

8. Short news

1. Google's AI Data Centre Project on Christmas Island

In November 2025, Google announced plans to build a major artificial intelligence (AI) data centre on Christmas Island, an Australian external territory in the Indian Ocean.

About the Project

The project follows a cloud partnership agreement between Google and the Australian Department of Defence signed earlier in 2025. It will function as a strategic AI data hub, supporting AI-enabled military command, control, and digital resilience in the Indo-Pacific region. It will also connect to Google's subsea cable infrastructure, enhancing Australia's digital security and regional connectivity.

About Christmas Island

Location – Situated about 360 km south of Java (Indonesia) and 1,400 km northwest of mainland Australia in the Indian Ocean.

Geography – The island is the summit of an oceanic mountain, with its highest point at Murray Hill (361 m).

Environment – Known for phosphate deposits, tropical rainforests, and the iconic annual migration of red crabs (*Gecarcoidea natalis*).

Status – An Australian external territory with its main port at Flying Fish Cove; much of the island forms Christmas Island National Park.

Significance – The project marks the first AI infrastructure initiative on a remote Australian territory, combining strategic defence value with local economic and digital development.

2. Aditya-L1 Tracks Coronal Mass Ejection

In November 2025, India's Aditya-L1 mission, in collaboration with NASA, captured a Coronal Mass Ejection (CME) in visible light for the first time.

Key Findings

First Visible-Light CME Observation – Aditya-L1 provided the world's first spectroscopic observation of a CME in visible wavelengths, revealing the eruption's early expansion and structure. CME is a massive burst of plasma and magnetic fields from the Sun's corona that travels through space, affecting space weather. Detailed Plasma Analysis – Joint analysis by the Indian Institute of Astrophysics (IIA) and NASA yielded precise data on the temperature, density, and motion of solar plasma during the CME.

Significance

Advanced Space-Weather Forecasting – Visible-range data improves the ability to track solar eruptions, helping forecast solar storms that can disrupt satellites, navigation, and power grids.

Strengthens Global Collaboration – The success highlights India's growing role in international solar physics and enhances global monitoring of solar magnetic activity.

About Aditya-L1

Introduction – India's first dedicated solar observatory mission, developed by ISRO and launched on September 2, 2023.

Location – Positioned at the Lagrange Point 1 (L1), about 1.5 million km from Earth, allowing continuous observation of the Sun without Earth's shadow interference.

Objective – To study the solar corona, magnetic fields, solar winds, and space-weather phenomena affecting Earth's environment.

3. Rhesus Macaque

Context – The Standing Committee of the National Board for Wildlife (SC-NBWL), chaired by Union Environment Minister Bhupender Yadav, has recommended reinstating the Rhesus Macaque under Schedule II of the Wildlife (Protection) Act, 1972.

About Rhesus Macaque

The Rhesus Macaque (*Macaca mulatta*) is one of India's most widespread primate species,

known for its adaptability to both forest and urban ecosystems.

Habitat and Distribution – It is found across northern and central India, inhabiting tropical and temperate forests, rural areas, and cities, often living near human settlements.

Features – These monkeys are medium-sized with pink faces and brownish fur, displaying high social intelligence and complex group dynamics.

Concerns – Growing urbanisation, habitat fragmentation, and human feeding practices have increased human-monkey conflict, leading to crop loss, property damage, and injuries.

Conservation Status

IUCN – Listed as Least Concern due to its wide distribution.

CITES – Included in Appendix II, regulating its international trade.

Wildlife (Protection) Act – Earlier listed under Schedule II, its reinstatement aims to prevent cruelty, illegal capture, and unregulated trade.

Schedules under Wildlife (Protection) Amendment Act, 2022

Schedule I – Species with the highest level of protection; offences attract the most stringent penalties.

Schedule II – Species with lesser protection but covered under regulatory provisions for scientific management and conflict mitigation.

Schedule III – Contains protected plant species to prevent overexploitation.

Schedule IV – Lists species under CITES Appendices, aligning India's law with global conservation obligations.

4. Exercise Malabar-2025

INS Sahyadri, an indigenously built Guided Missile Stealth Frigate, represents India in 29th Edition of Exercise Malabar-2025, Guam strategic US military base, in the western Pacific Ocean.

About Exercise Malabar

It is a multilateral naval exercise originally launched as a bilateral drill between India and the US in 1992, now including Japan and Australia (Quad partners). It is an annual exercise held alternately in the Indian and Pacific Oceans; includes Harbour Phase (planning, briefings, coordination) and Sea Phase (joint fleet manoeuvres, ASW, gunnery, air operations).

Purpose – Enhances maritime domain awareness, interoperability, and joint operational readiness among democratic Indo-Pacific navies. Symbol of collective resolve to maintain freedom of navigation and regional stability.

Strategic significance for India – Supports SAGAR (Security and Growth for All in the Region) and Indo-Pacific Oceans Initiative (IPOI). Demonstrates India's indigenous naval capability under Aatmanirbhar Bharat through platforms like INS Sahyadri (Project 17 class).

About Guam

It is a U.S. island territory in Micronesia, in the Western Pacific. It hosts major U.S. naval and air bases (notably Andersen Air Force Base and Naval Base Guam).

5. Volcanic Lightning

In November 2025, researchers revisited the rare and powerful phenomenon of volcanic lightning, a striking display observed during major volcanic eruptions worldwide.

Volcanic Lightning – Volcanic lightning refers to flashes of electricity that occur during volcanic eruptions, independent of thunderstorms. The phenomenon has been historically observed since Mount Vesuvius (79 AD), noted by Pliny the Younger.

Condition – It forms when ash particles, rock fragments, and ice crystals in the eruption plume collide and generate static charges.

Process – As the static charges build up, they discharge as lightning either near the volcanic vent or high within the eruption plume. Water vapour released from magma contributes to higher moisture and ice formation, intensifying the electrical activity.

Early Warning Measures – Modern warning systems such as the World Wide Lightning Location Network (WWLLN) detect volcanic lightning early, providing crucial eruption alerts. Continuous satellite

monitoring and AI-based ash plume mapping further strengthen eruption forecasting. These detections help evacuate residents and guide aviation safety protocols.

Impact of Volcanic Lightning

Human safety - Ash clouds can suffocate and trigger health hazards in nearby regions.

Aviation - Volcanic ash ingestion can cause engine failure, demanding immediate flight route changes.

Infrastructure - Lightning and ash together can cause power outages and communication disruptions. Volcanic lightning, though dangerous, serves as nature's early warning system transforming destructive eruptions into opportunities for scientific insight and disaster preparedness.

