite Communication Policy was India's third space policy. The usage of satellite communication in India was governed by this policy. Its goals were to ensure that all residents could access the services and to encourage the growth of India's satellite communication industry.

The National Geospatial Policy, 2016 was India's fourth space policy. This guideline governed how geographical data was used in India. It was created to make sure the information was only used for lawful purposes and wouldn't be abused to invade people's privacy or jeopardize national security.

The Space Activities Bill, 2017, is a proposed legislation that aims to provide a legal framework for the authorization and supervision of space activities by Indian entities. The bill seeks to ensure safety, security, and peaceful use of outer space, while also promoting commercial space activities.

Indian Space Policy, 2023, is the country's sixth and most recent space policy. A framework for private sector participation is provided by this policy, which also describes the government's goal for the Indian space industry in the years to come.

These space policies have played a vital role in the growth and development of the Indian space program. They have helped to ensure that the Indian space program is aligned with the government's overall goals for economic and social development. They have also helped to promote international collaboration in space exploration and to ensure that the



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use of space technology is for peaceful purposes only.

**The new Indian Space Policy 2023 focuses on six main areas:  
Pioneering Indigenous Capabilities**

India's Space Policy 2023 places immense importance on fostering indigenous capabilities in the space sector. With a strong emphasis on self-reliance, the policy envisions India as a leader in the design, development, and manufacturing of satellites, launch vehicles, and other space-related technologies. This strategic approach aims to reduce dependence on external sources and bolster India's technological sovereignty.

Under this policy, the Indian government plans to establish a robust framework for research and development in the space domain. By investing in cutting-edge infrastructure, encouraging innovation, and nurturing talent, India aims to build a sustainable ecosystem that fosters indigenous excellence. This emphasis on home-grown capabilities not only fuels economic growth but also stimulates a culture of innovation, inspiring future generations to explore new frontiers.

The policy recognizes the significance of collaborative research and development efforts between academia, industry, and government institutions. By promoting partnerships and knowledge-sharing, India's space program is poised to benefit from interdisciplinary expertise and drive breakthrough innovations. Furthermore, the policy encourages technology transfer and intellectual property rights, enabling the commercialization of indigenous space technologies and creating opportunities for entrepreneurship.

Make in India is a national program launched by the Government of India in 2014. The goal of Make in India is to promote domestic manufacturing and reduce India's reliance on foreign imports. The initiative has been successful in attracting foreign investment and boosting manufacturing output in India.

The space sector is one of the key focus areas of the Make in India initiative. The government has taken a number of steps to promote indigenous capabilities in the space sector, including the Space Policy 2023. These steps are expected to help India become a global leader in the space sector.





How does the Space Policy 2023 support Make in India?

The Space Policy 2023 supports Make in India in a number of ways. First, the policy encourages domestic manufacturing of space-related products and services. This will help to create jobs and boost economic growth in India. Second, the policy provides incentives for companies that invest in research and development in the space sector. This will help to foster innovation and create new technologies that can be used for both civilian and military purposes. Third, the policy creates a favourable environment for entrepreneurship in the space sector. This will help to attract new businesses to India and create opportunities for young people.

### **Holistic Space Applications**

India's Space Policy 2023 highlights the transformative potential of space applications in addressing societal challenges and fostering inclusive development. With a vast array of applications ranging from agriculture and disaster management to healthcare and education, India's space program aims to improve the lives of its citizens through innovative solutions.

One significant aspect of the policy is its focus on using space technology to enhance agricultural productivity and food security. By leveraging satellite data and remote sensing techniques, farmers can access crucial information related to soil moisture, crop health, and weather patterns. This enables them to make informed decisions regarding irrigation, fertilizer application, and pest management, leading to increased yields and sustainable farming practices.

In the realm of disaster management, the policy underscores the role of space technology in early warning systems, post-disaster assessment, and response coordination. Earth observation satellites provide real-time data on weather patterns, natural disasters, and environmental changes, allowing authorities to take proactive measures and mitigate the impact of disasters. This capability becomes particularly crucial in a country like India, prone to diverse natural calamities such as cyclones, floods, and earthquakes.

Healthcare is another sector where space applications play a transformative role. Telemedicine, enabled by satellite communication, bridges the gap between patients and healthcare providers in remote areas, ensuring access to quality medical services.

Education also receives significant attention in India's Space Policy, with a focus on utilizing space technology to enhance learning experiences. The policy advocates for the integration of space-based data and tools into the curriculum, fostering scientific curiosity and nurturing a passion for exploration among students. By engaging students in satellite building projects and promoting student satellite missions, the policy aims to create a skilled workforce that can contribute to the development of India's space program in the future. This approach not only equips students with technical skills but also nurtures a spirit of innovation, critical thinking, and problem-solving.

### **Encouraging Space Entrepreneurship & Private Sector Participation**

India's Space Policy 2023 reflects a deep appreciation for the role of space entrepreneurship in driving technological innovation, economic growth, and job creation. The policy aims to create a vibrant ecosystem that nurtures and supports space start-ups and entrepreneurs, positioning India as a global hub for space entrepreneurship.

The policy acknowledges the need for favourable regulations, licensing frameworks, and financial support mechanisms to encourage private sector participation. It highlights the importance of streamlining approval processes, simplifying regulatory requirements, and offering incentives for private players in the space industry. This approach promotes a business-friendly environment that attracts investment, stimulates competition, and fosters innovation.

In addition, the policy emphasizes the significance of technology incubators, research parks, and innovation centers dedicated to the space sector. These platforms provide the necessary infrastructure, mentorship, and funding support to nurture and scale space start-ups. By facilitating collaboration between start-ups, academia, and industry, the policy creates a dynamic ecosystem that nurtures talent, fosters collaboration, and accelerates the growth of space entrepreneurship. The government just adopted the Indian Space Policy - 2023. The Indian Space Research Organisation (ISRO), the country's space agency, would focus primarily on the research and development of new space technology and applications, as well as on extending human understanding of the cosmos, according to the policy.

### **Nurturing Space Education and Research**

India's Space Policy 2023 recognizes the pivotal role of education and research in shaping the future of the nation's space program. The policy emphasizes the importance of investing in space education, nurturing a skilled workforce, and promoting cutting-edge research.



To cultivate scientific curiosity and passion for space exploration among students, the policy advocates for the integration of space-related concepts in school curricula. It encourages hands-on learning experiences, student satellite missions, and competitions to engage young minds and inspire the next generation of space scientists and engineers. By fostering a culture of inquiry and exploration, India aims to build a strong foundation of scientific literacy and instill a sense of national pride in its space program.

Furthermore, the policy emphasizes the establishment of centers of excellence and research institutions dedicated to space science and technology. These centers serve as hubs for advanced research, enabling interdisciplinary collaboration, and pushing the boundaries of scientific knowledge. The policy also promotes international research collaborations and encourages academic institutions to develop specialized space-related programs to meet the evolving demands of the space industry.

### **International Collaboration and Partnerships**

India's Space Policy 2023 recognizes the importance of international collaboration in advancing space exploration and research. The policy emphasizes India's commitment to forging strategic partnerships with other spacefaring nations, international organizations, and private entities. Such collaborations enable knowledge exchange, joint research, and technology transfer, propelling the nation's space program to new heights.

By actively participating in international forums and organizations, India seeks to contribute to the global space community while benefiting from shared expertise and resources. The policy encourages cooperative initiatives in areas such as satellite launches, data sharing, space science, and exploration. These collaborations not only accelerate technological advancements but also foster diplomatic relations, positioning India as a reliable and trustworthy partner in the international space arena.

India has already partnered with other countries on a number of space projects. For example, India and Russia are working together on the Gaganyaan project, which will send three Indian astronauts to space for 3 days. India is also working with the United States on a number of space projects, including the NASA- ISRO Synthetic Aperture Radar (NISAR) and ISRO Space Station and Human Mission Programme.

International cooperation in space is important for a number of reasons. It allows countries to share resources and expertise, which can help to reduce the cost of space exploration. It also allows countries to pool their knowledge and experience, which can help to advance space exploration.

Furthermore, the policy advocates for increased cooperation with the private sector. Recognizing the potential of public-private partnerships, the Indian government aims to create an enabling environment for private entities to participate in space activities. This approach not only attracts investments but also spurs innovation, entrepreneurship, and job creation. It opens doors for start-ups and enterprises to contribute to the space sector, bringing fresh ideas and agile approaches to the table.

### **Joint Statement from the United States and India**

On June 22, 2023, the United States and India issued a Joint Statement and some of the statement's specific points included space cooperation. These statements reaffirm the strong ties between the two countries in space and sets out a plan for further cooperation in a number of areas, including:

- Human spaceflight
- Earth Observation
- Space Science
- Commercial Space

### **Human Spaceflight**

A long-standing and productive partnership in Human Spaceflight exists between the United States and India, dating back to the 1960s. In recent years, this cooperation has intensified, with the two countries working together on a number of projects, including the development of the Crew Escape System for the ISS (International Space Station) and the Joint Mission to the Moon.

The Crew Escape System is a critical safety feature of the ISS, and it is a testament to the close cooperation between the United States and India. The system consists of two escape pods that can be used to evacuate astronauts from the ISS in the event of an emergency. The pods are designed to withstand the harsh conditions of space and can travel long distances.



The United States and India are also planning to send a Joint Mission to the Moon. The mission, which is scheduled to launch in 2024, will involve sending an Indian astronaut to the Moon's surface. The astronaut will conduct a number of experiments and collect samples of lunar soil and rock.

The cooperation between the United States and India in Human Spaceflight is a significant step forward in the relationship between the two countries. It demonstrates their commitment to working together on space exploration and development, and it could lead to significant advances in space technology.

### **Earth Observation**

The United States and India share an interest in Earth Observation and have a history of cooperation in this area. Earth observation satellites are used to collect data about the Earth's surface, atmosphere, and oceans. This data can be used for a variety of purposes, such as monitoring climate change, tracking natural disasters, and managing natural resources.

The United States and India have worked together on a number of earth observation projects, including the development of the ISRO-NASA SAR (Synthetic Aperture Radar) satellite. SAR satellites use radar to map the Earth's surface, even in cloudy or rainy weather. The data from these satellites can be used to track changes in the Earth's surface over time, such as the melting of glaciers or the growth of cities.

The cooperation between the United States and India in Earth Observation can help to improve our understanding of the planet and its resources. It can also help to protect our planet from the effects of climate change and other environmental threats.

### **Space science**

The United States and India are collaborating on a variety of Space Science projects that will increase our understanding of the Universe. Space Science initiatives are intended to investigate the expanse of space and our role within it. This includes researching the Sun, planets, stars, and galaxies.

The proclamation encourages collaboration on new missions to investigate the solar system and beyond. This might involve missions to Mars, Venus, or possibly Jupiter and Saturn's moons. Space scientific collaboration between the United States and India can help us make new discoveries and enhance our perspective of the universe.

### **Commercial Space**

The United States and India are working together to develop the Commercial Space Industry and create new opportunities for businesses and entrepreneurs. The Commercial Space sector is the part of the space industry that is involved in the development and launch of commercial space products and services. This includes satellites, launch vehicles, and ground stations.

Both the countries have already worked together on a number of commercial space projects, including the development of the PSLV (Polar Satellite Launch Vehicle) rocket. The PSLV is a commercial launch vehicle that is used to launch satellites into orbit. The PSLV has been used to launch a variety of satellites, including commercial satellites, scientific satellites, and government satellites.

The cooperation between the United States and India in the commercial space sector can help to boost economic growth in both countries. It can also help to create new jobs and opportunities for entrepreneurs and innovators.

Hence, the Joint Statement on space cooperation between the United States and India is a significant step forward in the relationship between the two countries. It demonstrates their commitment to working together on space exploration and development, and it could lead to significant advances in space technology. The declaration is a sign that the United States and India are committed to a strong and lasting partnership, and it could help to shape the future of space exploration for years to come.

### **Space Tourism: Inspiring Exploration, Fostering Cooperation, and Balancing Priorities**

The rise of Space Tourism as a rapidly growing industry has captivated people worldwide, with companies like Virgin Galactic, Blue Origin, and SpaceX leading the charge in developing suborbital vehicles for awe-inspiring journeys into space. This trend brings both excitement and concerns about risks and resource allocation. However, the positive impact of space tourism on international relations should not be underestimated.

Space Tourism has a unique ability to foster international cooperation and understanding. The involvement of private companies has opened avenues for collaboration, transcending political boundaries through joint ventures, research



projects, and missions. The shared experience of space exploration serves as a unifying force, emphasizing our common humanity and shared responsibility to protect our planet's future.

In addition to cooperation, space tourism holds economic potential. The industry's capital infusion generates substantial revenue that can be reinvested in further space exploration and research. Private companies, driven by profit motives, are compelled to develop safe, reliable, and cost-effective vehicles, driving innovative technologies benefiting not only the tourism sector but also broader scientific advancements.

However, it is essential to address the potential risks associated with space tourism, prioritizing passenger safety and preventing the inadvertent weaponization of space. Striking a delicate balance between accessibility and stringent safety standards remains a challenge. Safeguards and international agreements must be in place to maintain space as a peaceful realm for exploration and scientific progress.

Critics argue that space tourism diverts resources from pressing global challenges such as poverty alleviation and climate change mitigation. While this perspective merits consideration, it is important to recognize the broader societal benefits resulting from space exploration, including technological breakthroughs and scientific discoveries that impact various fields.

### Conclusion

The Indian Space Policy 2020 and the Joint Statement by the United States and India mark significant milestones in India's international relations and space-related development. The Indian Space Policy 2020, with its emphasis on indigenous capabilities, holistic space applications, space entrepreneurship, and international collaboration, paves the way for India to become a future space superpower. By fostering indigenous excellence, the policy aims to reduce dependence on external sources and boost India's technological sovereignty. Additionally, the policy recognizes the transformative potential of space applications in addressing societal challenges, such as agriculture, disaster management, healthcare, and education. It promotes space entrepreneurship and private sector participation, creating a vibrant ecosystem for innovation and economic growth. Furthermore, the policy acknowledges the importance of international collaboration, fostering strategic partnerships with other nations and organizations to drive scientific advancements and diplomatic relations.

Moreover, the Joint Statement by the United States and India solidifies the strong ties between the two countries in the realm of space cooperation. The statement highlights collaboration in areas such as human spaceflight, earth observation, space science, and commercial space. The partnership in human spaceflight, exemplified by projects like the Crew Escape System for the International Space Station and the Joint Mission to the Moon, demonstrates the commitment of both nations to space exploration and technological advancement. The cooperation in earth observation enhances our understanding of the planet and its resources, enabling better climate change monitoring and disaster management. Furthermore, joint efforts in space science projects contribute to our knowledge of the universe, from studying the Sun and planets to exploring distant galaxies. This collaboration not only strengthens the scientific capabilities of both nations but also fosters a closer relationship between the United States and India.

In conclusion, the Indian Space Policy 2020 and the Joint Statement by the United States and India provide a comprehensive framework for India's international relations and space-related development. The policy's emphasis on indigenous capabilities, holistic space applications, space entrepreneurship, and international collaboration positions India on the path to become a future space superpower. The partnership with the United States in human spaceflight, earth observation, space science, and commercial space further enhances India's capabilities and contributes to scientific advancements. With these significant steps, India is poised to make great strides in space exploration, technology, and international cooperation, solidifying its position as a key player in the global space community.

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