

1620

Pilgrim Fathers depart Leiden, Netherlands, for England on their way to America

1917

World War I: Battle of Passchendaele (Third Battle of Ypres) begins and lasts until November 6, 1917, causing approximately 500,000 casualties

Battle of Passchendaele



1961

Israel welcomes its one millionth immigrant

2007

Operation Banner, the presence of the British Army in Northern Ireland, comes to an end as the longest-running British Army operation ever

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TWEETS

01



Human trafficking is a horrific crime & a gross violation of human rights. On this #EndHumanTrafficking Day, let's act together to stand with victims, hold perpetrators to account & build a world where no one is bought, sold, or exploited.

@antonioguterres

02



A joyous day for our cultural heritage! It would make every Indian proud that the sacred Piprahwa relics of Bhagwan Buddha have come home after 127 long years. These sacred relics highlight India's close association with Bhagwan Buddha and his noble teachings. It also illustrates our commitment to preserving and protecting different aspects of our glorious culture.

@narendramodi

03



This false nomenclature of "researcher" and "engineer", which is a thinly-masked way of describing a two-tier engineering system, is being deleted from @XAI today. There are only engineers. Researcher is a relic term from academia.

@elonmusk

04



On land, at sea, and in the sky – our warriors are inflicting significant losses on the enemy everywhere. They protect our people and do everything possible for Ukraine to be strong and independent.

@ZelenskyyUa

Disclaimer: (Views expressed by columnists are personal and need not necessarily reflect our editorial stance)

US, India launch powerful satellite

Tracks subtle changes in Earth's land and ice surfaces

● A milestone in growing US-India cooperation

● Equipped with a 12-meter dish that will unfold in space

● NISAR will record nearly all of Earth's land and ice twice every 12 days

AFP | Washington, United States

A formidable new radar satellite jointly developed by the United States and India launched yesterday, designed to track subtle changes in Earth's land and ice surfaces and help predict both natural and human-caused hazards.

Dubbed NISAR (NASA-ISRO Synthetic Aperture Radar), the pickup truck-sized spacecraft blasted off around 5:40 pm (1210 GMT) from the Satish Dhawan Space Centre on India's south-eastern coast, riding an ISRO Geosynchronous Satellite Launch Vehicle rocket.

Livestream of the event showed excited schoolchildren brought to watch the launch and mission teams erupting in cheers and hugging.

Highly anticipated by scientists, the mission has also been hailed as a milestone in growing US-India cooperation between President Donald Trump and Prime Minister Narendra Modi. "Our planet surface undergoes constant and meaningful change," Karen St Germain, director of NASA's Earth Science division, told reporters ahead of launch.

"Some change happens slowly. Some happens abruptly. Some changes are large, while



A part of the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite resting in a thermal vacuum chamber, meant to mimic the conditions found in space, at NASA's Jet Propulsion Laboratory in August 2020

some are subtle."

By picking up on tiny changes in the vertical movement of the Earth's surface -- as little as one centimeter (0.4 inches) -- scientists will be able to detect the precursors for natural and human-caused disasters, from earthquakes, landslides and volcanoes to aging infrastructure like dams and bridges.

"We'll see land substance and swelling, movement, deformation and melting of mountain glaciers and ice sheets covering both Greenland and Antarctica, and of course, we'll see wildfires," added St Germain, calling NISAR "the most sophisticated radar we've ever built."

India in particular is interested in studying its coastal and nearby ocean areas by tracking yearly changes in the shape of the sea floor near river deltas and how shorelines are growing or shrinking.

Data will also be used to help guide agricultural policy by mapping crop growth, tracking plant health, and monitoring

soil moisture.

Equipped with a 12-meter dish that will unfold in space, NISAR will record nearly all of Earth's land and ice twice every 12 days from an altitude of 464 miles (747 kilometers).

Microwave frequencies

As it orbits, the satellite will continuously transmit microwaves and receive echoes from the surface.

Because the spacecraft is moving, the returning signals are distorted, but computer processing will reassemble them to produce detailed, high-resolution images.

Achieving similar results with traditional radar would require an impractically large 12-mile-wide dish.

NISAR will operate on two radar frequencies: L-band and S-band. The L-band is ideal for sensing taller vegetation like trees, while the S-band enables more accurate readings of shorter plants such as bushes and shrubs.

NASA's Jet Propulsion Laboratory and India's ISRO shared the workload, each building components on opposite sides of the planet before integrating and testing the spacecraft at ISRO's Satellite Integration & Testing Establishment in the southern Indian city of Bengaluru.

NASA's contribution came to just under \$1.2 billion, while ISRO's costs were around \$90 million.

India's space program has made major strides in recent years, including placing a probe in Mars orbit in 2014 and landing a robot and rover on the Moon in 2023.

Shubhanshu Shukla, a test pilot with the Indian Air Force, recently became the second Indian to travel to space and the first to reach the International Space Station -- a key step toward India's own indigenous crewed mission planned for 2027 under the Gaganyaan ("sky craft") programme.



NISAR will be the first radar of its kind in space to systematically map Earth, using two different radar frequencies (L-band and S-band) to measure changes of our planet's surface, including movements as small as centimeter. Synthetic aperture radar (SAR) refers to a technique for producing fine-resolution images from a resolution-limited radar system.

UAE begins pipeline project to ease Gaza water shortage

Jerusalem, Undefined

The United Arab Emirates has begun construction on a major pipeline to carry desalinated water from Egypt to southern Gaza, according to multiple sources.

Technical teams sent by the UAE have started transporting equipment needed for the project, the Emirati state news agency WAM reported on Wednesday.

The nearly seven-kilometre (4.5-mile) pipeline aims to help alleviate what WAM described as a "water crisis" in the Gaza Strip.

Earlier this week, COGAT -- the Israeli defence ministry body overseeing civil affairs in the Palestinian territories -- said construction of the pipeline would begin in the coming days and was expected to take weeks.

The project would link a desalination plant in Egypt to the Al-Mawasi area along Gaza's coast and could supply about 600,000 people daily, COGAT said.

WAM said the UAE had launched "several initiatives to drill and rehabilitate potable water wells".

Access to clean drinking water is extremely limited across Gaza, forcing its 2.4 million residents to rely on salty, often undrinkable water or irregular aid deliveries.

More than 80 percent of Gaza's water infrastructure has been damaged during the war between Israel and Hamas, according to estimates from the Palestinian Water Authority.

After Israeli supply cuts, most Gazans rely on polluted wells or sporadic NGO water deliveries, hindered by limited aid access.

Gaza civil defence says 14 killed by Israeli fire

Gaza City, Palestinian Territories

Gaza's civil defence agency said 14 Palestinians were killed by Israeli fire in four separate incidents on Wednesday, three of them near aid distribution sites.

The territory has been in the grip of war for almost 22 months and now, according to a UN-mandated report, its two-million-plus inhabitants are facing an unfolding famine.

Gaza's civil defence agency spokesman Mahmud Basal said six people were killed by Israeli fire near an aid distribution centre northwest of Rafah.

The Israeli military said it fired warning shots at a group of people who approached its troops hundreds of metres (yards) away from the aid centre and hours before its opening.