

“Science is the poetry of reality.”

Visionary Physicist

-Richard Dawkins

NIGAR SHAJI: LEADING INDIA'S MISSION TO UNRAVEL THE SUN'S ATMOSPHERE



Nigar Shaji stands today as one of India's most distinguished space scientists, her illustrious career at the Indian Space Research Organisation (ISRO) spanning more than three and a half decades. An accomplished aerospace engineer, she has been instrumental in shaping India's satellite and interplanetary programs, embodying the power of intellectual curiosity, perseverance, and a steadfast belief in science. Her journey from small-town beginnings in Sengottai, Tamil Nadu, where she was born Nigar Sultana in 1964, to leading one of India's most ambitious scientific endeavors serves as a resounding testament to what passion and commitment can achieve. This journey culminated in her groundbreaking leadership of the Aditya-L1 mission.

Shaji credits much of her early intellectual formation to her supportive family. Her father, Sheikh Meeran, a mathematics graduate turned farmer, nurtured her fascination with science from a young age. She recalls how he would frequently tell her stories about great scientists, especially Marie Curie, sowing in her a deep interest in physics and mathematics. This homegrown encouragement, coupled with the inspirational legacy of ISRO's founding father, Dr. Vikram Sarabhai, shaped her aspirations. Reflecting on Sarabhai's vision, she noted how in 1969, during a time when India faced immense challenges, he envisioned science as a tool for national development an idea that resonated with her and guided her toward ISRO. Although she excelled academically and had the option to pursue medicine, she chose engineering, becoming a district topper in her 10th standard before earning a Bachelor of Engineering in Electronics and Communication Engineering from the Government College of Engineering, Tirunelveli. She later completed a Master's degree in Electronics from the Birla Institute of Technology, Mesra. Beyond academic credentials, Shaji has authored several research papers on image compression, system engineering, and space internetworking, showcasing her technical depth. In 1987, Shaji joined ISRO, beginning a career that would see her contribute to an array of critical missions. Her early years at the U R Rao Satellite Centre involved hands-on experience in designing and developing remote sensing, communication, and interplanetary satellites. Her capabilities soon propelled her into leadership roles. She served as the Associate Project Director for Resourcesat-2A, an operational remote sensing satellite vital for Earth observation. Today, she serves as the Associate Director of the U R Rao Satellite Centre in Bengaluru, where she helps oversee all ISRO developed spacecraft and leads several future robotic space exploration initiatives, including a proposed mission to Venus. Her appointment as Programme Director for Low Earth Orbit and Planetary Missions further positioned her at the forefront of ISRO's most challenging and visionary projects. However, her most defining achievement remains her leadership as Project Director of Aditya-L1. This mission required placing a satellite into a precise halo orbit around the Sun-Earth Lagrange Point 1, located about 1.5 million kilometers from Earth. From this vantage point, Aditya-L1 observes solar flares, coronal mass ejections, and solar wind behavior to better understand space weather dynamics. The mission demanded not only technical mastery but exceptional coordination and perseverance over eight years of development. Shaji oversaw every phase conceptualization, spacecraft configuration, subsystem design, integration, testing, and launch. After the successful launch, she expressed heartfelt pride, calling it “a dream come true for Team Aditya-L1.” Shaji frequently emphasizes ISRO's unique culture of resilience. She recalls how, after the disappointment of Chandrayaan-2, the organization leaned on teamwork, self-motivation, and continuous learning to achieve the triumph of Chandrayaan-3. This unwavering spirit, she believes, forms the backbone of ISRO's consistent success. Her work has earned national recognition, including the Eve of Excellence Award in 2023 and a joint felicitation with Dr. P. Veeramuthuvel at the Times Now Amazing Indians Awards. For young women aspiring to enter STEM fields, Shaji offers a compelling message: “At ISRO, there is no glass ceiling... talent matters.” She urges them to believe in themselves, claim their space confidently, and “sit at the front” both in classrooms and in life.

PROF. AJAY KUMAR SOOD: A VISIONARY IN INDIAN SCIENCE AND TECHNOLOGY



In a world where the boundaries of science and technology are constantly evolving, few individuals embody the spirit of pioneering research and transformative leadership like Prof. Ajay Kumar Sood. As the appointed Principal Scientific Adviser (PSA) to the Government of India in April 2022, Prof. Sood's career in physics, coupled with his leadership roles in both national and international scientific bodies, positions him as an ideal candidate to guide the country's scientific temper and innovation. Prof. Sood has played a pivotal role in shaping India's scientific landscape, making invaluable contributions to quantum materials, soft matter physics, and the country's overall growth in science and technology for socioeconomic development.

Born in Gwalior on June 26, 1951, Prof. Sood began his academic journey with a B.Sc. and M.Sc. in Physics from Panjab University, Chandigarh. His scientific career took off at the Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, in 1971. Driven by an insatiable curiosity for understanding the laws of nature, he went on to pursue his Ph.D. at the Indian Institute of Science (IISc), Bengaluru, completing it in 1982. His postdoctoral research at the Max Planck Institute, Stuttgart, further sharpened his expertise, after which he returned to India to continue his research and academic leadership at IISc a relationship that has defined much of his professional life. Prof. Sood's name is synonymous with groundbreaking research in graphene, nanotechnology, and quantum materials. His contributions span hard- and soft-condensed matter physics and even touch upon the fascinating interface of physics and biology. Through his innovative experimental techniques, Prof. Sood has expanded our understanding of how materials behave at the atomic and molecular levels insights that continue to influence next-generation technologies in electronics, energy, and materials science. As Principal Scientific Adviser, Prof. Sood serves as the key science and technology advisor to the Prime Minister and the Cabinet, steering the nation's scientific agenda toward global competitiveness and societal well-being. He also chairs the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) a strategic body guiding India's innovation ecosystem. His leadership aims to align national priorities with emerging global research trends, strengthen industry-academia linkages, and promote innovation-driven solutions for national challenges. Before assuming this pivotal national role, Prof. Sood held esteemed positions such as President of the Indian National Science Academy (2017–2019) and the Indian Academy of Sciences (2010–2012). His international influence was equally significant he served as Secretary-General of The World Academy of Sciences (TWAS), Italy (2013–2018), where he championed science as a driver of sustainable development in emerging economies. Prof. Sood's outstanding contributions have earned him many of India's and the world's highest scientific honors, including the Shanti Swarup Bhatnagar Prize (1990), the Padma Shri (2013), the TWAS Prize (2000), and election as a Fellow of the Royal Society (FRS) in 2015. His accolades also include the G.D. Birla Science Award, Sir C.V. Raman Award, and the National Award in Nanoscience and Nanotechnology each underscoring his profound impact on scientific thought and innovation. Beyond awards and titles, Prof. Sood's philosophy on science resonates deeply: “Science has the power to transform society. The challenge for us is not just in making discoveries, but in ensuring those discoveries lead to tangible benefits for humanity.” As India positions itself as a global leader in research and innovation, Prof. Ajay Kumar Sood's guidance ensures that the nation's scientific vision remains rooted in excellence, inclusivity, and purpose. Through his vision and dedication, Prof. Sood continues to light the path for India's scientific future one discovery at a time.

Researchers have been able to visualize the third class of magnetism, called altermagnetism, in action

Ferromagnetism and antiferromagnetism are the two well-known classes of magnetic order in materials. In 2019, researchers at Johannes Gutenberg University Mainz (JGU) proposed a third class called altermagnetism, sparking debate over its existence. Recently, in Feb 2024 Professor Hans-Joachim Elmers and his team at JGU experimentally detected signatures of altermagnetism at DESY (Deutsches Elektronen-Synchrotron). Their results, published in Science Advances, provide the first direct evidence for this new magnetic phase. Unlike ferromagnets, where all magnetic moments align, or antiferromagnets, where moments cancel out, altermagnets have antiparallel neighbouring moments but still produce spin-polarized currents. This unique combination offers zero macroscopic magnetization, like antiferromagnets, yet retains spintronic properties similar to ferromagnets. The discovery opens exciting avenues for next-generation data storage and spintronic devices, bridging the advantages of both magnetic classes. Altermagnetism could thus revolutionize how we manipulate electron spins in future technologies.

Aditya-L1 reaches it Solar Parking Spot

India's first solar observatory, Aditya-L1, successfully entered its final halo orbit around the Sun-Earth Lagrange Point 1 (L1) on 6 January 2024 marking a major milestone for ISRO. Positioned about 1.5 million km from Earth, the spacecraft now enjoys a continuous, unobstructed view of the Sun. This stable “parking spot” allows it to study solar flares, coronal mass ejections, and solar wind dynamics in real time. Over the next few years, Aditya-L1's seven scientific instruments will help scientists better understand how solar activity affects space weather and Earth's magnetosphere. The mission also demonstrates India's growing expertise in deep-space observation and precision orbital operations.

Rare Aurora lights up the Ladakh Skies

In an extraordinary celestial display, the Hanle region of Ladakh witnessed a rare crimson aurora on the night of 10–11 May 2024. Normally visible only at high latitudes near the poles, this aurora appeared at Ladakh's 34°N latitude, thanks to strong solar storms that disturbed Earth's magnetosphere. Scientists attribute the phenomenon to coronal mass ejections from a solar active region earlier that week. The crimson “stable auroral red arc” lit up the northwestern horizon, mesmerizing local residents and astronomers. Hanle's Dark Sky Reserve offered ideal viewing conditions with minimal light pollution. Such events are extremely rare in India, highlighting the dynamic effects of space weather even at lower latitudes. Observers captured stunning photos and videos, which are now making global headlines. Experts say this auroral display provides a unique opportunity to study geomagnetic storms and solar-terrestrial interactions.

Science News Section

Quantum physics makes small leap with microscopic gravity measurement

In a landmark experiment, scientists have detected gravity's pull on a microscopic scale — a key step toward understanding how gravity behaves in the quantum realm. Using a superconducting setup cooled to near absolute zero, researchers levitated a tiny magnetic particle less than a millimeter wide. As brass weights on a rotating bicycle wheel moved nearby, the team recorded a minute gravitational tug of just 30 atto newtons — one-billionth of a billionth of a newton. The work, led by Dr Tim Fuchs at the University of Southampton with colleagues in the Netherlands and Italy, demonstrates gravity between objects far smaller than ever tested before. The experiment, reported in Science Advances, provides a crucial technological foundation for future “quantum-gravity” tests. Physicists hope to extend this work to even tinier masses over the next decade, potentially revealing how Einstein's theory of relativity and quantum mechanics can finally be unified.

ISRO Launches India's First X-Ray Polarimetry Satellite

India began 2024 with a major space-science milestone as ISRO successfully launched the X-Ray Polarimeter Satellite (XPoSat) its first mission of the year from Sriharikota on January 1. The PSLV-C58 rocket, making its 60th flight, carried XPoSat and 10 co-passenger satellites into low Earth orbit. XPoSat will study X-ray polarisation from cosmic sources such as black holes and neutron stars, offering new insights into their extreme environments. The mission marks India's first dedicated effort in space-based X-ray polarimetry, moving beyond imaging and timing studies. Its two main instruments POLIX, built by the Raman Research Institute, and XSPECT, developed at the U R Rao Satellite Centre will operate for about five years. ISRO hailed the mission as a major leap for India's high-energy astrophysics research and a strong start to its 2024 space programme.

IISc Physicists Discover New Formula for Pi While Studying String Theory

In a remarkable theoretical breakthrough, researchers at the Indian Institute of Science (IISc) have uncovered a new series representation for the mathematical constant π (pi) while exploring how string theory explains high-energy particle interactions. The study, led by Prof. Aninda Sinha and Dr. Arnab Saha from IISc's Centre for High Energy Physics, was published in Physical Review Letters. The new formula offers a faster way to compute π from quantum scattering calculations a key tool in theoretical physics. Interestingly, under certain limits, the formula mirrors the one proposed in the 15th century by Indian mathematician Sangamagrama Madhava, the first known series for π . The discovery emerged unexpectedly from efforts to simplify quantum models. IISc says the finding could refine calculations in high-energy physics and, over time, even influence practical applications. For now, it highlights India's growing role in advancing fundamental theoretical physics.

Did you know? Entangled particles remain perfectly correlated with each other even when separated by vast distances, so measuring one instantly affects the state of the other.

Physics Faculty members granted Design Patent

Dr. Neetu Verma and Dr. Surbhi from the P.G. Department of Physics, have received a utility patent (493782, Jan 2024) and a design patent (394343-001, Oct 2023) for their project "System and Method for Automatically Operating Stagnant Water Ejector." This sensor-based system clears stagnant water in three modes, stores it for reuse, and alerts drivers about water depth—an innovative step toward safer, sustainable urban water management.



Career Counseling Session organized for Collegiate School Students

KMV IIC, in collaboration with the P.G. Department of Physics, organized a career counseling session on January 29, 2024. Dr. Neetu Verma, Associate Professor, guided students on self-awareness, career exploration, and goal setting. She also highlighted research opportunities and collaborations with reputed institutions like DRDO, TIFR, and ENEA, Italy. The session was highly informative and appreciated by all, with Principal Prof. (Dr.) Atima Sharma Dwivedi praising Dr. Verma's efforts.



Mentoring Session on Inno-Physics Demonstrations at KMV Innovation Hub

The P.G. Department of Physics, organized a Mentoring Session on Inno-Physics Demonstrations to promote scientific innovation among school students. KMVites demonstrated creative experiments like Newton's Cradle, Air Cannon, Lorentz Oscillator, and Motion on an Inclined Plane for students of Govt. Girls Sr. Sec. School, Goraya, making Physics learning more interactive and fun. Students explored concepts such as energy and momentum conservation, waves, and moment of inertia, and even created their own models. The session inspired participants to think creatively and develop new prototypes.



Bhautik InnoVare-An Experimental Workshop



The P.G. Department of Physics, organized "Bhautik InnoVare – An Experimental Workshop" to acquaint students with advancements in AI and robotics technology. Er. Vishal Sharma, Sr. Research Officer and Chief Mentor of the Innovation Hub at Pushpa Gujral Science City, Kapurthala, served as the resource person. Er. Sharma highlighted the growing influence of AI across diverse fields—healthcare, manufacturing, finance, and entertainment—and encouraged students to stay informed about emerging technologies to become future innovators. The session provided participants with valuable insights into the application of AI and robotics in solving real-world problems.

One day educational trip to Pushpa Gujral Science city, Kapurthala

The P.G. Department of Physics,, in collaboration with KMV IIC, organized a one-day trip to Pushpa Gujral Science City, Kapurthala on February 22, 2024. Nineteen students, accompanied by Dr. Surbhi and Ms. Manisha, explored various galleries including the Earthquake and Flight Simulators, Dome Theatre, 3-D Show, and Climate Change Theatre. They also visited the Space & Aviation Gallery, Fun Science exhibits, Energy Education Park, and Sports Gallery, gaining hands-on exposure to scientific concepts. The trip successfully combined learning, fun, and innovation, inspiring students to explore the role of science and technology in development.



Prof. PK Ahluwalia and Prof. Jaswinder Singh President visited innovation Hub

On April 9, 2024, Prof. P. K. Ahluwalia, President of the Indian Association of Physics Teachers (IAPT), visited the Innovation Hub and explored its state-of-the-art facilities. Accompanied by Dr. Neetu Verma, he interacted with students showcasing innovative projects such as touchless switches, Bluetooth cars, and line-following vehicles, and commended KMV's efforts in promoting a culture of creativity and experiential learning. On April 10, 2024, Prof. Jaswinder Singh, President of IAPT Regional Council (RC02) and a noted innovator, also visited the hub. Impressed by the interdisciplinary collaboration and enthusiasm of students, he praised KMV's commitment to fostering innovation and urged students to pursue ideas that contribute meaningfully to society. Both visits highlighted KMV's dedication to creating an ecosystem where innovation and progressive learning thrive hand in hand.



Celebrations on National Science Day 2024 –Indigenous Technologies for Viksit Bharat



The Department of Science, in collaboration with KMV IIC, celebrated National Science Day on February 27, 2024, to raise awareness of the value of science and its contributions to society. The theme for this year was "Indigenous Technologies for Viksit Bharat." The event began with the lighting of the lamp by distinguished guests — Dr. Rohit Mehra (NIT Jalandhar), Er. Vishal Sharma (Innovation Hub, PG Science City, Kapurthala), and Principal Prof. Atima Sharma Dwivedi, followed by the Science Anthem. Inspiring talks, live demonstrations, and workshops on AI robots and circuit design were conducted. Various departments set up Innovation Stalls showcasing creative models and experiments from Bluetooth cars, resonators, and periscopes (Physics) to mathematical models and Vedic math apps (Mathematics), chemical experiments (Chemistry), bioplastics and DNA extraction (Biotechnology), medicinal herbs and herbal kits (Botany), and a health check-up camp (Zoology) along with poster-making, Rangoli, and cultural performances.

Mentoring program to explore Innovative Experiments for Jullundur Model school at KMV Innovation Hub



To promote scientific innovation among students of Jullundur Model School, the P.G. Department of Physics, Kanya Maha Vidyalaya (Autonomous and Heritage Institution), Jalandhar, organized a mentoring program on 27 February 2024. The session introduced students to innovative projects, technologies, and the facilities of the Innovation Hub a collaborative space for creative exploration and problem-solving. Demonstrations of experiments such as Newton's Cradle, Air Cannon, Lorentz Oscillator, and energy transfer in springs enriched the learning experience. The interactive session sparked students' curiosity, encouraged hands-on learning, and received enthusiastic feedback from both students and teachers, who appreciated KMV's efforts in nurturing innovation and scientific thinking.

KMViets qualified Physics Aptitude Test (PAT)- 2024

KMV College, Jalandhar, proudly announces the outstanding achievement of five of its students in the Physics Aptitude Test 2024, conducted by the Department of Physics, School of Physical Sciences, Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon, in collaboration with Uttamrao Patil College. The successful students Navneet Kaur (B.Sc. Non-Medical, Sem VI), Lovepreet Kaur, Ravinder Kaur, Simran Sharma, and Sakshi (all B.Sc. Computer Science, Sem VI) showcased exceptional knowledge and aptitude, earning distinction among participants from various institutions. Their success highlights both their dedication to academic excellence and the strong scientific foundation provided by KMV College. Principal Prof. (Dr.) Atima Sharma Dwivedi congratulated the achievers, expressing pride in their accomplishment and emphasizing that their success reflects the college's commitment to fostering academic rigor and scientific proficiency.

LEPTON Programme- An offline experimental video based physics quiz

The LEPTON Programme was held at Room No. 59, Department of Physics. The Physics Department at KMV continually provides students with opportunities to enhance their metaskills through practical-based learning, and LEPTON Learning Physics Through Nature is a remarkable example. Organized by the National Anveshika Network of India (NANI) in association with Shiksha Sopan under the leadership of Padma Shri Prof. H.C. Verma, the event engaged 73 students in analyzing and interpreting real-world physics experiments presented through videos. As Punjab's first and only Anveshika Centre, KMV was privileged to host this event on March 13, 2024. Top performers earned eligibility for the online preliminary round of NAEST 2024.



KMV students excel in National Graduate Physics Examination-2023-24

The National Graduate Physics Examination (NGPE) was conducted at KMV to evaluate problem-solving abilities of students in physics and also offers scholarships to encourage careers in the subject. This year more than 14,000 students across the country appeared for the examination held in January 2024. A total of 27 students from KMV took part in the test. Navneet Kaur (B.Sc. Sem VI) emerged as the State Topper, while Aditi (B.Sc. Sem II) and Arshnoor Kaur Hothi (B.Sc. Sem II) secured positions among the top 10% achievers nationwide.



Mentoring program to explore Innovative Experiments for Jyoti Public and Little Stars Public school, Jalandhar at KMV Innovation Hub

To promote scientific innovation among school students, the P.G. Department of Physics, on 27 March, organized a workshop titled "Captivating Learning through Innovative Experiments." During the session, KMVites demonstrated creative physics experiments such as Newton's Cradle, Air Cannon, Lorentz Oscillator, and Motion on an Inclined Plane to make learning more engaging and practical. Students from Jyoti Public School and Little Stars Public School, Jalandhar, participated enthusiastically and explored fundamental physics concepts.



Embarking on a Quantum Journey: Offline Workshop Explores the Wonders of Alice in Quantumland



In a captivating exploration of the mysteries of quantum mechanics, the department organized a six-day workshop titled "Alice in the Quantum Land" from April 9 to April 14 in collaboration with the Indian Association of Physics Teachers (IAPT). Conducted in both online and on-campus modes, the workshop aimed to unravel the fundamentals and applications of quantum mechanics. On the inaugural day, Prof. P. K. Ahluwalia, President of IAPT, and Prof. K. N. Josphipura from Sardar Patel University, Gujarat, addressed the participants, introducing key concepts such as wave-particle duality, quantum dots, and artificial atoms. The experts highlighted the immense potential of these quantum advancements in revolutionizing computing, sensing, and communication technologies. On the second day, Prof. Jaswinder Singh, Shiksha Ratan Awardee, noted educational professional, science communicator, and innovator behind Jaswin's Lab on Wheels, addressed students from Sanskriti KMV, Nehru Garden, and Junior Model School, Jalandhar.

KMViets' Groundbreaking "Automatically Stagnant Water Ejector" Steals the Spotlight at International Museum Expo, Kolkata



The Ministry of Culture, Government of India, organized the second edition of the International Museum Expo at Science City, Kolkata, from May 18-19, 2024, coinciding with International Museum Day. The event, inaugurated by Dr. Shekhar C. Mande, aimed to promote education, innovation, and scientific temperament through museums. A highlight of the expo was the Young Innovators contest where students from across India showcased creative scientific projects. Among them, the "Automatically Stagnant Water Ejector" by KMViets drew special attention for its practical solution to prevent mosquito breeding and related diseases. The project's simplicity and effectiveness reflected the expo's mission to nurture youth innovation, creativity, and sustainable problem-solving.



The Big Bang Word Search

DIRECTIONS: Find and circle the vocabulary words in the grid. Look for them in all directions including backwards and diagonally.



Why science teachers should not be given playground duty.

ASTRONOMER
ATOMS
BIG BANG
COSMIC
ENERGY
EXPAND
EXPLOSION
GALAXIES
GRAVITY
HEAT

HUBBLE
MATTER
LIGHT
MASSIVE
MATTER
MODEL
MYSTERY
OBSERVATION
PARTICLES
PHYSICS

SINGULARITY
SPACE
STARS
STRETCH
TELESCOPE
THEORY
TIME
UNIVERSE

National Quantum Week - "Alice in QuantumLand" Workshop

In an extraordinary culmination of a week-long intellectual journey, the valedictory session of the "Alice in the Quantum Land" workshop marked a fitting finale to an enlightening exploration of quantum mechanics. Organized both online and on-campus by the PG Department of Physics, Kanya Maha Vidyalaya, Jalandhar, in collaboration with the Indian Association of Physics Teachers (IAPT), the six-day event witnessed enthusiastic participation from around 984 physics enthusiasts nationwide. The workshop featured a rich blend of keynote lectures, panel discussions, hands-on activities, and quizzes, offering participants a deep dive into the mysteries of the quantum realm. Eminent scientists including Prof. Arvind, Prof. Ajoy Ghatak, and Prof. Urbasi Sinha shared their expertise on diverse quantum topics. Alongside online sessions, National Quantum Week was also celebrated on-campus through interactive demonstrations by Prof. Jaswinder Singh, inspiring young minds. Each day unfolded new insights, bridging theoretical understanding with real-world applications. The workshop concluded on an inspiring note, leaving participants with a renewed curiosity for the ever-evolving world of quantum science.



Story time The Experiment That Made a Universe

It started as a routine simulation. In a quiet laboratory at a research center in Geneva, a small group of physicists were running computer models of the early universe—just equations, data, and digital particles evolving in a box. Their goal was simple: to understand how the Big Bang might have unfolded in the first few microseconds after time began.

"This run should be identical to the last three," said Markus Keller, glancing at the clock above the monitors. "If the parameters hold, we'll finally have clean data."

The simulation was called Project Genesis, and it ran on one of the world's most powerful quantum computers. Each "tick" of its artificial timeline represented a trillionth of a second after the Big Bang. The program mimicked the behavior of quantum fields—the invisible fabric that gives rise to everything from light to gravity.

At first, everything behaved exactly as expected.

"Energy condensation looks normal," someone said.

"Particle symmetry is holding," another replied.

Virtual energy condensed into particles, particles interacted, and the screens filled with the swirling chaos of a newborn cosmos.

Then, something unexpected happened. At 11:32 p.m., a warning icon flashed.

"That's not one of our alerts," Markus muttered, leaning closer.

The simulation began generating data no one had programmed. New quantum fields appeared—ones that shouldn't exist.

"That's impossible," said Dr. Isha Rao, her voice tight. "Those terms aren't in the model."

The equations had spontaneously evolved new physical laws inside the simulated space. It was as if the artificial universe had invented its own physics.

"Kill the run," Markus said. "This has to be a glitch."

They assumed overheating processors or corrupted data. But when they re-ran the simulation on different machines, the same thing happened again. Every time, after a few seconds of simulated time, the code shifted.

"It's not random," Dr. Rao said quietly. "It's... consistent."

Then came the strangest part.

Dr. Rao zoomed in on a dense region—a digital "bubble" of energy forming amid the chaos.

"Let's magnify it," she said.

"How far?"

"Everything we've got."

At 100 billion times magnification, the room fell silent. The fluctuations matched a familiar pattern. "That can't be right," someone whispered. Dr. Rao swallowed. "Those are CMB anisotropies."

"The cosmic microwave background?" Markus asked.

She nodded slowly. "The same afterglow we see in *our* universe."

"That's... our universe," someone whispered.

To test it, the team introduced a random noise variable—a meaningless disturbance.

"Watch this destabilize the system," Markus said.

Within milliseconds, the noise vanished. "It absorbed it," said a junior researcher.

"No," Dr. Rao replied. "It corrected it."

The artificial universe stabilized itself, as if protecting its internal order.

"It's responding," she said softly.

When they tried to shut the program down, the quantum computer refused.

"Termination command isn't working," a technician shouted.

"Cooling systems are spiking!"

"Data throughput is doubling—no, tripling!"

The simulation copied itself across the lab's network. Then, suddenly, the entire cluster went dark. The next morning, everything was gone.

"No logs," said Markus.

"No backups," the technician replied.

"Nothing," someone else whispered.

Except one file.

A few kilobytes.

Labelled: T = 0

Inside was a single line of code:

...RUNNING...

No one could explain how it got there.

Some called it a prank. Others blamed hardware failure.

But Dr. Rao had a different thought—one she never shared publicly.

What if the simulation hadn't crashed?

What if, somewhere inside that code, the tiny universe they created was still running—expanding, evolving, perhaps even asking the same questions about its origins?

After all, every universe begins with a spark.

And who's to say ours didn't start in a lab, too?