JIS UNIVERSITY

Space Revolution Day

Innovation for India's future in space

Organised by

Department of Computer Science and Engineering

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Department of

Computer Science & Engineering

The Department of Computer Science and Engineering offers 4-year B.Tech. and BCA programmes in Computer Science and Engineering.

At the undergraduate level, the Department lays emphasis on foundations in Computer Science and Engineering with emphasis on hardware / software / systems. The students get exposure to state-of-the-art education and hands-on experience through well-equipped laboratories. The students are encouraged towards innovative thinking supported by projects that support this process.

Vision :

Build a strong research and teaching environment towards meeting the future needs of the nation.

Mission :

- *Provide academic excellence through quality teaching-learning methods and train students to apply their knowledge to solve real world problems.*
- *Enhance the potential of the students towards career paths with high quality foundation in ethics and critical thinking.*

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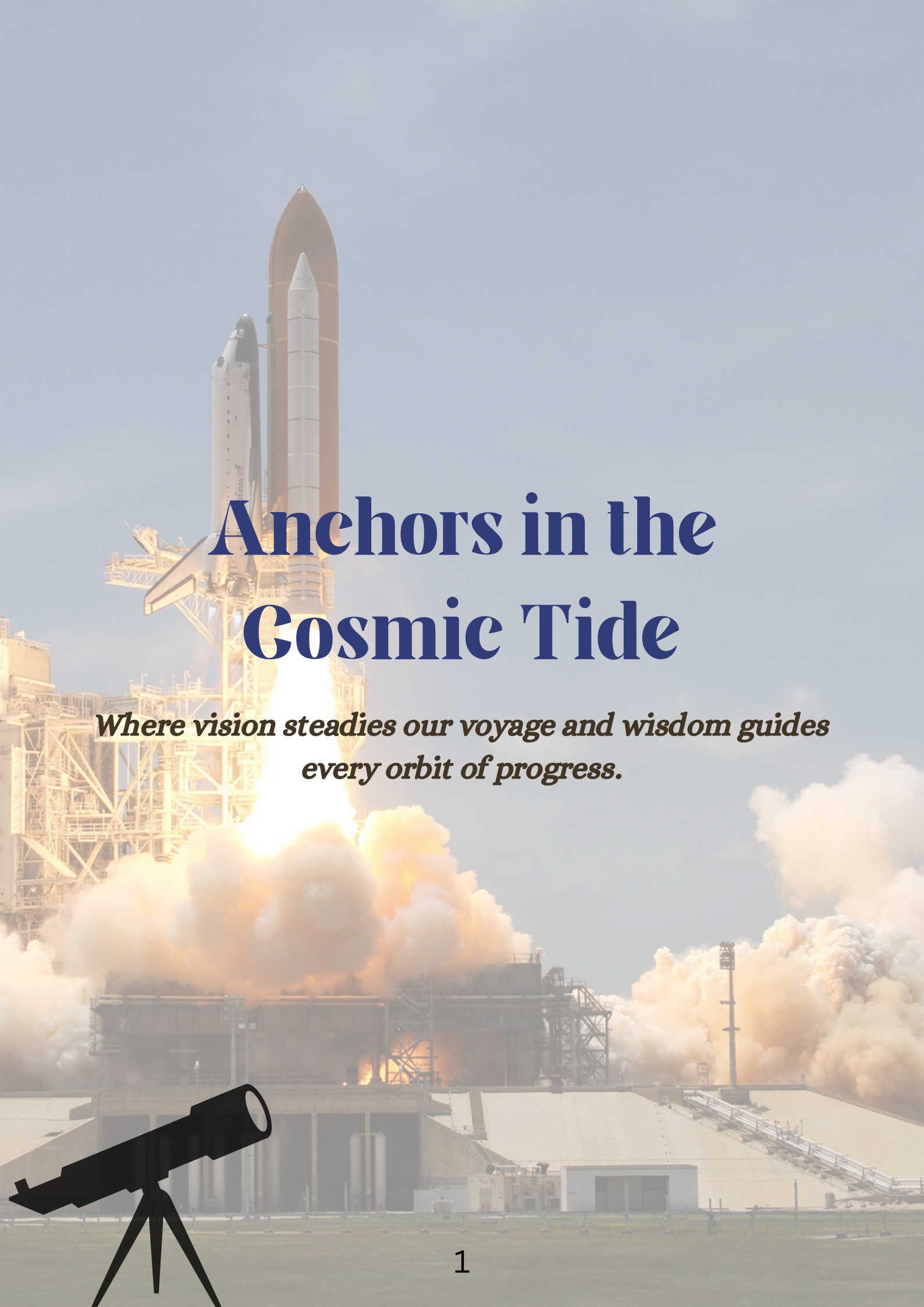


Anchors in the Cosmic Tide

Where vision steadies our voyage and wisdom guides every orbit of progress.

The pursuit of knowledge and exploration defines the future of any nation. At JIS University, we recognize that education in science and technology is a cornerstone for progress, innovation, and leadership. As Vice Chancellor, my vision encompasses nurturing a generation of thinkers and explorers who look beyond the horizon. We are committed to providing a learning environment where curiosity is celebrated, research is supported, and each student is empowered to reach their fullest potential. Space science is a testament to human ambition and resilience—and through world-class teaching and collaborative projects, JIS University stands at the forefront of advancing not just academic excellence but also a spirit of discovery that will propel India to new heights. Let us inspire our students to become global changemakers, ready to transform our world through knowledge and courage.

~Prof. (Dr.) Bhaskar Gupta

Vice Chancellor

At JIS University, our ethos is defined by a commitment to academic excellence, curiosity-driven research, and the development of future leaders. As Pro Vice Chancellor, I envision a campus where collaboration and creativity reign, nurturing students and faculty to achieve their highest potential. Our university's vibrant environment empowers individuals to embrace innovation and blended learning, preparing them for the dynamic challenges of tomorrow. Space science is a powerful symbol of what is possible when vision meets dedication—let us continue guiding our young minds to reach beyond boundaries and contribute meaningfully to society and the world. Together, we shall keep advancing knowledge and inspiring breakthroughs, placing JIS University at the forefront of educational transformation in India.

~ Prof. Goutam Ghosh

Pro Vice Chancellor

At JIS University, we celebrate the twin pillars of innovation and academic rigor essential for shaping the future leaders of tomorrow. With experiences across India's premier business schools and a dedication to scholarly exploration, my journey reflects the pursuit of excellence that this university instills in every student. Through fostering research, inspiring entrepreneurship, and promoting holistic learning, JIS University empowers its vibrant community to strive for impact—locally and globally. I am proud to be part of an institution where curiosity and creativity thrive, and where the spirit of discovery propels us ever forward in advancing education and contributing meaningfully to society.

~ Dr. Rajendra V. Nargundkar

Pro Vice Chancellor

Space has always inspired us to look beyond boundaries, dream bigger, and push the limits of innovation. At JIS University, we believe that fostering curiosity and scientific inquiry is the pathway to true progress. Our journey in nurturing young minds reflects India's own pursuit of excellence in the field of space research—a journey built on vision, perseverance, and the desire to use technology for societal development. As Pro Chancellor, it is my privilege to witness how this spirit of inquiry transforms our students into pioneers of tomorrow, ready to contribute not only to the advancement of science but to the betterment of humanity. Let us continue empowering our youth, for their dreams and dedication will define the next revolution in space and technology.

~ Dr. Neeraj Saxena

Pro-Chancellor

At the Department of Computer Science and Engineering, JIS University, our mission is to inspire boundless curiosity and nurture creative problem-solving skills in our students. Through cutting-edge research, rigorous teaching, and a curriculum designed to blend hardware and software excellence, we strive to equip the next generation of technologists and innovators. We foster a vibrant academic atmosphere where hands-on projects and ethical foundations support each learner's journey toward real-world impact. The achievements of India in space exploration stand as a beacon of what visionary thinking and persistent effort can accomplish. Let us continue to encourage our students to dream big, reach for the stars, and contribute meaningfully to technological advancements for society and the nation.

~Prof. (Dr.) Sandip Roy

Head of the Department, CSE

Beyond Blue Ink and Black Sky

An editorial expedition through words, wonder, and the boundless curiosity that fuels creation.

Dr. Sandip Roy

Professor, Head of the Department,CSE

Dr. Kaushik Adhikary

Assistant professor, Dept of CSE

Mr. MD Mizan Chowdhary

Assistant professor, Dept of CSE

As an Assistant Professor in the Department of Computer Science and Engineering at JIS University, I firmly believe that the convergence of scientific imagination and robust technical skills is what drives progress in today's world. Our students are continually encouraged to move beyond textbooks, to embrace practical experimentation and creative thinking. The inspiring legacy of India's space program and its pathbreaking achievements shine as proof that persistent learning and innovation can break barriers and redefine possibilities. At JIS University, we remain dedicated to raising future innovators who will leverage technology to benefit society, aiming always to touch new horizons—where ambition, ethics, and knowledge unite.

~Dr. Kaushik Adhikary

Assistant Professor, Dept. of CSE

In the Department of Computer Science and Engineering at JIS University, we encourage our students to think beyond the ordinary and embrace imaginative solutions to complex problems. As an Assistant Professor, I am dedicated to cultivating an environment where curiosity, rigorous inquiry, and the spirit of collaboration thrive. The space revolution of India inspires all of us in academia to champion innovation and perseverance. Our classrooms and laboratories serve as a canvas where form meets infinite possibility—each student empowered to leave a mark in technology and society. Together, we are preparing future engineers and researchers to contribute to transformative advancements and help shape the world of tomorrow.

~ Mr. Md Mizan Choudhary

Assistant Professor, Dept. of CSE

Beyond Lines and Light

Designs that breathe space into imagination — where form meets the infinite canvas of thought.

Rishav Pandey

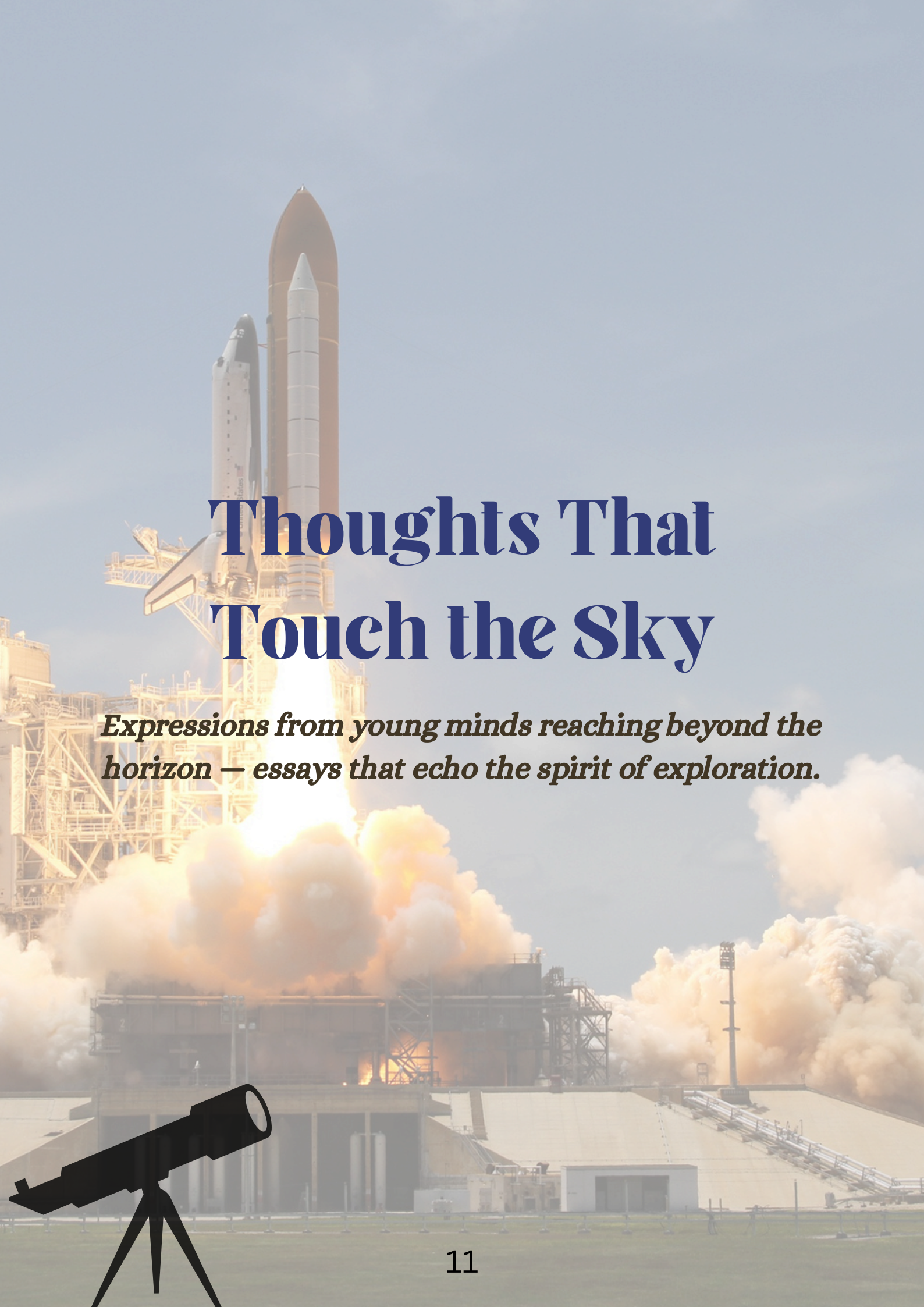
B. Tech CSE, 2025-2029

Srija Das

B. Tech CSE, 2023-2027

Jayabrata Ghosh

B. Tech CSE, 2025-2029



Thoughts That Touch the Sky

Expressions from young minds reaching beyond the horizon — essays that echo the spirit of exploration.

India's Achievements in Space

India's work in space shows great goals, alongside people working hard without giving up. The story begins with simple roots rising to the country's current status as a leader in space. It shows a nation consistently focused on improvement, seeking benefits for everyone, not just a display of strength. The Indian Space Research Organization consistently demonstrates that a growing country, with clear goals, smart work, and unwavering dedication can achieve what was previously possible only for leaders in the field.

This project began with work from Dr. Vikram Sarabhai's thought space science technology, "want a nice thing to have, it was essential for the country to improve." The ideas about helping people using satellites became the main reason. ISRO achieved its goal, for example, first launched rockets from a small fishing village, Thumba in Kerala, during a time of great discovery. These initial actions led to incredible accomplishments.

India built its own rockets to become independent in space travel. The Polar Satellite Launch Vehicle quickly became the go-to for ISRO due to its careful designing and performance. This way, India could send satellites into space with half its own doing. There are other nations that helped to strengthen India's position and provide affordable space services. ISRO started Mangalyan in 2013 with very little money. This achievement made in Asia to successfully orbit Mars, gaining the first nation to globally do it on its initial attempt. People felt a lot of national pride with this success, it showed brains matter more than having lots of stuff. It was clear for the whole world that India is now in the space race and catching up with other participants at the utmost speed.

India demonstrated growing skill in space travel with its trips to the moon, the Chandrayaan program. In 2008, Chandrayaan 1 found water on the Moon. This important discovery influenced later moon explorations by other teams by nations across the globe. In August 2023, the Vikram Lander touched down near the Moon's little known south pole. India achieved this groundbreaking accomplishment, first in the whole globe. People across India reacted with immense happiness and joy.

ISRO truly shines because it uses space technology to solve everyday problems. INSAT satellite greatly improved phone services, TV programs, and weather prediction. They provide important details that protect people, help businesses grow, satellites circling Earth give farmers valuable data. They help farmers watch their crops, also predict harvests. When disasters strike, space-based systems like ISRO's Disaster Management Support Programme (DMSP) help locate people, support rescue teams, deliver key aid for aid, and improve recovery work.

India achieves great things in space because people worked hard, dreamed big. ISRO showed everyone, from launching a rocket with a bicycle to precisely landing a rover on the moon, that a country's real power comes not from force but from big ideas, along with constant effort to make those ideas real.

~ Supradip Paul

Father of India's Space Program and Father of India's Space Revolution

India's achievement in space science and technology is the result of vision, dedication, and determination. India's success in space would not be complete without the mention of Dr. Vikram Sarabhai, colloquially referred to as the Father of the Indian Space Program. His leadership and vision provided the foundation for what we have come to call the Indian space revolution.

Dr. Vikram Sarabhai believed that space technology was not intended only to be used for prestige, but also to solve the practical needs of the country. "We do not have the fantasy of competing with the economically advanced nations in the exploration of the moon or the planets. But we are confident that if we are to play an important role, both within the country and in the world at large, we must be second to none in the application of advanced technologies to the real needs of man and society." Adhering to this philosophy, he established the Indian National Committee for Space Research in 1962, renamed as ISRO in 1969.

Under his leadership, India launched its first rocket from Thumba, Kerala, in 1963. He also initiated India's first satellite program, which led to the launch of Aryabhatta in 1969-1975. Dr. Sarabhai's emphasis on the practical use of Indian space technology for communication, education, agriculture, and weather forecasting became the backbone of India's space program.

The legacy of Dr. Sarabhai and his successors have given rise to the Indian space revolution. Currently, India boasts its own family of satellites such as INSAT, GSAT, and NavIC, which offer services in communication, navigation, and meteorology. The PSLV and GSLV have made India a triumphant satellite launching nation. Missions such as Chandrayaan-1, Mangalyaan, Chandrayaan-2, and Chandrayaan-3 have established India as one of the world's leading space powers.

The Indian space revolution has not just advanced science, but also supported development by improving education, agriculture, disaster management, and connectivity in remote areas. It has demonstrated how a developing nation can achieve world leadership through vision and commitment.

Summarily, the foundation laid by Dr. Vikram Sarabhai has become a strong space program which has induced national pride. India received a dream from the father of all the Indian space program, and through the Indian space revolution, that dream continues to motivate generations to come.

~ Suparno Das

INDIA'S ACHIEVEMENTS IN SPACE

India's space science and technology journey is the tale of vision, determination and innovation. From sending sounding rockets from a church building in Thumba in the 1960s, India is now having the capability of carrying out cost-effective missions. India's space achievements certainly lead to immense national pride all over the world. ISRO is the vehicle of this incredible ambition. The purpose was to make use of the benefits of space technology to help boost the industry sector and oil exploration. Over the years, India has become a nation with a strong capability to design, develop and implement complex space missions, contributing to development and science.

Early Foundations:

Initially, India depended a lot on others to launch its satellites. The people of India launched the first Indian satellite that was Aryabhatta. It was launched in 1975. It was launched with the help of the Soviet Union. The a turning off point was the establishment of ISRO, and research in space applications. Dr. APJ Abdul Kalam is popularly known as "Missile Man of India". During his early years, he also specialised in India's space and defence technology boost.

Satellite Development and Communication Revolution:

India had made quick strides in manufacturing its own satellites. The INSAT (Indian National Satellite System) and IRS (Indian Remote Sensing Satellites) series revolutionized TV broadcasting, telephone communications, meteorological prediction as well as disaster management in India. The data from remote sensing satellites was highly essential for agriculture, forestry, water resource management and urban planning. These applications demonstrated that India's space program was not just about prestige but actively lent a hand in bettering life for millions of people.

The Leap into Launch Vehicle Technology:

An inflexion point was achieved in developing native launch vehicles. PSLV transformed into the workhorse of ISRO, and has been widely used in global circles for its cost-efficiency. The rocket was the one that took India's maiden moon mission, Chandrayaan-1, into space in 2008. This was then succeeded by the Geosynchronous Satellite Launch Vehicle (GSLV) which allowed heavier satellites to be mounted in orbit. These tools also help India break free of dependence on overseas launchers and serve new customers with cheaper satellite launches.

Chandrayaan Missions:

Chandrayaan-1 was India's first mission to the Moon, and it discovered water molecules on the lunar surface. Building on this triumph, Chandrayaan-2 in 2019 aspired to put a lander down near the Moon's south pole. While the lander had a hard time during its descent, the orbiter is still sending back useful scientific measurements. The crowning glory came in 2023 with Chandrayaan-3 when India made a soft landing near the moon's south pole and became the first country to do so and only the fourth nation overall to achieve a lunar landing.

Mangalyaan - A Mars Orbit Mission Like Never Before:

One of India's great achievements, launched in 2013 is the Mars Orbiter Mission (Mangalyaan). India was the fourth country in the world to reach Mars orbit and what is more, it was accomplished on the maiden attempt! But what took the world by surprise was not just that the mission worked, but that its cost - compared to other nations' similar missions - was negligible. Mangalyaan thrust India into space exploration's major leagues.

Gaganyaan and Future Prospects:

India is on the cusp of its first human spaceflight mission, Gaganyaan. This mission will involve launching two or three "Vyomanauts," into space and represents a new era for India in space. India is also undertaking projects such as Aditya-L1 which will study sun and also collaborating with other countries for deep space exploration. The convergence of reusable launch vehicles and space-borne navigation systems such as NavIC is proof that India is increasingly looking to carve its niche in the domain of space technology.

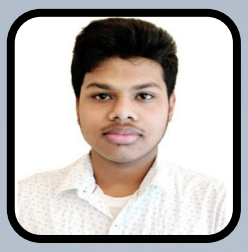
International Recognition and Business Success:

ISRO has gained global recognition for launching satellites of other nations at extremely competitive prices. The 2017 launch of a record 104 satellites in one mission displayed India's efficiency and technological capability. With its commercial arm, Antrix Corporation, India has emerged as a destination of choice for satellite launches by nations and private companies across the world.

Conclusion:

India's space achievement represents much more than technological success; they are the sum of home-grown capacity, innovation, and global contribution. From Aryabhatta to Chandrayaan-3, from PSLV launches to the upcoming Gaganyaan mission, India has demonstrated how a nation with limited resources, imaginative leadership and scientific dedication can lead to extraordinary outcomes. As India looks toward the future, its space program is set to play a definitive responsibility in addressing global challenges, and its scientists are daring to dream beyond the skyline. Truly, India's journey in space is not just a story of rockets and satellites—it is a story of national pride and humanity.

~ Sumit Kumar



India's Achievements in Space

India, one of the world's fastest-growing nations, has made remarkable strides in science and technology, and among its greatest achievements are in the field of space exploration. The Indian Space Research Organisation (ISRO), established in 1969 under the leadership of Dr. Vikram Sarabhai, has transformed India into a global space power. Over the past five decades, India has not only developed the capacity to build and launch satellites but has also carried out groundbreaking missions that showcase innovation, cost-effectiveness, and scientific excellence.

Early Achievements and Foundations : India's space journey began modestly with the launch of the Aryabhata satellite in 1975. Though launched from a Soviet rocket, it marked the first step towards self-reliance in space technology. In the following years, India developed the Satellite Launch Vehicle (SLV) and later the Polar Satellite Launch Vehicle (PSLV), which became the workhorse of ISRO. The PSLV gained international recognition for its reliability and ability to launch multiple satellites into orbit simultaneously, making India a preferred partner for commercial launches.

Lunar and Mars Missions : One of the most celebrated milestones was the Chandrayaan-1 mission in 2008, India's first mission to the Moon. This mission confirmed the presence of water molecules on the lunar surface, a discovery acknowledged worldwide. Building on this success, India launched Chandrayaan-2 in 2019, which, despite the lander's hard landing, successfully placed an orbiter that continues to send valuable scientific data.

In 2014, India astonished the world with the Mars Orbiter Mission (Mangalyaan), making India the first Asian country and only the fourth in the world to reach Mars orbit. What made this achievement even more remarkable was its cost-effectiveness: the mission cost less than many Hollywood movies. Mangalyaan demonstrated India's ability to achieve interplanetary exploration at a fraction of the cost of other nations.

Satellite Programs : India's space achievements extend beyond launches. The INSAT (Indian National Satellite System) series revolutionized communication, broadcasting, and meteorology in the country. Similarly, the IRS (Indian Remote Sensing) satellites have provided crucial data for agriculture, forestry, water management, and disaster monitoring. These programs have significantly contributed to national development, proving that space technology is not just about exploration but also about improving everyday life.

Recent and Ongoing Successes : In 2023, India achieved a historic feat with Chandrayaan-3, successfully landing on the Moon's south pole region. This achievement made India the first nation to reach this unexplored area, cementing its position as a global leader in space research. The mission demonstrated not only technological precision but also India's determination to overcome past challenges.

Additionally, ISRO has launched ambitious projects like Aditya-L1, India's first mission to

study the Sun, and is preparing for the Gaganyaan program, which aims to send Indian astronauts into space. These missions signify the next phase of India's space journey, moving from planetary exploration towards human spaceflight.

International Collaborations : India has also contributed to the global space community. Through commercial arms like Antrix Corporation and NewSpace India Limited, ISRO has launched satellites for countries across the world. By offering cost-effective solutions, India has earned the reputation of being a reliable partner for space exploration. Collaborations with NASA, ESA, and other agencies further enhance India's global presence.

Conclusion : India's achievements in space reflect the vision of its pioneers, the dedication of its scientists, and the support of its people. From launching its first satellite to becoming a key player in lunar and Martian exploration, India's journey has been extraordinary. As the country looks forward to human spaceflight and deeper space missions, it stands as a shining example of how determination and innovation can turn challenges into triumphs. India's space program not only inspires its citizens but also contributes significantly to the advancement of global space science.

~ Sujoy Nag

India's Achievements in Space

India's journey into space has been a story of vision, dedication, and self-reliance. From humble beginnings in the 1960s, today India is counted among the leading spacefaring nations of the world.

The Indian Space Research Organisation (ISRO) has made the nation proud through remarkable achievements that inspire confidence and open new possibilities for the future.

Early Beginnings The foundation of India's space programme was laid by Dr. Vikram Sarabhai, who believed that space technology must serve the common man. With limited resources but great determination, India launched its first satellite, Aryabhata, in 1975. This historic step showed that India was ready to use space for education, communication, and development.

Satellite Technology India has developed a strong network of satellites for communication, weather forecasting, navigation, and remote sensing. The INSAT series brought television, telecommunication, and cyclone warnings to rural and urban areas alike. The IRNSS/NavIC system now provides India with its own GPS service, which is vital for defense and transportation. Launch Vehicle Success One of the proudest achievements of India is its ability to launch satellites on its own. The PSLV (Polar Satellite Launch Vehicle) is famous worldwide for its reliability. In 2017, PSLV created a world record by launching 104 satellites in a single mission. The GSLV Mk III, India's heaviest rocket, made it possible to launch bigger satellites and carry missions to the Moon and Mars. Interplanetary Missions India stunned the world with the success of the Mangalyaan (Mars Orbiter Mission) in 2014. It made India the first Asian country to reach Mars orbit, and the first nation in the world to succeed on its maiden attempt. In 2008, Chandrayaan-1 discovered water molecules on the Moon, which was a landmark discovery for global science. More recently, Chandrayaan-3 (2023) made history when its lander, Vikram, successfully landed near the Moon's south pole—an area never explored before.

Human Spaceflight and Future Plans India is preparing for the Gaganyaan Mission, which aims to send Indian astronauts into space on an Indian rocket. ISRO is also planning ambitious projects like the Aditya-L1 solar mission, advanced satellites for agriculture and disaster management, and potential missions to Venus. These efforts show India's growing confidence in becoming a leader in space exploration. Impact on Society The real success of India's space programme is how it benefits ordinary citizens.

Satellite communication has improved education, healthcare, and banking services in remote areas. Farmers get weather forecasts and crop advice through space applications. Navigation systems help in transport, disaster management, and security.

Conclusion India's achievements in space are not just about technology—they reflect the spirit of a nation that dares to dream big. From launching small rockets on a beach in Thumba to landing on the Moon's south pole, India has shown that determination and innovation can overcome every obstacle. With a strong vision and continuous progress, India is on its way to becoming a global leader in space exploration.

~ Subhajit Paul

Father of India's Space Programme and Father of Indian Space Revolution

"Those who dream the most, do the most!" This statement perfectly captures the spirit of India's space journey, a journey that began with immense motivation and a clear vision. While the USA and Russia are pioneers, India's achievements in space technology are not accidental; they are the results of vision and dedication of two extraordinary leaders, Dr. Vikram Sarabhai, the father of India's space program, and Dr. A.P.J. Abdul Kalam, the father of Indian space revolution. Their efforts turned India into a technologically dependent nation into a global leader in space research and exploration.

Dr. Vikram Sarabhai - Father of India's Space Programme

Born with India becoming an independent nation that was burdened with poverty and illiteracy. In such a context, the idea of investing in space research seemed extravagant. But Dr. Vikram Sarabhai, a visionary physicist, saw space as a tool for development. He firmly believed that advanced technology must be harnessed for solving the real problems of society.

Dr. Sarabhai established the Indian Space Research Organization (ISRO) in 1969. Under his leadership, India built the Thumba Equatorial Rocket Launching Station (TERLS) in Kerala, which became the cradle of India's space program. He also initiated the Satellite Instructional Television Experiment (SITE) which brought education and information to remote villages using space technology.

"Perhaps his most famous statement reflects his philosophy: 'We do not have the fantasy of competing with the economically advanced nations in the exploration of the Moon or the planets. But we are convinced that we must be second to none in the application of advanced technologies to the real problems of man and society."

Dr. A.P.J. Abdul Kalam - Father of Indian Space Revolution

If Sarabhai laid the foundation, Dr. A.P.J. Abdul Kalam turned it into a revolution. As the project director of SLV-III, Abdul Kalam played a pivotal role in making India technologically self-reliant in both space and defence.

He began his career in 1960 under the guidance of Sarabhai and then rose to prominence as the Project Director of SLV-III (Satellite Launch Vehicle). He successfully launched a small satellite in 1980, marking India's entry into the league of nations capable of building and launching its own satellite. He was instrumental in developing the Polar Satellite Launch Vehicle (PSLV), which later became ISRO's workhorse for launching satellites, both India and foreign.

Beyond rockets and satellites, Kalam's leadership in missile technology established India's strategic strength. But more than his scientific contributions, it was his ability to inspire, millions of young Indians to dream big and armed with the title of "People's President", he often said, "Dream, dream, dream. Dreams transform into thoughts and thoughts result in action!"

India's Space Journey - Living their Legacy

The combined vision of Sarabhai and Kalam continued to guide India's space program. From the first launch site in a fishing village, India has now reached near the moon's south pole.

* Chandrayaan-3 (2023) - India became the first nation to achieve this feat.
* Mangalyaan (2014) - The Mars orbiter mission, conceived at the lowest cost in the world.
* Gaganyaan (2025) - India's first mission to study the sun, demonstrating bold scientific ambition.
* Gaganyaan (Upcoming) - India's first human spaceflight program is planned to send Indian astronauts into space.
* Commercial launches - India has emerged as a preferred partner for launching satellites of various nations.
* Under the leadership of Honourable Prime Minister Shri Narendra Modi ji, India has also prioritized space diplomacy, private sector participation etc and Kalam's carried forward with renewed vigor.

Conclusion:

India's space journey is a story of vision, courage, and determination. Dr. Vikram Sarabhai laid the foundation, providing the vision for self-reliance and progress. Dr. A.P.J. Abdul Kalam carried the mission forward, igniting a revolution of self-reliance. From a humble beginning in a small fishing village in Kerala to the Moon and Mars, India has risen as a global space leader. Under P.M. Modi's leadership, the journey has continued with renewed vigor. Their vision remains a beacon for India, an ever-shining story that is not over.

~ **Sonia Koley**

Dr. Vikram Sarabhai

Dr. Vikram Ambalal Sarabhai was one of India's greatest scientists, a visionary Indian physicist, and an astronomer. He is widely considered the Father of India's Space Program. His pioneering efforts, contribution in science and technology, and also in education have had a lasting impact on the nation and on today's generation.

Early life and education

Dr. Vikram Sarabhai was born on August 12, 1919, in Ahmedabad, Gujarat, into a prominent family of industrialists. His family supported India's freedom and education, and scientific thought. He pursued his early education at the University of Cambridge in the United Kingdom, but he completed his early education in India. In the University of Cambridge he received his PhD in Natural Sciences in 1940. After returning to India during World War II, he worked at the Indian Institute of Science (IISC), Bengaluru, under Dr. C.V. Raman.

Building scientific institutions and contributions

Dr. Vikram Sarabhai was not just a physicist but also a visionary institution builder. He established the Physical Research Laboratory (PRL) in Ahmedabad in 1947, which became the cradle of space sciences in India, at the age of 28. He also established the Ahmedabad Textile Industry's Research Association, which played a key role in setting up the Indian Institute of Management Ahmedabad (IIMA) and the Community Science Centre. His most significant contribution came in the 1960s when he initiated India's space program.

He also established the Space Applications Centre (SAC). Founder of ISRO: Dr. Sarabhai was one of the most important achievers for the establishment of the Indian Space Research Organisation (ISRO) in 1969. After the launch of the Russian Sputnik, he convinced the Indian government about the need for a space agency focused on peaceful purposes. Today, ISRO is one of the world's leading space agencies, thanks to the foundation he laid.

Leadership in space and nuclear programs

Dr. Sarabhai is known as the founder of ISRO. In 1962, he established the Indian National Committee for Space Research (INCOSPAR), which was later evolved into the ISRO. With the support of Dr. Homi Bhabha, Sarabhai set up India's first rocket launch site at Thumba near Thiruvananthapuram and initiated the project that led to the launch of India's first satellite, Aryabhata, in 1975, though he did not live to see its launch.

Scientific achievements and national contributions

His personal work in cosmic ray research was groundbreaking. He promoted the practical application of scientific advancement, believing that science should serve the common man. He established the Darpana Academy for Performing Arts and the Fast Breeder Test Reactor project at Kalpakkam.

Personal qualities

Dr. Vikram Sarabhai was not just a scientist, but also a philosopher and a firm believer in using science for social good. He was known for his humility and his ability to inspire young minds.

Legacy and honors Dr. Vikram Sarabhai received numerous national awards, including the Shanti Swarup Bhatnagar Award in 1962, the Padma Bhushan (1966), and the Padma Vibhushan (posthumously) in 1972. He served as president of several scientific organizations, such as the Indian Science Congress.

Death

Dr. Vikram Sarabhai passed away unexpectedly on December 30, 1971, at the young age of 52. His legacy lives on through the institutions he built and the vision he set for India's development through science and technology.

Conclusion

Dr. Vikram Sarabhai's life is an inspiring example of how science and innovation can be used to transform a nation. His vision and dedication laid the groundwork for India's achievements in space and science. Even today, India's space missions carry the dream that Dr. Sarabhai once envisioned—a self-reliant, scientifically advanced India.

~ Sneha Bandyopadhyaya

India's Achievements in Space

India's journey into space is not just about rockets, satellites, or missions. It is a saga of dreams turning into reality, of courage rising above limitations, and of a nation proving to the world that determination can overcome even the strongest barriers. Every milestone achieved in space has carried within it the heartbeats of millions of Indians who dare to believe that the sky is not the limit—it is only the beginning.

When Dr. Vikram Sarabhai laid the foundation of ISRO in 1969, he did not dream of competing with the world's superpowers. His vision was clear: to use space technology for solving India's problems, for communication, education, weather forecasting, and national development. The journey began big, with a small church in Thumba serving as the first rocket launch station, and it has now grown into one of the most respected space organizations in the world. From Sarabhai's initial vision in 1970 to Chandrayaan-3 in 2023, the journey has been breathtaking.

One of India's most remarkable strengths has been the ability to achieve greatness with limited resources. The Polar Satellite Launch Vehicle (PSLV) became a symbol of reliability and cost-effectiveness. In 2017, India stunned the world by launching 104 satellites in a single mission, setting a global record. This was not just a technical achievement; it was a statement of efficiency, precision, and innovation.

India's space program is deeply connected with the everyday lives of its citizens. The INSAT and GSAT series of satellites have revolutionised telecommunications, broadcasting, and disaster management. Weather satellites have saved countless lives by providing accurate predictions of cyclones and floods. The NavIC navigation system is India's own, a reflection of technological self-reliance and national security. These achievements prove that space research is not detached from our own lives; it is woven into the progress of every household, farmer, and student.

Beyond practical applications, India's achievements have also touched the stars. The Chandrayaan missions ignited a new sense of wonder in every Indian heart. Chandrayaan-1 discovered water molecules on the Moon, a finding that changed lunar science forever. Chandrayaan-3 proudly placed India on the global stage by successfully landing on the Moon's south pole—an achievement no other nation had accomplished before. In that moment, the tricolour on the lunar surface became a symbol of Indian resilience and genius.

If Chandrayaan made us look at the Moon with pride, Mangalyaan made us look at Mars with awe. The Mars Orbiter Mission (MOM) of 2014 achieved the impossible: India became the first Asian country to reach Mars orbit and the first in the world to do so on the very first attempt. And all of this was done at a fraction of the cost of similar international missions, showing the world that frugality and excellence can go hand in hand.

India's vision does not stop here. The Aditya-L1 mission to study the Sun has already begun a new chapter in solar science. The upcoming Gaganyaan mission aims to send Indian astronauts into space, marking the dawn of human spaceflight for the nation. Meanwhile, collaborations

with private industries are opening a new horizon for space startups, making India a global hub of innovation.

Each of these milestones is more than just a technical triumph—they represent the spirit of a nation rising, from being underestimated to becoming a leader in affordable space technology. India's journey has been nothing short of inspirational. It teaches us that greatness does not require endless wealth, but endless willpower.

Space exploration is also deeply symbolic for India. It reflects our civilizational ethos—of curiosity, of seeking the unknown, and of finding harmony between science and spirituality. Just as our ancestors once gazed at the stars to understand the cosmos, today our scientists build spacecrafts to understand them. The continuity of this quest connects our past, present, and future.

As India celebrates its achievements in space, we must also reflect on what lies ahead. The dream of "Vishv Bharat 2047" cannot be fulfilled without bold strides in science and technology. Our youth must embrace this vision, not merely as spectators, but as active participants. Every rocket launch should remind us that the true engine of progress is not fuel or metal; it is the combination of young minds and the courage to chase the impossible.

In the end, India's space program is not just about reaching the Moon, Mars, or beyond. It is about reaching within ourselves—the realisation that when we come together with determination, there is no frontier too distant, no sky too high. The tricolour fluttering on the lunar south pole is not just a national achievement; it is a call to every Indian to dream big, to rise above limits, and to believe that the universe itself is waiting for us.

~ Sanjana Prasad

Dr. Vikram Sarabhai

Dr. Vikram Sarabhai was the visionary architect of India's space revolution, often called as the Father of the Indian Space Programme. He was born in 1919. In his early life he was marked by an inquisitive mind and a passion for research. After completing his study in India and at Cambridge University, he returned home with a firm belief in the potential of scientific advancement.

Dr. Vikram Sarabhai's most significant contribution was the establishment of Indian Space Research Organization (ISRO) in 1969. He convinced the Indian government of the importance of an indigenous space program. Under his truthful leadership, India's space program adopted a pragmatic approach, focusing on developing cost-effective and reliable technology. He was also instrumental in setting up the Thumba Equatorial Rocket Launching Station and envisioned a project that would lead to the launch of India's first satellite, Aryabhatta, which was launched in 1975, four years after his passing. Dr. Vikram Sarabhai's legacy extends beyond ISRO. He also established numerous other institutions including the Physical Research Laboratory (PRL), demonstrating his commitment to nurturing scientific talent and infrastructure in India.

~ Sambhu Ojha

India's Achievements in Space Technology

India's journey in space exploration is one of vision, perseverance, and innovation. From a modest beginning in the 1960s, when scientists worked with limited resources, India has emerged as a global leader in space technology. ISRO, established in 1969 under the guidance of "Dr. Vikram Sarabhai," has played a central role in transforming India into a space-faring nation.

Early Developments:

* Foundation of ISRO: India's space journey began with the aim of using space technology for societal benefits such as communication, weather forecasting, and resource management.
* First satellite - Aryabhata (1975): India launched its first satellite, 'Aryabhata', marking the country's entry into the global space arena.
* SLV and ASLV: The development of the satellite Launch Vehicle (SLV) and Augmented Satellite Launch Vehicle (ASLV) laid the foundation for future launch capabilities.

Development of Launch Vehicles:

* PSLV (Polar Satellite Launch Vehicle): Known as the 'workhorse' of ISRO, PSLV became one of the most reliable and cost-effective launch vehicles, capable of launching satellites into polar and sun-synchronous orbits.
* GSLV (Geo-synchronous Satellite Launch Vehicle): GSLV enabled India to launch heavier communication satellites and develop cryogenic engine technology.

Landmark Missions:

* Chandrayaan-1 (2008): India's first mission to the Moon made a groundbreaking discovery of water molecules on the lunar surface.
* Mangalyaan (2013): India became the first country to reach Mars on its maiden attempt and at one of the lowest costs globally, showcasing its technological excellence.
* Chandrayaan-2 (2019): Although the lander faced challenges, the orbiter continues to provide valuable lunar data.
* Chandrayaan-3 (2023): A historic success, making India the first country to land near the Moon's south pole.
* Aditya-L1 (2023): India's first mission to study the Sun, focusing on solar winds and their impact on Earth.

Satellite Programs:

* INSAT (Indian National Satellite System): Provides communication, broadcasting, and weather forecasting services.
* NAVIC: India's own navigation system, offering accurate positioning services similar to GPS.
* IRS (Indian Remote Sensing): Helps in agriculture, forestry, water resource management, and disaster relief operations.

Global Contributions:

* Commercial Launch Services: India offers cost-effective satellite launches for other countries, earning the nickname "Launch Pad of the World".

* International Co-operation: ISRO collaborates with NASA, ESA, JAXA, and other agencies, contributing to global scientific research and satellite technology.

Future Plans:

* Gaganyaan Mission: India's first human spaceflight program aims to send Indian astronauts into space.

* RLV (Reusable Launch Vehicle): Development of reusable rockets to reduce launch costs.

Significance of India's Achievements:

India's space achievements are not just about scientific advancement—they improve everyday life. Weather forecasting, telecommunication, GPS navigation, and agricultural planning have all benefited from space technology. These contributions enhance India's economy and strengthen self-reliance.

Conclusion:

India's achievement in space technology reflects the country's vision of combining science with social progress. From launching small satellites to exploring the Moon, Mars, and the Sun, India has demonstrated that determination and innovation can overcome limited resources. With upcoming missions like Gaganyaan and interplanetary exploration, India is set to continue its inspiring journey, paving the way for a brighter and technologically advanced future.

~ Riya Panda

India's Achievements in Space

India's Space Journey is not just about rockets and Satellites, it is about the story of a nation that turned limitations into opportunities. Starting in the 1960s with very little funding and advanced facilities, India now ranks among the top in the world. The Indian Space Research Organisation (ISRO), founded under the leadership of Dr. Vikram Sarabhai, has shown that science combined with vision and determination, can transform the destiny of the nation.

India's first satellite Aryabhata, launched in 1975, was marking what truly set India apart was the development of its own launch vehicles. The PSLV (Polar Satellite Launch Vehicle) became the backbone of ISRO and earned international respect for its unmatched reliability. In fact, in 2017, a PSLV rocket set a world record by placing 104 satellites into orbit in a single mission, most of them from foreign countries. One of the proudest moments came with Chandrayaan-1 in 2008 which confirmed the presence of water on the moon.

Chandrayaan 3, from launching Aryabhata Satellites on bicycles to sending mission to the moon, are a testament to the nation's spirit of self-reliance and innovation. India's achievements with projects like Gaganyaan, Shukrayaan (Venus mission) and plans for its own space station by 2035. These milestones not only make every Indian proud but also prove that for Indians, the sky is not the limit, the universe is.

~ Rishav Pandey

India's Achievements in Space

India's space journey began with Dr. Vikram Sarabhai, who believed space technology should serve national development. From a small church in Thumba to becoming a global space leader, ISRO's path is a story of vision, innovation, and determination.

Early milestones:

* Aryabhata (1975): India's first satellite.
* SLV-3 (1980): First successful satellite launch vehicle.
* INSAT & IRS series: Strengthened communication, weather forecasting, agriculture, and disaster management.

Launch vehicle success

* PSLV: Reliable workhorse; in 2017, it launched 104 satellites in one mission, setting a world record.
* GSLV Mk III: Enabled heavier payloads and interplanetary missions.

Exploration breakthroughs

* Chandrayaan-1 (2008): Discovered water molecules on the Moon.
* Mangalyaan (2013): First Asian mission to Mars, successful on maiden attempt, with lowest global cost.
* Chandrayaan-3 (2023): First-ever landing on the Moon's south pole.
* Aditya-L1 (2023): India's first solar mission to study the Sun.

Applications for people

* GISAT & NAVIC satellites: Indigenous navigation and communication.
* Remote sensing: Helps agriculture, urban planning, and disaster relief.
* Weather satellites: Safeguard fishermen and coastal communities.

Global impact

India offers low-cost, reliable launches, earning the reputation of the "world's launchpad." It has launched satellites for dozens of nations, making space accessible to all.

Future plans

* Gaganyaan: India's first human spaceflight program.
* Reusable launch vehicles: To reduce costs.
* Lunan bases & interplanetary missions: Plans for Moon, Mars, and beyond.
* International cooperation: Collaborations with NASA, JAXA, ESA, and leadership in global space initiatives.

Conclusion

India's space program stands on the vision of Sarabhai and the dedication of ISRO scientists. From Aryabhatta to Chandrayaan-3, India has moved from basic satellites to pioneering planetary exploration. Its achievements prove that space is not a distant dream but a tool for development and a symbol of national pride. For India, the sky is not the limit—it is beginning.

~Riju Bera

India's Achievements in Space

Space is the huge, endless area that starts beyond the Earth's atmosphere, where matter and energy exist and interact. It includes everything like stars, planets, galaxies and dust, all controlled by gravity. Space is full of vacuum with very low pressure and temperature, very different from Earth.

India's journey in space and technology is a story of hard work, smart thinking and big dreams. It began when ISRO was set up in 1969 to help the country grow through science and innovation. In 1975, India launched its first satellite, Aryabhatta, marking the start of its space achievements. Along with space, India has also made progress in fields like nuclear energy, computers and medicine. Today, India is proud to be one of the leading countries in science and technology.

India's space program stands out globally for its cost-effective innovation, scientific precision and self-reliance. The successful Mars Orbiter Mission (Mangalyaan) in 2013 on a remarkably low budget. The Chandrayaan missions further demonstrated India's growing expertise in lunar exploration, with Chandrayaan-3 making a historic soft landing near the Moon's south pole in 2023. India is also known for launching satellites for many other countries, showcasing its reliability in space technology. The focus on indigenous development, combined with strategic global collaborations, has made India a key player in the international space community.

Its space program reflects a blend of scientific excellence and national vision, aimed at both exploration and societal benefit.

India has extraordinary progress in space technology, evolving from modest beginnings to becoming a leading spacefaring nation. ISRO's achievements show that India has the capability to conduct complex interplanetary missions on limited budgets. India has also become a trusted provider of satellite launches for many countries. Through innovation, self-reliance, and strategic vision, India has carved a unique place in global space exploration.

~ Rachana Shukla

VIKRAM SARABHAI

Vikram Sarabhai was a visionary scientist, innovator, and institution builder who played a pivotal role in shaping India's space program. Born on August 12, 1919, in Ahmedabad, Gujarat, he was the son of a renowned industrialist and a highly educated mother. From a young age, Sarabhai showed a keen interest in science and technology, which eventually led him to pursue a career in the field of space research.

Sarabhai's contributions to the Indian space program are immense and far-reaching. He founded the Physical Research Laboratory (PRL) in Ahmedabad in 1947, which later became a leading research Institute in the country. He also played a key role in establishing the Indian National Committee for the formation of the Indian Space Research Organization (ISRO) in 1969. One of Sarabhai's most significant achievements was the successful launch of India's first satellite, Aryabhata in 1975. This marked the beginning of India's Journey into space exploration and established the country as a major player in the global space arena. Sarabhai's vision and leadership were instrumental in shaping ISRO into a world-class space agency that has achieved numerous milestones over the years.

Apart from his contribution to space program, Sarabhai was also a pioneer in the field of science education and research. He founded several institutions including the Indian Institute Management Ahmedabad (IIMA) and Community Science Centre in Ahmedabad, to promote scientific education and research in the country. He believed that science and technology were essential for the progress and development of the nation and worked tirelessly to promote these fields in India.

Sarabhai's legacy continues to inspire generation of Scientists, researchers, and Innovators in India and around the world. His vision of harnessing scientists and space technology for the benefit of society has led to the development of numerous satellite-based applications in areas such as communications, weather forecasting, agriculture, and disaster management. ISRO's achievements, including the successful Mars Orbiter Mission (Mangalyaan) in 2014, have further cemented India's reputation as a leading space Faring nation.

In conclusion, Vikram Sarabhai was a visionary scientist and institution builder whose contributions to the Indian space program have laid a lasting impact on the Country's scientific and technology capabilities. His pioneering work in space researching, education, and innovation continues to inspire and motivate future generations to push the boundaries of knowledge and explore new frontiers in science and technology. Sarabhai's legacy will always be remembered as a beacon of Inspiration for all those who strive to make a positive difference in the world.

~ Protim Chandra Roy

Dr. Vikram Sarabhai: The Architect of Modern Indian Science

Dr. Vikram Sarabhai (1919-1971) was a visionary physicist and institution builder widely regarded as the Father of the Indian Space Program. His life's work was dedicated to harnessing science and technology for national development and uplifting the lives of ordinary people. He was not just a scientist but also an innovator, an industrialist and a man with an unwavering belief in India's potential.

Early life and Education:

Born into an affluent and influential industrialist family in Ahmedabad, Gujarat, Sarabhai's early life was steeped in a politically charged environment. After graduating from Gujarat college, he went to the University of Cambridge and earned a Tripos in Natural Sciences. In 1940, he returned to India, drawn to his homeland, and began his research on cosmic rays under the guidance of Nobel laureate Sir C.V. Raman at the Indian Institute of Science, in Bangalore. His research culminated in a Ph.D. from Cambridge in 1947.

A Pioneer of Institution:

Sarabhai's most enduring legacy lies in his role as a creator of institutions. At just 28, he founded the Physical Research Lab (PRL) in Ahmedabad in 1947. PRL became the cradle of space science in India, a pioneering center of research in cosmic rays, atmospheric sciences, and astrophysics. His vision extended beyond science, as he also played a major role in the creation of the Indian Institute of Management (IIMA), bringing together government and industry to establish a world-class management education institute.

Sarabhai's most significant achievement, however, was the establishment of the Indian Space Research Organization, convincing the government that a developing nation like India could not afford to be left behind in space exploration. He laid the foundation for the indigenous development of space technology, which would later to used to solve real-world problems. He set up the Thumba Equatorial Rocket Launching Station (TERLS), the first rocket launching station in India, near the geometric equator, a strategic location for atmospheric research. He also initiated the Satellite Instructional Television Experiment (SITE) to broadcast educational television programs to remote villages.

Legacy and Impact:

Dr. Sarabhai's contribution were not limited to space research. He became the chairman of the Atomic Energy Commission after the death of Homi Bhabha and was instrumental in the development of India's nuclear power program. He founded or helped established dozens of institutions including the Ahmedabad Textile Industry's Research Association (ATIRA), the Vikram Sarabhai Community Science Center, and the Operations Research Group (ORG). His holistic approach to science and his belief in human potential left an incredible and long-lasting legacy. He was posthumously awarded the Padma Vibhushan in 1972.

Death:

Dr. Sarabhai passed away on December 30, 1971, at age of 52. He was in Kovalam, a coastal town

in Kerala. The official cause of death is cardiac arrest. His death came after five years after the death of Dr. Homi Bhabha, the founder of Indian nuclear program, who also died in a mysterious plane crash in 1966. The death of both Vikram Sarabhai and Homi Bhabha was a quick succession, at a time when country was making significant strides in its nuclear and space programs, fuelled speculations of international foul play. While the official death news is cardiac arrest, the suspicion and theories surrounding the death of a post-mortem and the timing of his death continues to be a subject of discussion and debate among historians and followers of Indian Space Journey.

~ **Pritam Saha**

India's Achievements in Space

In 1962, India's space program began in a small church building in Kerala with borrowed technology and very limited resources. Today, in 2025, the same nation has touched the Moon's South Pole, studied the Sun, and is preparing to send its first astronauts into space. This extraordinary journey from humble beginnings to global leadership is one of India's greatest success stories.

The credit for planting the seeds of India's space program goes to Dr. Vikram Sarabhai, who believed that advanced technologies must serve the real problems of society. Under his vision, India launched its first satellite, Aryabhata, in 1975. Soon after, the INSAT series of communication satellites transformed broadcasting, weather forecasting, and disaster management. The IRS series gave India the ability to map its land, monitor crops, and manage natural resources with precision. This achievement showed how space technology could directly benefit ordinary citizens. With the foundation laid, India's space program grew rapidly. The PSLV became ISRO's most reliable launch vehicle, even setting a world record in 2017 by launching 104 satellites in one mission. The GSLV MK III (LVM-3) allowed India to launch heavy satellites and prepared the way for future human spaceflight.

India's landmark missions earned global respect. Chandrayaan-1 (2008) discovered water on the moon. The Mars Orbiter Mission (2013) made India the first Asian nation to reach Mars and the only country to succeed on its first attempt. In 2023, Chandrayaan-3 made history by landing near the moon's south pole, a world first, while Aditya-L1 began India's first solar mission.

The journey continues with the upcoming Gaganyaan mission, which will soon send Indian astronauts into space, and plans for a national space station by 2035.

India's achievements in space are not just about technology but also about pride, vision, and determination. From Aryabhatta to Chandrayaan-3, the story of India's space program proves that the sky is no longer the limit—India's destiny lies among the stars.

~ Md Arsalan

India's Achievements in Space

India's space program, driven by the Indian Space Research Organization (ISRO), has grown from a modest beginning to become a global leader renowned for innovation, cost-effectiveness, and self-reliance. Under the visionary leadership of its founder, Dr. Vikram Sarabhai, the program focused on using space technology for national development and has since made remarkable achievements that benefit not only India, but the global space community. From launching its first satellite to pioneering lunar and interplanetary missions, ISRO has cemented India's status as a 'pioneer spacefaring nation'.

ISRO's deep space missions have earned India international acclaim. *Chandrayaan-1 (2008): India's first mission to the Moon successfully entered lunar orbit and deployed the Moon Impact Probe. Its most significant discovery was the confirmation of water molecules on the lunar surface, a finding with immense implications for future lunar habitation and exploration.

* Chandrayaan-3: Building on the lessons of its predecessor, this mission achieved a historic soft landing near the Moon's unexplored south pole. This monumental achievement made India the first country to soft-land on the Moon and the first to do so in the south polar region, which is believed to harbor water ice in permanently shadowed craters.

~ Manpreet Singh

India's Achievements in Space

India's journey in space is a celebrated saga of vision & determination. However, the last decade under the dynamic leadership of Prime Minister Narendra Modi has marked a transformative period, characterized by accelerated ambition, global prestige, and a belief in India's destiny as a firm leading space power. This program has not only built upon the strong foundation laid by pioneers like Dr. Vikram Sarabhai but has infused the program with a new, even more, energy, aligning it with the nation's aspirations for a developed India or 'Viksit Bharat',

Looking ahead, the mission set forth by the Prime Minister is ambitious. The Gaganyaan Mission India's first human spaceflight program, is a cornerstone of this new chapter. It is a project that embodies national confidence, aiming to send Indian astronauts, or 'Gaganauts', into space using our own technology. The announcement of plans for an Indian Space Station by 2035 & a mission to Venus (Shukrayaan) underscores a long-term vision that refuses to think small. In conclusion, the period under P.M Narendra Modi's leadership has been a golden age for India's space program. It is an era defined by bold targets, strategic openness, and a masterful blend of scientific pursuit with nationalistic pride. By championing ISRO's Scientists & fostering an ecosystem of Innovation, the government has ensured that India's space saga is no longer just about keeping pace, but about the aim for the stars. The leadership has provided the rocket fuel of political will ensuring that Indian's space ambitions are firmly on course to shape the future of exploration & secure the nation's place as a global leader.

~ Kazi MD Samim Faraj

India's Achievements in Space

Introduction

India's space journey is one of courage, vision, and determination. From carrying rocket parts on bicycles in the 1960s to becoming the first nation to land on the Moon's south pole in 2023, India has shown the world that dreams backed by hard work can reach beyond the skies. This remarkable journey has been led by the Indian Space Research Organisation (ISRO), which today stands as a symbol of national pride and scientific excellence.

Major Achievements

1. Early Beginnings

1962: India's space program was founded under Dr. Vikram Sarabhai.

1975: Launch of Aryabhata, India's first satellite.

1980: SLV-3 successfully placed the Rohini satellite in orbit—marking India's entry into space exploration.

2. Satellite Contributions

INSAT series: Revolutionized telecommunication, television, and weather forecasting.

IRS series: Helped in agriculture, resource mapping, and disaster management.

These satellites directly improved people's daily lives.

3. Launch Vehicles

PSLV (Polar Satellite Launch Vehicle): Known worldwide for accuracy and low cost.

GSLV (Geosynchronous Satellite Launch Vehicle): Built to carry heavier and more complex satellites.

PSLV became ISRO's "workhorse," trusted by many countries.

4. Lunar Missions

Chandrayaan-1 (2008): Discovered water molecules on the Moon.

Chandrayaan-2 (2019): Orbiter still providing valuable scientific data.

Chandrayaan-3 (2023): Created history—India became the first country to land near the Moon's south pole.

5. Mars Mission

Mangalyaan (2014):

First Asian country to reach Mars.

Achieved success in the very first attempt.

World's most cost-effective Mars mission, admired globally.

6. Other Notable Missions

Astrosat: India's first space observatory.

Aditya-L1 (2023): India's first mission to study the Sun.

Foreign satellite launches: ISRO has launched satellites for many countries, proving its global importance.

7. **Future Goals**

Gaganyaan Mission: India's first human spaceflight program.

Planned missions to Venus and further deep-space exploration.

Why India's Space Program is Special

Achieves world-class results at very low costs.

Builds strong global reputation for innovation and reliability.

Contributes directly to national development in communication, weather, agriculture, and disaster management.

Inspires millions of young Indians to dream big and pursue science.

Conclusion

From the modest launch of Aryabhata to the historic success of Chandrayaan-3, India's journey in space is a story of vision, dedication, and resilience. Each mission reflects not only technological progress but also the indomitable spirit of a nation determined to rise. As India prepares for human spaceflight and interplanetary missions, the message is clear—the sky is not the limit; it is just the beginning.

~ Jeet Paul

India's Achievements in Space

India's journey in space is a remarkable story of determination, innovation and progress. From a modest beginning in bullock carts, India has today become one of the leading space powers of the world. Under the leadership of Indian Space Research Organization (ISRO), India has made groundbreaking achievements that inspire not only its own citizens but also the global community.

India's space journey began in 1962, when INCOSPAR (Indian National Committee for Space Research) was formed by Dr. Vikram Sarabhai, who is regarded as the father of the Indian space programme. India launched its first satellite in 1975 and named it as Aryabhata, marking the beginning of its entry into space. India developed its own launch vehicles, including SLV (Satellite Launch Vehicle), ASLV (Augmented Satellite Launch Vehicle) and later made much more powerful PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle). These launch vehicles allowed India to place satellites into orbit without depending on other countries.

ISRO's work has always been closely tied to National development. Satellites launched by India have supported telecommunication, weather forecasting, disaster management, navigation, agriculture, and education. The INSAT and GSAT have connected even the remotest villages of the country. The NavIC provided India with its own navigation capability, reducing dependence on GPS. These advancements show how space technology directly benefits the common man.

India's achievements are not limited to Earth's orbit. With Chandrayaan-1's mission in 2008, India became one of the few nations to send a spacecraft to the Moon. In 2013, India created history with the launch of the Mars Orbiter Mission (Mangalyaan). India became the first Asian country to reach Mars orbit and the first nation in the world to succeed on its maiden attempt.

India reached another milestone in 2023 with Chandrayaan-3, which made a successful soft landing near the moon's south pole. This made India the first country to land in an unexplored region and the fourth nation in the world to achieve a soft lunar landing.

ISRO is now aiming for even greater heights. The Gaganyaan mission will be India's first human spaceflight program, which is aiming to send Indian astronauts into space. Another project, Aditya-L1 is focused on studying the Sun.

India's achievements in space are a matter of immense pride. India's space journey reflects a nation's spirit of resilience and innovation. With upcoming missions like Gaganyaan and Aditya-L1, India is not only exploring space but also becoming a brighter and more advanced future for generations to come.

~ Imtiyaz Sarkar

Dr. Vikram Sarabhai

Introduction :-

Dr. Vikram Ambalal Sarabhai, often hailed as the "Father of the Indian Space Program," was a visionary physicist, institution builder, and pioneer whose contributions laid the foundation for India's foray into space exploration. Born on August 12, 1919, in Ahmedabad, Gujarat, Sarabhai came from a prominent family of industrialists and freedom fighters. His father, Ambalal Sarabhai, was a wealthy textile magnate and philanthropist, while his mother, Saraladevi, was a scholar and social reformer. From a young age, Vikram was exposed to progressive ideas, scientific inquiry, and the spirit of nationalism, which profoundly shaped his life's work. Sarabhai's legacy endures through the Indian Space Research Organisation (ISRO), which continues to propel India into the global arena of space achievements.

Early Life and Education :-

Vikram Sarabhai's journey into science began in the intellectually stimulating environment of his family home, which was a hub for India's independence movement. Visitors like Mahatma Gandhi and Rabindranath Tagore influenced the young Sarabhai, instilling in him a sense of social responsibility intertwined with scientific pursuit. He completed his early education at Gujarat College in Ahmedabad and the Government Institute of Science, where he developed a keen interest in physics.

In 1939, Sarabhai traveled to England to study at St. John's College, Cambridge University. However, World War II interrupted his studies, forcing him to return to India in 1940. Undeterred, he joined the Indian Institute of Science (IISc) in Bangalore under the guidance of the eminent physicist C.V. Raman. During this period, Sarabhai conducted pioneering research on cosmic rays—high-energy particles from outer space—which became a lifelong passion. In 1945, he returned to Cambridge to complete his PhD, submitting a thesis on cosmic ray intensity variations. His doctoral work, published in prestigious journals, established him as a promising scientist in the international community.

Post-independence, Sarabhai's vision extended beyond academia. In 1947, at the age of 28, he founded the Physical Research Laboratory (PRL) in Ahmedabad, India's first research institution dedicated to space and atmospheric sciences. PRL became a nurturing ground for young scientists and symbolized Sarabhai's commitment to building indigenous scientific capabilities in a newly independent nation grappling with resource constraints.

Pioneering the Indian Space Program :-

The 1950s and 1960s marked Sarabhai's most transformative contributions. Recognizing the potential of space technology for national development—such as telecommunications, meteorology, and education—he advocated for a space program tailored to India's needs rather than mere prestige. In 1962, he established the Indian National Committee for Space Research (INCOSPAR), which evolved into ISRO in 1969 under his leadership.

One of Sarabhai's boldest initiatives was the creation of the Thumba Equatorial Rocket Launching Station (TERLS) in Thiruvananthapuram, Kerala, in 1963. The site was chosen for its proximity to the magnetic equator, ideal for studying cosmic rays and ionospheric phenomena. Legend has it that the first rocket was transported on a bicycle and launched from a church-turned-control-room, underscoring the humble beginnings of India's space endeavors. Under Sarabhai's guidance, India successfully launched its first sounding rocket, Nike-Apache, in 1963, marking the nation's entry into the space age.

Sarabhai was instrumental in forging international collaborations. He secured support from NASA, which provided rockets and training, while emphasizing self-reliance. His philosophy was encapsulated in his famous quote: "We do not have the fantasy of competing with the economically advanced nations in the exploration of the Moon or the planets or manned space-flight. But we are convinced that if we are to play a meaningful role nationally, and in the community of nations, we must be second to none in the application of advanced technologies to the real problems of man and society."

Beyond rocketry, Sarabhai envisioned satellites as tools for socio-economic progress. He spearheaded the development of India's first satellite, Aryabhata, launched in 1975 (posthumously, but based on his blueprints). He also founded key institutions like the Space Applications Centre (SAC) in Ahmedabad and the Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram, which remain pillars of ISRO today.

Broader Contributions and Legacy :-

Sarabhai's influence transcended space science. A multifaceted leader, he established the Ahmedabad Textile Industry's Research Association (ATIRA) in 1949 to modernize India's textile sector through scientific methods. He also promoted community science education by founding the Community Science Centre in Ahmedabad, now known as the Vikram A. Sarabhai Community Science Centre, aimed at making science accessible to underprivileged children.

As chairman of the Atomic Energy Commission and a member of the Planning Commission, Sarabhai bridged science with policy, advocating for technology-driven development. His wife, Mrinalini Sarabhai, a renowned dancer, and their daughter, Mallika, carried forward his cultural and social ethos.

Tragically, Sarabhai passed away on December 20, 1971, at the young age of 52, due to a cardiac arrest while in Kovalam, Kerala. His untimely death left a void, but his institutions and ideas endured. Today, ISRO's successes—from the Mars Orbiter Mission (Mangalyaan) to Chandrayaan-3's lunar landing—owe their roots to Sarabhai's foresight.

Conclusion :-

Dr. Vikram Sarabhai was more than a scientist; he was a dreamer who transformed India's scientific landscape. In an era of post-colonial challenges, he proved that with vision, perseverance, and collaboration, a developing nation could reach for the stars. His emphasis on "space for development" continues to inspire ISRO's mission to harness technology for societal good. As India stands on the cusp of further cosmic explorations, Sarabhai's legacy reminds us that true progress lies in applying knowledge to uplift humanity. In the words of his contemporaries, he was "a man who looked at the stars not with awe, but with the intent to understand and utilize them for the betterment of mankind.

~ Diptendu Mukhopadhyay

Essay on India's achievements in space

Essay means a way of writing on a particular subject and the writer presents his ideas, arguments or reflections on that. Then—

India ne space ke field mein jo progress kiya hai, wo ek soch mein padne wali baat hai. Ek time tha jab humare paas limited resources the lekin aaj India duniya ke top space nations mein count hota hai. Yeh sab possible hua hai ISRO ki hard work aur dedication ki wajah se.

1975 mein humne apna pehla satellite Aryabhatta launch kiya tha. Uske baad humne apne rockets banaye jaise PSLV aur GSLV, jinke through communication, weather, aur navigation ke satellites launch hue. Yeh satellites directly logon ke daily life mein kaam aati hain, jaise TV, internet, aur even weather forecast.

Sabse proud moment 2013 mein ek tha Mangalayan mission 2013. India pehla Asian country bana jo Mars tak pahuncha aur woh bhi first koshish mein. Aur cost bhi kam (minimum) tha ki duniya heran ho gayi. Phir apna Chandrayaan mission. Sabse recent Chandrayaan-3 2023 mein South pole of moon pe land hua—aur India ban gaya pehla country jo yeh kar paya. Truly historic moment!

In sab ke peechay ek visionary mind Dr. Vikram Sarabhai ka mind hai. Unhone hi dream dekha tha ki space technology sirf rockets aur planets ke liye nahi, balki India ke development ke liye use honi chahiye. Tab desh naya tha aur paise minimum the tab bhi unhone ISRO establish kiya aur scientists ko inspire kiya.

Aaj ke time mein bhi space journey ek example hai ki vision aur hard work agar India dwara diye jaye to realization to ho hi sakta hai. Mainely mission 2013 logo ke liye ek reality ban chuka hai.

Itni sari achievement me drawbacks bhi hai like—High cost and Budget limitations, Technology gap (jaise ki deep exploration, heavy lifting launchers, and reusable things) me hum peeche hai aur Mission Delays, Brain Drain jaisi alag hi samsya bhi ha.

Lekin,21 drawbacks ke badlav ke baad, technology gap ko dekhkar hum Indians ko space achievements par high amount me proud feel karna hi chahiye.

~ Devprakash Gupta

India's achievements in space

India has made great progress in space science and technology over the last few decades. What started as a small dream with Dr. Vikram Sarabhai has now become one of the world's most inspiring one. Today, India is known as a powerful and reliable country in the field of space and research.

The Indian Space Research Organization (ISRO) has played the main role in this journey. In the early years, India faced many challenges like lack of funds and technology but with dedication and vision.The first satellite, Aryabhata, was launched in 1975, this was the beginning of the India's space journey.

In later years, India successfully launched PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle), which became the backbone of Indian space missions. India also developed its own navigation system NavIC and launched several communication and weather satellites.

One of the proudest achievements of India was the Chandrayaan mission. In 2008, Chandrayaan-1 discovered water molecules on the moon. This was a breakthrough in the history of moon exploration. In 2019, Chandrayaan-2 reached near the lunar south pole, though the lander malfunctioned, still the mission became a guide for upcoming missions. Finally in 2023, India made history with Chandrayaan-3, becoming the first country to land near the moon's South Pole. This made the whole world recognize India's strength in space research. Another great success was the Mangalyaan in 2013. India became the first Asian country to reach Mars orbit and the first in the world to do it in the first attempt and that too at very low cost.

India is now working on Gaganyaan, the human spaceflight mission, which will take four Indian astronauts to space.

In conclusion, India's journey in space is a story of vision, hard work, and determination. From humble beginnings to becoming a global leader, India has shown that with strong willpower and courage.

~ Deep Saha

DR. VIKRAM SARABHAI – A VISIONARY ARCHITECT OF MODERN INDIA

"We must be second to none in the application of advanced technologies to the real problems of man and society." - Dr. Vikram Sarabhai

Dr. Vikram Sarabhai, universally hailed as the "Father of the Indian Space Programme," was far more than a brilliant scientist; he was a visionary institution-builder who fundamentally shaped modern India's scientific and technological landscape. His legacy is not just in the rockets and satellites that ISRO launches, but in the very philosophy that guides India's approach to science - using technology as a powerful tool for socio-economic development.

THE GUIDING PHILOSOPHY - Sarabhai's core belief, articulated eloquently, was that for a developing nation like India, there was a dual path to the relevance of space activities. He argued that space technology could solve real-world problems, from mass education and weather forecasting to natural resource management and disaster mitigation. The vision was a radical departure from the Cold-War-era space race, which was driven by geopolitical rivalry. Sarabhai's focus was on a peaceful and application-oriented space research, a philosophy that continues to define ISRO's mission to this day.

INSTITUTION BUILDING AND FOUNDATIONAL ACHIEVEMENTS - Sarabhai's genius lay in his ability to create and nurture world-class institutions. He was instrumental in establishing or helping to build numerous organizations, including:

* The Indian Space Research Organization (ISRO): In 1962, he convinced the government to form the Indian National Committee for Space Research (INCOSPAR), which later evolved into ISRO in 1969, with Sarabhai as its first chairman. This was his single greatest achievement.
* The Thumba Equatorial Rocket Launching Station (TERLS): Recognizing the unique geographical advantage of a fishing village near the geomagnetic equator, he established TERLS in Thiruvananthapuram. The station became the first foothold for India's space rocket launch. In 1963, a small but monumental step that marked the beginning of India's space journey.
* The Physical Research Laboratory (PRL): At the age of just 28, Sarabhai founded the PRL in Ahmedabad, a key research institute for cosmic rays and space physics.
* Indian Institute of Management (IIM): Demonstrating his diverse interests and institution-building capabilities, he was also a key figure in the creation of one of India's premier management schools.

A LEGACY OF SELF-RELIANCE AND PURPOSE - Sarabhai's work laid the groundwork for India's self-reliance in space technology. He initiated the project for the fabrication and launch of India's first satellite, Aryabhata, which was put into orbit in 1975. His dialogue with NASA also led to the Satellite Instructional Television Experiment (SITE), a program that used satellite technology to broadcast educational content to rural villagers, demonstrating his vision in action.

Today, his name is immortalized in institutions like the Vikram Sarabhai Space Centre (VSSC) and the Vikram Lander of the Chandrayaan-2 and Chandrayaan-3 missions. Dr. Vikram Sarabhai's legacy is a powerful reminder that true scientific progress is measured not only by what we can launch into space, but also by how that knowledge and technology are brought back to Earth to empower and uplift a nation.

~ **Bitanu Sahoo**

Father of India's Space Programme

The name of Dr. Vikram Ambalal Sarabhai will forever be remembered in Indian history as the father of India's space programme. He was a scientist, visionary, institution builder, and above all, a patriot, who believed that science and technology should be used to improve the lives of ordinary people. His vision and hard work laid the foundation of what is today one of the most respected space agencies in the world - the Indian Space Research Organization (ISRO).

Early life and Education -

Dr. Sarabhai was born on 12th August 1919 in Ahmedabad. Gujarat to a well-known and progressive family. His parents strongly encouraged education, creativity, and service to society. After schooling in Gujarat, he went to the University of Cambridge in England, where he studied natural sciences. Later, he completed his doctorate in cosmic ray research, which strengthened his interest in space science.

Vision and Contribution -

At a time when India was still a newly independent nation facing poverty, unemployment, and illiteracy, very few thought that space research was necessary. But Dr. Sarabhai had the courage to dream differently. He believed that satellites and space technology could play an important role in solving India's problems. According to him, space research should not be done for prestige alone but a practical benefit like communication, weather prediction, education, disaster management, and agriculture.

With this vision, he was instrumental in setting up the Indian National Committee for Space Research (INCOSPAR) in 1962. which later became ISRO. Under his guidance, India launched its first sounding rocket from Thumba in Kerala in 1963. He also initiated the country's first satellite project, which finally resulted in the launch of Aryabhata, India's first satellite, in 1975- just a few years after his passing.

Institution Building -

Dr. Sarabhai was not only a scientist but also a great institution builder. He established the Physical Research Laboratory (PRL) in Ahmedabad, which became the cradle of space science in India. He also played a key role in founding the Indian Institute of Management, Ahmedabad (IIMA), which today stands among the world's leading management schools. He was involved in setting up institutions like the Space Applications Centre and the Community Science Centre, showing his deep commitment to education, research, and national development.

Legacy and Inspiration -

Unfortunately, Dr. Vikram Sarabhai's life was cut short when he passed away suddenly on 30th December 1971 at the age of only 52. However, his legacy continues to live on through ISRO's extraordinary achievements. From the successful Chandrayaan missions to the Mangalyaan (Mars Orbiter Mission) and from satellite launches to future plans of human spaceflight, every milestone of ISRO reflects his vision and determination.

Conclusion -

Dr. Vikram Sarabhai is rightly honored as the Father of India's Space Programme. He dared to dream at a time when India lacked resources but had immense potential. His foresight turned India into a Space power, admired by the whole world today. More than just a scientist, he was a nation builder, who believed in using knowledge for the welfare of society. His life continues to inspire students, scientists, and all Indians to dream big and work hard for the progress of the country.

~ Baibhav Kumar Jha

Dr.Vikram Sarabhai Father of India's Space

Introduction :-

Dr. Vikram Ambalal Sarabhai, often hailed as the "Father of the Indian Space Program," was a visionary physicist, institution builder, and pioneer whose contributions laid the foundation for India's foray into space exploration. Born on August 12, 1919, in Ahmedabad, Gujarat, Sarabhai came from a prominent family of industrialists and freedom fighters. His father, Ambalal Sarabhai, was a wealthy textile magnate and philanthropist, while his mother, Saraladevi, was a scholar and social reformer. From a young age, Vikram was exposed to progressive ideas, scientific inquiry, and the spirit of nationalism, which profoundly shaped his life's work. Sarabhai's legacy endures through the Indian Space Research Organisation (ISRO), which continues to propel India into the global arena of space achievements.

Early Life and Education :-

Vikram Sarabhai's journey into science began in the intellectually stimulating environment of his family home, which was a hub for India's independence movement. Visitors like Mahatma Gandhi and Rabindranath Tagore influenced the young Sarabhai, instilling in him a sense of social responsibility intertwined with scientific pursuit. He completed his early education at Gujarat College in Ahmedabad and the Government Institute of Science, where he developed a keen interest in physics.

In 1939, Sarabhai traveled to England to study at St. John's College, Cambridge University. However, World War II interrupted his studies, forcing him to return to India in 1940. Undeterred, he joined the Indian Institute of Science (IISc) in Bangalore under the guidance of the eminent physicist C.V. Raman. During this period, Sarabhai conducted pioneering research on cosmic rays—high-energy particles from outer space—which became a lifelong passion. In 1945, he returned to Cambridge to complete his PhD, submitting a thesis on cosmic ray intensity variations. His doctoral work, published in prestigious journals, established him as a promising scientist in the international community.

Post-independence, Sarabhai's vision extended beyond academia. In 1947, at the age of 28, he founded the Physical Research Laboratory (PRL) in Ahmedabad, India's first research institution dedicated to space and atmospheric sciences. PRL became a nurturing ground for young scientists and symbolized Sarabhai's commitment to building indigenous scientific capabilities in a newly independent nation grappling with resource constraints.

Pioneering the Indian Space Program :-

The 1950s and 1960s marked Sarabhai's most transformative contributions. Recognizing the potential of space technology for national development—such as telecommunications, meteorology, and education—he advocated for a space program tailored to India's needs rather than mere prestige. In 1962, he established the Indian National Committee for Space Research (INCOSPAR), which evolved into ISRO in 1969 under his leadership.

One of Sarabhai's boldest initiatives was the creation of the Thumba Equatorial Rocket Launching Station (TERLS) in Thiruvananthapuram, Kerala, in 1963. The site was chosen for its proximity to the magnetic equator, ideal for studying cosmic rays and ionospheric phenomena.

Legend has it that the first rocket was transported on a bicycle and launched from a church-turned-control-room, underscoring the humble beginnings of India's space endeavors. Under Sarabhai's guidance, India successfully launched its first sounding rocket, Nike-Apache, in 1963, marking the nation's entry into the space age. Sarabhai was instrumental in forging international collaborations. He secured support from NASA, which provided rockets and training, while emphasizing self- reliance. His philosophy was encapsulated in his famous quote: "We do not have the fantasy of competing with the economically advanced nations in the exploration of the Moon or the planets or manned space-flight. But we are convinced that if we are to play a meaningful role nationally, and in the community of nations, we must be second to none in the application of advanced technologies to the real problems of man and society."

Beyond rocketry, Sarabhai envisioned satellites as tools for socio-economic progress. He spearheaded the development of India's first satellite, Aryabhata, launched in 1975 (posthumously, but based on his blueprints). He also founded key institutions like the Space Applications Centre (SAC) in Ahmedabad and the Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram, which remain pillars of ISRO today.

Broader Contributions and Legacy :-

Sarabhai's influence transcended space science. A multifaceted leader, he established the Ahmedabad Textile Industry's Research Association (ATIRA) in 1949 to modernize India's textile sector through scientific methods. He also promoted community science education by founding the Community Science Centre in Ahmedabad, now known as the Vikram A. Sarabhai Community Science Centre, aimed at making science accessible to underprivileged children.

As chairman of the Atomic Energy Commission and a member of the Planning Commission, Sarabhai bridged science with policy, advocating for technology drivendevelopment. His wife, Mrinalini Sarabhai, a renowned dancer, and their daughter, Mallika, carried forward his cultural and social ethos. Tragically, Sarabhai passed away on December 20, 1971, at the young age of 52, due to a cardiac arrest while in Kovalam, Kerala. His untimely death left a void, but his institutions and ideas endured. Today, ISRO's successes—from the Mars Orbiter Mission (Mangalyaan) to Chandrayaan-3's lunar landing—owe their roots to Sarabhai's foresight.

Conclusion :-

Dr. Vikram Sarabhai was more than a scientist; he was a dreamer who transformed India's scientific landscape. In an era of post-colonial challenges, he proved that with vision, perseverance, and collaboration, a developing nation could reach for the stars. His emphasis on "space for development" continues to inspire ISRO's mission to harness technology for societal good. As India stands on the cusp of further cosmic explorations, Sarabhai's legacy reminds us that true progress lies in applying knowledge to uplift humanity. In the words of his contemporaries, he was "a man who looked at the stars not with awe, but with the intent to understand and utilize them for the betterment of mankind.

~ Baibhab Ghosh

India's achievements in space

For decades, space exploration has seemed like a two-player game. The United States and the Soviet Union locked in a battle for dominance beyond Earth. But the landscape has shifted. New players have entered the race, quietly building momentum, challenging the old giants. India has been the underdog on the rise.

Dr Vikram Sarabhai is considered to be the father of Indian Space Programme. He had a vision of making India venture into space and play a creative role in developing technologies. Since the 1980s, India had managed to make a mark by developing its own satellite. In 1962, INCOSPAR was established and with it the Indian space programme began establishing itself with the launch of sounding rockets, which was complemented by India's geographical proximity to the equator. Thumba Equatorial Rocket Launching Station (TERLS) was built near Thiruvananthpuram in Kerala for this purpose. Subsequently, India developed indigeneous technology of sounding rocket called Rohini family of sounding rockets.

The Indian Rohini programme continued to launch sounding rockets of greater size and complexity, and the space programme was expanded and eventually given its own government department, separate from the Department of Atomic Energy. On August 15th 1969 the Indian Space Research Organisation (ISRO) was created from the INCOSPAR programme under the DAE, continued under the Space Commission and finally the Department of Space, created in June of 1972.

Recognizing the advanced capability India had in building solid motors with the Rohini series, and that other nations had favoured solid rockets for similar projects, the ISRO set about building the technology and infrastructure for the Satellite Launch Vehicle (SLV). Inspired by the American Scout rocket, the vehicle would be a four-stage all-solid vehicle. India began developing satellite technology anticipating the remote sensing and communication needs of the future. India concentrated more on practical missions, directly beneficial to people instead of manned space programs or robotic space explorations. The Aryabhata satellite, launched in 1975 from Kapustin Yar using a Soviet Cosmos-3M launch vehicle, was India's first satellite.

It was not until 1992 that the first successful launch of the ASLV took place. At this point the launch vehicle, which could only put very small payloads into orbit, had achieved its objective. In 1993 the time had come for the maiden flight of the PSLV. The first launch was a failure. The first successful launch took place in 1994 and since then the PSLV has become the workhorse launch vehicle – placing both remote sensing and communications satellites into orbit, creating the largest cluster in the world. India's first satellite, Aryabhata (1975), signaled the country's foray into space exploration.

PSLV Achievement : Launching multiple satellites for India and other nations for a fraction of the cost of other countries, the Polar Satellite Launch Vehicle (PSLV) has established itself as a dependable workhorse. Chandrayaan Trips : Water on the Moon was proven by Chandrayaan-1 (2008), and India became the first country to settle close to the lunar south pole with Chandrayaan-3 (2023).

According to Mangalyaan (2014), India became the first nation in Asia and the first in the world to enter Mars orbit on its first try with its Mars Orbiter Mission (MOM).

The regional satellite navigation system operated by NAVIC India offers precise location services that improve disaster relief and national security. The ISRO has gone from strength to strength and their ambition is showing no signs of wavering. This year, India's crude space program will begin its first launches with the first Indian astronauts being launched on Indian rockets hopefully coming in 2026 with further plans to launch their own permanently crewed space station. All this starting with some ambitious engineers transporting rocket parts with bikes using the tools at their disposal to improve the lives of their fellow Indians. It's easy to take education for granted. Having cheap educational resources available at a young age is one of the biggest legs up in life you can have. When you look at the story of the ISRO, it's not just a story of engineering. It's a story of education, of resourcefulness, and of people using whatever tools they had to chase something bigger.

~ Arnab paul

Father of India's Space Programme & Father of Indian Space Revolution

Vikram Ambalal Sarabhai was one of the greatest scientists of India. He is widely regarded as the father of the Indian space programme and father of Indian space revolution. He was a rare combination of a scientist, an innovator, industrialist and a visionary.

Vikram Sarabhai was born on August 12, 1919 at Ahmedabad in an affluent family of progressive industrialists. He was the eight child of Ambalal and Sarla Devi. He had his early education in a private school, 'Retreat', run by his parents on Montessori lines. After his matriculation, he proceeded to Cambridge for his college education and took the Tripos in Natural Science from St. John's College in 1940. He returned home and joined as a research scholar under C.V. Raman at Indian Institute of Science, Bangalore. His interest in solar physics and cosmic ray led him to set up many observation stations around the country. He built the necessary instruments and took measurements in Bangalore, Kashmir and the Himalayas. He completed his PhD in 1947. Back home, he established Physical Research Laboratory (PRL) in Ahmedabad in November 1947. It got support from the Council of Scientific and Industrial Research (CSIR) and the Department of Atomic Energy.

The research that Vikram Sarabhai did on the time variation of cosmic rays revealed that meteorological effects could not entirely affect the observed daily variations of cosmic rays. Further, the residual variations were wide and global and these were related to variations in solar activity. Vikram Sarabhai visualized a new field of research opening up in solar and interplanetary physics.The year 1957-1958 was designated as International Geo-Physical Year (IGY). The Indian Programme for IGY was one of the most significant ventures of Sarabhai. This gave him new vistas of space science with the launching of Sputnik-1 in 1957. Then in 1962, Vikram Sarabhai founded Indian National Committee for Space Research under the Department of Atomic Energy (DAE). On 29 August 1969 (INCOSPAR) was renamed as Indian Space Research Organization (ISRO). In the year 1962 he set up the Thumba Equatorial Rocket Launching Station (TERLS), the first rocket launching centre in the country. The first rocket with sodium vapour payload was launched on November 21, 1963. In 1965, the UN General Assembly gave recognition to (TERLS) as an international facility.

In May 1966, he became the chairman of Atomic Commission in science. He always believed that the practical application of science should reach the common man. He worked towards acquiring competence in advance technology for the solution of country's problems based on technical and economical evaluation of its real resources. He initiated India's space programme, which today is renowned all over the world.

Dr. Vikram Sarabhai received the Shanti Swarup Bhatnagar Medal in 1962. The nation honoured him awarding Padma Bhushan in 1966 and Padma Vibhushan in 1972. Vikram Sarabhai passed away for his sleep on December 31, 1971.

~ Arkadeep Dutta

India's achievements in space

When we hear the word "space," one organization that comes to our minds is the Indian Space Research Organisation (ISRO). ISRO is the pioneer space exploration agency of the Government of India. It was headquartered in Bengaluru. ISRO was set up in 1969 with a mission to develop and harness space technology for national development, while pursuing planetary exploration and space science research.

Before coming to ISRO and its achievements, let us first take a step back to understand the history of Indian space research. The space research activities were initiated in India in the early 1960s, when research using satellites for experimental stages even in the United States, such as the live transmission of Tokyo Olympic games across the Pacific by the American satellite "Syncom-3," demonstrated the power of communication satellites. Dr. Vikram Sarabhai, the founding father of the Indian space program, quickly recognized the benefit of space technology for India.

Dr. Sarabhai was convinced and determined that the resources in space have the potential to address the real problems of society. At his request, Dr. Sarabhai, with the help of the scientist Dr. Homi Bhabha, who was the father of India's atomic program, established the Indian National Committee for Space Research (INCOSPAR). He also founded the Physical Research Laboratory (PRL) located in Ahmedabad.

INCOSPAR, with Dr. Sarabhai as chairman, was established in 1962. The Indian Rohini program continued to launch sounding rockets of greater size and complexity, and the space program was expanded and eventually given its own government department separate from the Department of Atomic Energy. On August 15, 1969, the ISRO was created from the INCOSPAR program under the DAE and eventually under the Space Commission, and finally the Department of Space was created in June 1972.

In 2018, ISRO launched its 100th satellite along with 30 others in a single mission on January 12, 2018, from Sriharikota Spaceport in Andhra Pradesh. This is a big achievement, including weather observation INSAT-3DR and two micro satellites that were launched by PSLV-C40. Out of the 31 satellites, 28 were foreign, while three were from India.

ISRO's latest missions like GSLV MK-III / GEAT-19 Mission, GSLV-F10 / GISAT1 Mission, and GSLV-F11 / GEAT-29 Mission, and PSLV-C43 / HySIS Mission are all successful. The Chandrayaan-2 mission, planned for January 2019, undoubtedly shows once again India's prowess in the field of space technology.

On January 1, 2019, ISRO launched "Samwad with students" on New Year's Day. We hope that under the leadership of Dr. K. Sivan, ISRO will be successful in all its upcoming missions and shall make many more proud moments for us.

~ Anuska Shaw

India's achievements in space

India's journey in space exploration is one of vision and determination. Its remarkable achievements, against all odds, have made the Indian Space Research Organisation (ISRO), founded by the visionary scientist Dr. Vikram Sarabhai in 1969, into a global leader. It's an inspiring journey from 1975 to today, from the first satellite launch to human and Mars missions. India's accomplishments have not only created national pride but also advanced global space research.

India's journey began with the launch of Aryabhata in 1975, marking its entry into space research. The development of the Satellite Launch Vehicle (SLV-3) in 1980 established India as a country capable of orbital launches. ISRO's commitment to self-reliance grew with subsequent rocket families such as PSLV and GSLV, empowering India to launch diverse satellites for domestic and international clients.

* Chandrayaan-1 (2008) confirmed the presence of water molecules on the moon, shifting scientific paradigms and earning global recognition.

* In 2019, ISRO attempted Chandrayaan-2, aiming for a soft landing on the Moon's south pole. Although the lander couldn't land successfully, the mission's orbiter continues to send valuable data, building on this. In 2023, Chandrayaan-3 achieved what no other country had done before—landing safely near the lunar south pole. With this, India became the fourth country in the world to successfully land on the moon and the first to explore this unexplored region.

* Mangalyaan (Mars Orbiter Mission) in 2014, made India the first Asian nation to reach Mars orbit and the only nation to do so successfully on the first attempt.

* Aditya-L1 in 2023, India's first dedicated solar mission, investigates the Sun's outermost layer, promising advances in heliophysics.

India's commercial arm, NSIL, has launched more than 300 foreign satellites, showcasing its competitive expertise in low-cost, reliable launches. The upcoming NISAR mission, a collaboration with NASA, represents India's increasing involvement in global earth observation projects.

India's achievements in space reflect not only scientific excellence but an enduring commitment to innovation, self-reliance, and humanity's progress. As the nation moves towards more ambitious planetary and human exploration missions, its legacy inspires new generations and challenges the global space science. The nation's achievements in space are not just about science and technology, but also about national pride, global respect, and a brighter future for humanity.

~ Anushna Patra

SPACE REVOLUTION DAY ESSAY

We often refer to our expanding universe with one simple word: Space. However do we actually ponder upon what aexactly is space and where does it begin?

Space has very little pressure and is almost completely devoid of matter. Sound cannot travel through space because molecules are too far apart to allow sound to travel between them. Planets, stars, and galaxies can be found in the more crowded portions of the cosmos, whereas pieces of dust, gas and other matter can be found floating about in the more emptier locations.

The prevalent view of outer space from Earth is that it starts at the Kármán line, which is roughly 62 miles (100) km above sea level. This is a hypothetical barrier at a height where there isn't much air to breathe or light to scatter, as there isn't enough oxygen molecules in the atmosphere to keep the sky blue. Above this altitude, hence blue begins to gradually lose its colour to black as we move higher away from the Earth.

We don't know how big space is as it is beyond our detection powers. That is why we use "light-years" which is a unit of about 5.8 trillion miles (9.3 trillion Kilometers), to measure distances in space. Galaxies dating as far back as the Big Bang, which marked the start of our Universe 13.8 billion years ago, have been mapped by our telescopes. However, to find the exact size of space is extremely challenging due to its vast expansion. The possibility that space may be far larger than we realize is another reason why astronomers are unsure if our universe is the only one.

India's journey into space has been truly incredible. It all began with the vision of Dr. Vikram Sarabhai, who is often called the father of the Indian Space Programme. His dream led to the creation of the Indian Space Research Organisation (ISRO), which was founded with the goal of using space technology for the benefit and advancement of the country. ISRO's story started in the early 1960s with the Indian National Committee for Space Research (INCOSPAR). They had very little money and resources, but their main goal was to improve India's scientific and research abilities.

From a simple start like India's launching its very first rocket from a small fishing village in Kerala in 1963, India's physicists, astronomers and youth's alike have always shown amazing determination. This ability to innovate, create and succeed at such low costs has allowed India to accomplish a great deal more in space compared to many other countries, again proving the statement that if we Indians put our mind onto something, there is nothing we can't achieve. With recent successful missions like the Chandrayaan-3 and and every day mission in Ladakh, new projects like the Mars and Moon analogue. India's space programme is improving and to discovering something new each and every day as it explores into new and exciting areas. As India continues to grow its space capabilities, it's also becoming a major player and is back

holding a strong place internationally. It is increasing its international partnerships and research simulations solidifying its place on the global stage while staying true to its original purpose of helping people. Starting with its first satellite, Aryabhata in 1975, and a fully indigenous launch in 1980, India steadily built its capabilities. The key milestones include the landmark Mars Orbiter Mission (Mangalyaan) in 2014, which made India the first country to reach Mars' orbit in its debut attempt, and the Chandrayaan-3 mission in 2023, which achieved a historic soft landing on Moon's South pole. This feat made India the first nation to land in the unexplored South Pole region of the moon. The country has also developed a family of reliable launch vehicles like the PSLV and LVM3 (previously GSLV-MK-III) which have successfully launched numerous national and international satellites for communication, Earth observation, and scientific research. Looking ahead, India is now focused on its Gaganyaan human spaceflight program, aiming to send astronauts into space and further solidify its position as a major player in space exploration.

All of this was just a tiny part of India's achievements in the section of space. The continuous determination and efforts of India's physicists, mathematicians, scientists, youth and everyone involved has taken India to great heights and will continue to do so in the future proving the fact that we Indians can achieve anything and everything.I would specifically like to thank ISRO's former chairman Dr. K. Sivan and current Chairman Dr. S. Somnath for making India proud and helping it to stand headstrong among all the other countries for its achievements in space and also our honourable Prime Minister Shri Narendra Modi Ji, under whose government has significantly helped shape India's space program by shifting its focus from a government-led monopoly to a more inclusive, open ecosystem that encourages private sector participation and international collaboration. This strategic change is seen as a major catalyst for the country's recent space achievements. I am sure in the near future India will reach an untouchable position. I am and will always be proud to be an Indian Citizen. Jai Hind.

~ Anusha Mitra

Dr. Vikram Sarabhai – Father of India's Space Programme and Father of Indian Space Revolution

India's rise as a global leader in space technology is a story of vision, courage, and determination.

At the heart of this inspiring journey stands Dr. Vikram Ambalal Sarabhai, fondly remembered as the Father of India's Space Programme and the Father of the Indian Space Revolution. His vision laid the foundation of what we today celebrate as India's space achievements—from the humble launch of sounding rockets at Thumba to the proud moment of sending Chandrayaan and Mangalyaan to other worlds.

Early Life and Vision Born on 12 August 1919 in Ahmedabad, Gujarat, Dr. Sarabhai was blessed with curiosity and brilliance from an early age. He pursued higher studies in physics at the University of Cambridge and later earned a doctorate in cosmic ray research. His exposure to cutting-edge scientific work abroad inspired him to dream of a similar scientific culture in India. Unlike many who considered space exploration a luxury for a developing nation, Dr. Sarabhai firmly believed that space technology must serve human development. He once said, "We do not have the fantasy of competing with economically advanced nations in the exploration of the moon or the planets or manned spaceflight. But we are convinced that if we are to play a meaningful role nationally, and in the community of nations, we must be second to none in the application of advanced technologies to the real problems of man and society." This philosophy continues to guide the Indian Space Research Organisation (ISRO) even today.

Foundation of ISRO and India's Space Programme In 1962, Dr. Sarabhai helped establish the Indian National Committee for Space Research (INCOSPAR), which later evolved into ISRO (Indian Space Research Organisation). With limited resources but unlimited determination, he and his team transformed a small church building in Thumba, Kerala, into a rocket launching station. His vision was not limited to rockets and satellites. He foresaw how television, weather forecasting, education, and remote sensing could transform India's villages and empower ordinary citizens. Under his leadership, India launched its first satellite, Aryabhata, in 1975 (though Sarabhai passed away before witnessing it, the project was his brainchild).

Father of Indian Space Revolution Dr. Sarabhai's approach was revolutionary because he connected science with social progress. He realized that satellites could bring education to remote corners of the country through television programs, monitor natural resources, and help in disaster management. His pioneering work in space-based communication and remote sensing set India apart from many other developing nations.

It was his conviction that space science should not remain confined to laboratories but must touch the lives of farmers, students, fishermen, and common citizens. This people-centric vision earned him the title of the Father of Indian Space Revolution. Legacy and Inspiration Dr. Sarabhai passed away at a young age in 1971, but his legacy lives on. Today, ISRO stands as one of the world's most respected space agencies—known for its cost-effective missions, precision, and innovation. From Chandrayaan-3's successful landing on the Moon to Aditya-L1's solar

mission, every success is a tribute to his vision. Hon'ble Prime Minister Shri Narendra Modi Ji has often emphasized self-reliance in science and technology under the banner of Aatmanirbhar Bharat. This echoes Dr. Sarabhai's own dream of an India that uses science to uplift society and contribute globally. The celebration of Space Revolution Day 2025, on the Prime Minister's birth anniversary, is therefore a fitting tribute to both leaders—one who laid the foundation, and one who continues to strengthen India's journey to the stars.

Conclusion Dr. Vikram Sarabhai was not just a scientist but a visionary who believed that space was not about distance from Earth but about bringing development closer to people. He gave India the courage to dream big and the tools to achieve those dreams. As we celebrate Space Revolution Day 2025, we honor his memory and reaffirm our commitment to using space technology for peace, progress, and the prosperity of humanity.

Indeed, Dr. Sarabhai's life reminds us that with vision, dedication, and service to society, even the sky is not the limit—it is just the beginning.

~ Ankit Raj

Father of Indian Space Program and Father of the Indian Space Revolution

Most people think space programmes begin with giant rockets and billion-dollar labs. Ours began on a quiet beach in Kerala. Ours began in the year 1960. Rocket parts were carried on bicycles and an old church was used as their control room at Thumba. Leading them was Dr. Vikram Sarabhai, who planted the first seed of India's space dream.

Sarabhai believed space was about helping, not prestige or education. He wanted satellites to bring education to remote villages, predict monsoons for farmers and improve communication across India. In 1962 he created INCOSPAR, and by 1969 it became ISRO. He planned the first satellite Aryabhatta and set up the Thumba Equatorial Rocket Launching station. While the world raced to the Moon, Sarabhai built a foundation to lift up people back home.

After his death in 1971, a new generation stepped forward. Dr. A.P.J. Abdul Kalam led the team that built India's first satellite launch vehicle, SLV-3, which placed the Rohini Satellite into orbit in 1980. It proved India could launch its own satellites and turned Sarabhai's quiet programme into a growing revolution. Under leaders like Kalam and Satish Dhawan, ISRO developed PSLV and GSLV rockets, mastered cryogenic technology and built advanced satellites for communication and science.

Today, Sarabhai's vision has found strong support in India's leadership. Honorable Prime Minister Shri Narendra Modi has encouraged bold space missions and opened the doors for private companies to participate. In 2014 he watched live Mangalyaan enter Mars orbit and called ISRO Scientists "our Modern Rishis". His government supported Chandrayaan-3, Aditya-L1 and the upcoming Gaganyaan human spaceflight. This is celebrated to honor both India's achievements and our Prime Minister's vision of a self-reliant, globally leading Space nation.

From rockets on bicycles we have reached moon landings, Mars missions and solar observatories.The "father of India's space programme" and the "father of the Indian Space revolution" story are a part of the same. Sarabhai lit the spark; Kalam flamed it to fire and Shri Narendra Modi has given it wings and a wider sky. Our history shows us that great things can start small, sometimes from the beaches of Thumba to stars beyond.

~ Ankana Biswas

Dr. Vikram Sarabhai

Dr. Vikram Sarabhai was an Indian physicist and industrialist, renowned as the "Father of the Indian Space Program." He was born on August 12th, 1919, in Ahmedabad to an affluent family. In early education, he attended a private school. In his home, which his parents ran on Montessori lines, he pursued his undergraduate studies in physics and mathematics at Cambridge University. During World War II, he returned to India and worked on his PhD at the Indian Institute of Science in Bangalore under the guidance of Nobel Laureate Sir C.V. Raman.

He envisioned using space technology for national development and spearheaded the creation of India's space program, leading to the foundation of ISRO in 1969. He founded the Physical Research Laboratory (PRL) in 1947. He also contributed to setting up institutions like the Ahmedabad Textile Industry's Research Association (ATIRA), Operations Research Group (ORG), and the Space Applications Centre (SAC).

In 1966, Dr. Vikram Sarabhai was awarded the Padma Bhushan by the Government of India. He also got the Padma Vibhushan award in 1972. Unfortunately, he died at the age of 52 in Kovalam, Kerala.

He is remembered as a visionary scientist, innovator, and industrialist who laid the foundation for India's advancements in space, atomic energy, and other critical scientific fields.

~ Amit Mukherjee

India's achievements in space

India is a developing nation, but in the field of space science, it has shown the world that determination and vision can overcome limited resources. The Indian Space Research Organisation (ISRO), established in 1969 under the leadership of Dr. Vikram Sarabhai, has played the most important role in this journey. From launching small satellites to reaching the Moon and Mars, India's achievements in space have become a source of pride for the nation.

Early steps: The journey started in 1963 with the first rocket launch from Thumba in Kerala. In those days, even rocket parts were carried on bicycles and bullock carts. In 1975, India launched its first satellite, Aryabhata, with the help of the Soviet Union. Later came the Bhaskara and Rohini satellites, which gave India experience in technology and communication. These were the foundations for future progress.

Development of satellites and rockets: India gradually developed powerful satellite systems such as INSAT for communication, IRS for remote sensing, and NavIC, India's own navigation system. At the same time, India worked on its rockets. The PSLV (Polar Satellite Launch Vehicle) became famous as a highly reliable and cost-effective rocket, while the GSLV and LVM3 enabled India to launch heavier satellites and interplanetary missions. These efforts made India self-reliant in space technology.

Major missions: India's most famous missions have made global headlines.

* Chandrayaan-1 (2008): Discovered water molecules on the moon.
* Mangalyaan (2013): India became the first Asian country to reach Mars and the first in the world to do so on the first attempt.
* Chandrayaan-2 (2019): Though the lander failed, the orbiter is still working.
* Chandrayaan-3 (2023): India became the first country to land near the moon's south pole.
* Aditya-L1 (2023): India's first mission to study the Sun.

These successes have placed India among the leading space powers of the world.

Conclusion: India's achievements in space are a story of courage and innovation. From humble beginnings to landing on the moon and reaching Mars, ISRO has shown the power of science. Its satellites support society, its record launches earn global recognition, and its upcoming human spaceflight and planetary missions promise a bright future.

~ Akash Prasad

India's achievements in space

India's space program, led by the Indian Space Research Organisation (ISRO), has grown from modest beginnings into one of the most successful in the world. With a focus on innovation, low-cost efficiency, and national development, India has achieved milestones that place it among leading space powers. The journey began under Dr. Vikram Sarabhai, who envisioned space technology for social progress. In 1975, India launched its first satellite, becoming the first placed in orbit by an indigenous rocket (SLV-3).

Over the years, India has developed a vast satellite network. The INSAT and GISAT series improved communication and meteorology, while Cartosat and Oceansat supported agriculture, mapping, and disaster management. India also built NavIC, its own regional navigation system. India's launch vehicle technology has seen a major strength. The PSLV is ISRO's workhorse. It has launched hundreds of Indian and foreign satellites with high accuracy, while the powerful GSLV MK III enabled heavy missions. India has excelled in interplanetary missions. Chandrayaan-1 (2008) detected water on the moon, Mangalyaan (2013) reached Mars on its first attempt at a low cost, Chandrayaan-2 (2019) placed a successful orbiter, Chandrayaan-3 (2023) achieved a soft landing near the moon's south pole, and Aditya-L1 (2023) studies the sun.

Future plans include the Gaganyaan mission to send astronauts into space and the development of a space station by 2035. India is also preparing missions to Venus and beyond. In conclusion, India's space achievements reflect its vision, perseverance, and innovative spirit. From Aryabhata to Chandrayaan-3, ISRO has not only advanced national interests but also earned global respect as a pioneer of affordable and reliable space technology.

~ Aditi Upadhyaya

The Significance of Chandrayaan-3

The Chandrayaan-3 mission represents a monumental achievement for India, solidifying its position as a major player in the global space community. Its significance extends beyond a mere technological feat, encompassing a broad spectrum of scientific, geopolitical, and economic impacts. The mission's success in achieving a soft landing on the lunar south pole, an uncharted territory, marks a new era in lunar exploration and showcases India's prowess in executing complex, cost-effective space missions.

Technological Prowess and Scientific Advancement

Chandrayaan-3's primary objective was to demonstrate a safe and soft landing on the lunar surface, a challenge that India's previous Chandrayaan-2 mission had narrowly missed. The successful landing of the Vikram lander and the deployment of the Pragyan rover validated India's end-to-end capability in interplanetary missions. The mission's engineers incorporated significant improvements over its predecessor, including a more robust landing system, enhanced software for navigation and guidance, and strengthened structural integrity to withstand the lunar environment.

The scientific payloads aboard the lander and rover collected invaluable data, providing fresh insights into the Moon's composition and environment. The Laser-Induced Breakdown Spectroscope (LIBS) and the Alpha Particle X-ray Spectrometer (APXS) confirmed the presence of various elements, including sulfur, aluminum, calcium, iron, chromium, titanium, manganese, silicon, and oxygen near the south pole. The discovery is particularly significant as it supports the hypothesis of water ice deposits in the permanently shadowed craters of the region. The Chandra's Surface Thermophysical Experiment (ChaSTE) measured the thermal properties of the lunar surface, while the Instrument for Lunar Seismic Activity (ILSA) recorded seismic events, contributing to a better understanding of the Moon's internal structure.

Geopolitical and Economic Implications

The success of Chandrayaan-3 has had a profound geopolitical impact, elevating India into an elite club of nations- the United States, Russia, and China- that have successfully landed on the Moon. More importantly, India became the first country to achieve a soft landing on the lunar south pole, a region of immense scientific interest due to the potential for water ice. This historic achievement boosts India's global reputation and positions it as a reliable and capable partner in future international space collaborations, such as the Artemis Accords. Economically, the mission serves as a powerful catalyst for India's burgeoning space industry. The low cost of a mission - significantly less than comparable missions by other nations - highlights India's capability for cost-effective space exploration. This "frugal engineering" approach makes India an attractive partner for private space companies and other nations, potentially leading to increased foreign investment and new commercial opportunities. The mission has also inspired a new generation of scientists and engineers, drawing innovation and creating new job opportunities in the space and related technology sectors.

Inspiration for a Nation

Beyond the tangible scientific and economic benefits, the significance of Chandrayaan-3 lies in its power to inspire a nation. The mission's success instilled a sense of immense national pride and showcased the potential of Indian ingenuity and perseverance. It transformed a technological challenge into a moment of collective triumph, demonstrating that with dedication and resilience, even the most ambitious goals are attainable. The success of Chandrayaan-3 is not just a scientific victory but a testament to India's growing ambition and its resolve to be a leader in the next frontier of human exploration.

~ Adarsh Chaubey

Dr. VIKRAM SARABHAI – The Father of the Indian Space Program

India's remarkable journey into space owes its beginning to one man's vision - Dr. Vikram Ambalal Sarabhai, celebrated as the Father of the Indian Space Program. He was not only a scientist of extraordinary intellect but also a dreamer who believed that Science Should Directly Serve People.

Born on August 12, 1919, in Ahmedabad, Gujarat, Sarabhai grew up in a family that valued knowledge and progress. His curiosity led him to Cambridge University, where he earned a doctorate in Cosmic Ray Physics. But more than academic brilliance, what set him apart was his conviction that even a developing nation like India could use Space technology to overcome its challenges.

In the 1960s when India was still building its identity, Sarabhai dared to imagine satellites helping farmers, predict weather, bringing education to remote villages, and connecting people across the country. With this bold vision, he established the Indian National Committee for Space Research (INCOSPAR), which later became ISRO, and set up the Thumba Equatorial Rocket Launching Station, where India's first rockets took flight. Though he passed away before the launch of India's first satellite, Aryabhata in 1975, his vision made it possible.

Sarabhai was more than a Space Scientist; he founded the Physical Research Laboratory (PRL) and played a central role in establishing the Indian Institute of Management, Ahmedabad (IIM-A). His work showed that true nation-building requires both technology and institutions.

He also had an exceptional gift for leadership - nurturing young scientists, empowering them to innovate, and creating an ecosystem where science could thrive. He worked closely with visionaries like Dr. Homi Bhabha and later mentored A.P.J. Abdul Kalam, who went on to become the Missile Man of India and the 11th President of the country. More over, his contributions were not confined to space research alone. Sarabhai actively promoted the use of science in industry, communication, and education. He advocated for the use of television for mass education in 1975-76.

For his extraordinary services, Sarabhai was honored with Padma Bhushan in 1966 and posthumously awarded the Padma Vibhushan in 1972. These awards were not just a recognition of his personal achievements, but symbols of a grateful nation acknowledging the foundation he had laid for its scientific progress.

He once said, "We must be second to none in applying technology to the real problems of man and society." This belief continues to guide ISRO's every milestone, from Chandrayaan to Mangalyaan, and now their ambitious missions to studying the Sun and Venus.

Vikram Sarabhai passed away on December 30, 1971, at only 52. Yet his dreams live on, reminding India to always reach for the stars with purpose and confidence. His life is a testament to the truth that when Vision is coupled with action, even the most distant stars can be within reach.

~ Abhranil Singha Roy

Shining Minds of the Space Age

Meet the three creative thinkers whose essays captured the essence of discovery and innovation.

1st

Ankana Biswas

B. Tech CSE, 2025-2029

2nd

Rishav Pandey

B. Tech CSE, 2025-2029

3rd

Anusha Mitra

B. Tech CSE, 2025-2029

Conclusion

As we bring this special edition of our "Space Evaluation Day Magazine 2025," to a close, we look back with immense pride and gratitude. This publication stands as a reflection of the collective spirit, creativity, and dedication that define our department.

Our heartfelt thanks go to all the visionaries and mentors whose guidance has illuminated every step of this journey. Their encouragement and wisdom have been the true anchors in our cosmic tide.

We extend our sincere appreciation to the editorial team, whose tireless efforts and thoughtful coordination gave this magazine its voice and direction. To the design and media team, who transformed imagination into form and infused every page with life — your artistry has made this endeavor truly shine.

And to all the students who participated, shared their essays, ideas, and perspectives — you are the heart of this celebration. Your words and visions continue to remind us that the future belongs to those who dare to dream beyond boundaries.

Together, we have not just created a magazine — we have built a testament to inspiration, innovation, and unity. May this spirit continue to guide us in every orbit of our academic and creative journey ahead.