

## ISRO's Aditya-L1 Joins Global Effort in Landmark Solar Storm Study

Along with six U.S. Satellites, Aditya-L1 revealed that the May 2024 strong solar storm, called **Gannon's storm** behaved unusually due to **Magnetic Reconnection Event**.

### Key Findings

- **Magnetic Reconnection:** During the 2024 storm, **Coronal Mass Ejections (CMEs)** collided in space and squeezed each other so firmly that the magnetic field lines inside one of them snapped and rejoined in new ways, a process called **magnetic reconnection**.
- **Impact:** Sudden reversal of magnetic field made the **storm stronger**, causing speeding up of particles due to increase in energy, confirming the **magnetic reconnection event**.

### About Aditya L-1

- It is first **space based observatory class** Indian solar mission to **study the Sun**.
- Launched on **September 2023** on board **PSLV C57**.
- Placed in a halo orbit around **Lagrangian point 1 (L1)** of Sun-Earth system, about 1.5 million km from Earth.
  - ⊕ L1 point offers **continuous view** of Sun without any occultation/eclipses.
- Has **7 distinct payloads** including Visible Emission Line Coronagraph; Solar Low Energy X-ray Spectrometer; Plasma Analyser Package for Aditya; etc.

### Solar Storms and Coronal Mass Ejections (CMEs)

- **Solar storm** is composed of a series of giant explosions on the Sun, known as **CMEs**.
- A CME is like a **massive bubble of hot gas and magnetic energy** thrown out from Sun into space.
  - ⊕ On hitting the Earth, they can impact **earth's magnetic shield** disturbing satellites, communication, GPS, and even power grids.

## Substance use among school-going adolescents in India

A recent study of the National Medical Journal of India indicates that experimentation with drugs is beginning as early as age 11 among schoolchildren.

### Key Findings of report

- **Early Initiation:** Average age for initiation for any substance was **12.9 years**. It was **lowest for** inhalants at **11.3 years**.
- **Prevalence Levels:** **15.1%** of students reported lifetime use, and **10.3%** reported past-year use of psychoactive substances.

### Causes of Drug Abuse Among Schoolchildren

- **Social Media:** Glamorisation of substance use and online peer influence normalise experimentation among children.
- **Deficit Parenting:** Poor supervision, emotional neglect, and inconsistent discipline weaken protective family structures.
- **Mental Health Issues:** Anxiety, depression, ADHD, impulsivity, and behavioural difficulties heighten vulnerability to substance use.

### Way Forward

- **Early Prevention & Awareness Campaigns:** Implement school-based preventive education focusing on life-skills training to build informed, resilient children.
- **Parental Vigilance & Community Monitoring:** Strengthen parental supervision, digital monitoring, and community-level surveillance to detect early signs of substance exposure and restrict access.
- **Strict Law Enforcement & Zero-Tolerance Policy:** Enforce stringent action against drug peddlers near schools, enhance police-school coordination, and ensure fast-track prosecution under child-protection laws.
- **Counselling, Rehabilitation & Mental Health Support:** Provide child-friendly counselling, psychological support, and de-addiction services.

## New National Security Strategy (NSS) of USA keeps "Make America Great Again (MAGA)" as its Core Agenda

The strategy is centred around **economic nationalism**, **pursuit of core national interests** including sovereignty, homeland defence, self-reliance, etc.

- It marks a **major shift** from previous NSS focussing on **alliances, trade liberalisation, multilateralism, and rules-based international order**, etc.

### Key Shifts in the Strategy

- Regional Priorities:** It places **Western Hemisphere** at the top of America's regional priorities by reasserting **Monroe Doctrine**, and restoring America's pre-eminence in the region.
  - ⊕ **Monroe Doctrine (1823)** dealt with **non-interference** of European powers in Western Hemisphere.
- Great Power Dynamics:** NSS ceases to label **Russia and China** as an existential threat.
- Ideological Shift:** The strategy **replaces value-based democracy promotion** with "civilizational pluralism," ending USA's interference in internal political arrangements of countries.
- Role of Asia:** It is portrayed as central to America's future, reaffirming a **free and open Indo-Pacific** for America's security.

### Key Implications for India

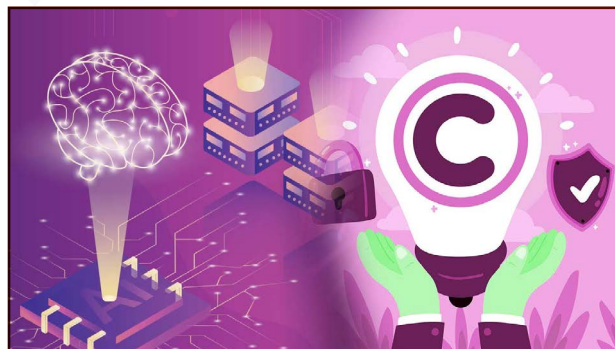
- Improved Relations:** It specifically mentions improving commercial (and other) relations with India for **Indo-Pacific security** through groupings like **QUAD** (India, Australia, Japan, and USA) and to **prevent domination by a single competitor nation**.
- Strategic Autonomy:** The ideological shift envisaged in the policy leaves room for India to pursue its independent foreign policy choices.
- Geopolitical Relief & Irritants:** A potential US-Russia détente suits **India's relations with Russia**. However, references to mediating India-Pakistan peace remain a diplomatic irritant.

## Working Paper on Generative Artificial Intelligence and Copyright released by DPIIT

Copyright has emerged as one of the most contentious legal and moral issues surrounding Artificial Intelligence. It questions traditional ideas of authorship, as generative models increasingly blur the boundary between originator and instrument.

### Issues Related with GenAI and Copyright

- Input Side- Use of copyrighted materials as input:** Key concern is that the copyrighted content is often used in AI training without the license from the rightsholders.
- Output Side- Copyright claims over AI-generated output:** Determining the copyrightability of AI generated works, Identifying authorship in AI-generated content, Applicability of moral rights in AI-generated works



### Regulatory Issues

- Absence of legal exceptions for AI training:** Indian copyright law currently provides no specific exception for text and data mining or for AI training activities.
- Ambiguity over application of fair dealing:** The scope of the 'fair dealing' exception under Section 52(1) (a) of the Copyright Act, 1957 meant for research, criticism, and reporting is unclear with respect to AI training, creating legal uncertainty.

### Key Recommendations of the Report

- Adoption of a Hybrid Regulatory Model:** The paper conceptualize to adopt a hybrid regulatory model which ensures availability of all lawfully accessed copyrighted content for AI Training as a **matter of right and** fair compensation to copyright holders.
- Statutory Remuneration Rights for Copyright Owners:** Copyright owners to get statutory right to receive royalties.

#### Models Practised by other countries

- Voluntary Licensing:** A model where copyright owners have full control to authorise or refuse use of their works
- Extended Collective Licensing:** A system where Collective Management Organizations issue licences on behalf of members and non-members of a category. Eg. **European Union, Australia, and Germany**.
- Text and Data Mining Exception:** A statutory exception that allows the reproduction or exploitation of copyrighted works. Eg. **Singapore**.

## Also In News



### Mephedrone

**Directorate of Revenue Intelligence (DRI)** dismantled a Mephedrone manufacturing facility in Maharashtra under **Operation Hinterland Brew**.

#### About Mephedrone

- It is a **New Psychoactive Substance (NPS)** - a drug designed to produce effects similar to those of established illicit drugs.
- It displays similar effects to **MDMA (3,4-methylenedioxymethamphetamine, ecstasy)**.
- Regarded an **empathogen-stimulant drug**, which means it speeds up the messages travelling between the brain and body.
- Mephedrone consumption has been associated with **undesirable effects and fatal intoxications**.



### Penguins

Study finds nearly 62,000 African penguins died of starvation between 2004-11.

#### About Penguins

- Groups of seabirds** belonging to **Spheniscidae** family.
- Consists of 17 to 19 species of birds found primarily in **Southern Hemisphere**.
  - Includes blue penguins of Australia and New Zealand, emperor penguins of Antarctica, African penguins, etc.
- Characteristics:** Despite being birds, they have **flippers instead of wings and cannot fly**.
  - They waddle on land, walking upright under right snow conditions and are **expert swimmers**.
  - Have **black body** with white belly helping them camouflage in water while searching for meals, mainly small shrimp, fish, crabs, and squid.



### Pass Through Status

**Asset reconstruction companies (ARCs)** called for extension in **pass-through tax status** to **alternative investment funds (AIFs)** investing in Security Receipts (SRs) for tax relief.

#### About Pass-through status

- It **takes away the obligation to pay corporation tax by an entity**. While the income generated at the hands of its investor is taxed.
  - An entity **usually pays tax twice: Income tax** for Income generated by shareholders and **Corporation tax** at corporate level.
- It **prevents double taxation**.
- The **2014 Union Budget** granted pass-through status to **Real Estate Investment Trusts (REITs)**.



### Global Environment Outlook (GEO)

**UN Environment Programme (UNEP)** released the 7<sup>th</sup> edition of **GEO: A Future We Choose** report.

#### Key Highlights

##### Key Concerns:

- Greenhouse gas emissions increased by 1.5% annually since 1990.
- Globally, Nine million deaths** attributed annually to some form of pollution.
- Land degradation at current rates, would cause losing fertile and productive land the size of Colombia or Ethiopia annually.

##### Key Recommendations:

- Tapping into **Indigenous Knowledge and Local Knowledge**.
- Annual investment of **about US\$8 trillion till 2050** for net-zero emissions.
- Whole-of-society and whole-of-government approaches** including shifting from GDP to indicators tracking human and natural capital.



### Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

20th Conference of Parties (CoP20) to (CITES) concluded in **Samarkand, Uzbekistan**.

#### Key Highlights of the CoP

- 77 species were added to **CITES appendices** including oceanic whitetip shark, whale shark, etc. in **Appendix I**.
- India successfully opposed European Union's proposal to list **guggul** in Appendix II, arguing for comprehensive population assessments first.

#### About CITES

- International agreement ensuring international trade in wild animals and plants does not threaten their survival.
- Although **legally binding, it does not take the place of national laws**.
- Lists species in **three appendices** based on their degree of protection.
- Enforcement:** July 01, 1975.
- Parties:** 185 (Including India).







## Neurotechnology

Neurotechnology is the emerging frontier which will expand our ability to understand and even influence how the human brain works in the future.

### About Neurotechnology

- It uses tools to interact directly with the brain, allowing systems to record, monitor, or influence neural activity.
- **Brain Computer Interface (BCIs):** It is a key neurotechnology that converts brain signals into digital commands.
  - ⊕ **Functions:** BCIs allow users to control devices like computers, wheelchairs, or robotic arms using their thoughts.
  - ⊕ **Applications:** BCIs aid paralysis treatment, diagnose brain disorders, and help treat depression and Parkinson's. **Example:** Neuralink.



## Bharat 6G alliance

Apex Council meeting of the **Bharat 6G Mission** reviewed progress of the **Bharat 6G Alliance** and shaped a roadmap to position India as a **global 6G leader by 2030**.

### About Bharat 6G alliance

- It is a **national collaborative platform** uniting government, industry, academia, and startups.
- **Aim:** To enable India to become a leading global supplier of IP, products and solutions of **affordable 5G and 6G** and other future telecom solutions.

### About 6G

- It will use **higher radio frequencies than 5G**, letting it handle vast data at once with almost no delay.
- 6G aims to send and receive information in just **one microsecond, that's 1,000 times faster than the response time of 5G**.



## Blue Notice

The CBI is actively engaging with Interpol to expedite the issuance of Blue Notices against the accused to prevent their movement to other jurisdictions.

### About Blue Notice

- **Purpose:** Issued by **Interpol to obtain additional information on a person's identity, location, or activities**.

### Other Important Notices

- **Red Notice:** Seeks the **location and arrest** of wanted persons for prosecution or to serve a sentence.
- **Yellow Notice:** Helps **locate missing persons**, especially minors, or identify individuals unable to identify themselves.
- **Orange Notice:** Warns member countries about **serious and imminent threats** posed by dangerous persons, weapons, explosives, or hazardous materials.
- **Green Notice:** to provide warning about a person's criminal activities, where the person is considered to be a possible threat to public safety.

## Place in News



## Brazil (Capital: Brasília)

Chief of the Naval Staff embarks on an official visit to Brazil.

### Political Features

- It is the 5th largest country in the world.
- **Location:** Eastern part of South America.
- **Borders:** It borders every South American country **except Chile and Ecuador**.
- **Coastline:** Atlantic coastline on its eastern side.

### Geographical Features

- **Natural Resources:** Gold, bauxite, diamonds, platinum, iron, tin, coal, and several other minerals
- **Major Mountains:** Pico da Neblina (Highest).
- **Major Rivers:** Amazon, Parana etc.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI