

NISAR to revolutionize Earth observation with precision, global data access

Indo-US collaboration achieves a landmark in space science

Minister lauds ISRO-NASA teamwork, highlights broader impact on sectors like aviation and shipping

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Union Minister of State (Independent Charge) for Science and Technology; Earth Sciences, and Minister of State for PMO, Department of Atomic Energy, Department of Space, Personnel, Public Grievances and Pensions, Dr. Jitendra Singh today congratulated scientists from ISRO and NASA on the successful launch of the NISAR satellite from the Satish Dhawan Space Centre, Sriharikota.

Though Parliamentary responsibilities kept him in New Delhi, Dr. Jitendra Singh joined senior officials and scientists at the CSIR Auditorium to witness the historic launch via live telecast and applauded the flawless lift-off of the satellite aboard the GSLV-F16 rocket.

Describing NISAR as a “global benchmark” in Indo-US scientific collaboration, Dr. Jitendra Singh said the mission symbolizes the power of partnership between the world’s two largest democracies. “NISAR is not just a satellite; it is India’s scientific handshake with the world,” he said.

Launched aboard GSLV-F16, this was the first time ISRO’s GSLV vehicle successfully placed a satellite into a Sun-synchronous Polar Orbit. This 18th flight of the GSLV—and the 12th using the indigenous cryogenic stage—demonstrates India’s growing technological maturity in space systems.

Jointly developed by NASA and ISRO, the NASA-ISRO Synthetic Aperture Radar (NISAR) is the world’s first Earth observation satellite to carry dual-frequency synthetic aperture radars—L-band by NASA and S-band by ISRO—on a single platform. It will deliver high-resolution, all-weather, day-and-night imagery of Earth’s land and ice surfaces, revisiting each location every 12 days.

While NISAR’s applications in disaster management, climate monitoring, glacier tracking, and agriculture are well documented, Dr. Jitendra Singh emphasized that the satellite’s impact will extend far beyond.

“NISAR marks a striking shift in how we approach critical sectors such as aviation safety, maritime navigation, coastal management, and urban infrastructure planning,” he said. “The data from NISAR will serve as a backbone for smarter, science-driven decisions in shipping routes, air traffic systems, and even national infrastructure planning.”

The 2,393-kg satellite was inserted into a 747-kilometre Sun-synchronous orbit. Over its five-year mission life, NISAR will offer invaluable data for global climate science, seismic and volcanic monitoring, forest mapping, and resource management. Dr. Jitendra Singh highlighted that the open-access policy for NISAR’s data will empower not only scientists and researchers, but also developing countries, disaster-response agencies, and climate change stakeholders worldwide.

Built around ISRO’s I-3K spacecraft bus, the NISAR satellite reflects deep cooperation between NASA and ISRO. NASA provided the L-band radar, GPS receiver, high-rate telecom system, Solid-State Recorder, and the 12-meter deployable antenna. ISRO contributed the S-band radar, the spacecraft bus, the GSLV-F16 launch vehicle, and associated systems and services. The mission, estimated to cost over \$1.5 billion, is jointly funded by both agencies.

Dr. Jitendra Singh concluded by stating that under the visionary leadership of Prime Minister Narendra Modi, India’s space programme is evolving from utility-based missions to knowledge-based initiatives. “From Chandrayaan to NISAR, we are not only launching satellites—we are launching new possibilities for global science, sustainability, and shared progress.”





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