

Current Affairs search results for tag: science-and-technology

1. Aditya-L1 Space Observatory: Studying the Sun from Space (Aug. 29, 2023)

The Indian Space Research Organization (ISRO) is set to launch Aditya-L1, India's first space-based observatory designed to study the Sun.

An Overview of the News

- The launch is scheduled for 2 September 2023 at 11:50 a.m. from the **Sriharikota Space Station in Andhra Pradesh.**
- ISRO will use the **Polar Satellite Launch Vehicle-C57 (PSLV-C57)** for the Aditya L1 mission.
- The satellite will be placed in a halo orbit around the Lagrange point L1 within the Sun-Earth system, which is located approximately **1.5 million kilometers from Earth.**
- The journey to reach the Lagrange point is estimated to take about four months.
- A major advantage of this halo orbit around the L1 point is that it provides an unobstructed view of solar activity, without interference from astronomical events such as eclipses.

Objectives and Scope of Aditya L1 Mission

- After the success of Chandrayaan 3, ISRO has launched the ambitious **Aditya L1 mission.**
- The primary objective of the Aditya L1 mission is **to conduct a comprehensive study of the solar wind and the Sun's atmosphere.**
- The satellite will carry seven different payloads aimed at observing different layers of the Sun, including the **photosphere, chromosphere, and outermost corona.**
- The mission aims **to enhance our understanding of several solar phenomena, such as coronal heating, coronal mass ejection (CME), pre-flare and flare activities, as well as the dynamics of solar weather.**
- Additionally, the mission will contribute to the investigation of particle and field propagation within the interplanetary medium.

Indian Space Research Organization (ISRO):

- It was established on **15 August 1969.**
- It is the national space agency of India. It launched its space rocket from Satish Dhawan Space Center in Sriharikota, Andhra Pradesh.
- Headquarters - **Bengaluru**
- Chairman - **S Somnath**

2. First ABDM Microsite Launched in Mizoram (Aug. 26, 2023)

National Health Authority (NHA) inaugurated the ABDM microsite in Aizawl, Mizoram as part of the 100 microsites project.

An Overview of the News

- The objective of the ABDM microsite is **to accelerate the adoption of Ayushman Bharat Digital Mission (ABDM) across India.**
- Mizoram is the lead state operating the ABDM microsite.
- The initiative aims to transform health facilities including **private clinics, small hospitals, and laboratories** into ABDM-enabled establishments that provide digital health services.

Appointment of Interfacing Agency in Mizoram

- The implementation of the ABDM microsite in Aizawl has been entrusted to **"Youth for Action"** appointed as the interfacing agency.
- His role includes overseeing the successful execution of the ABDM microsite at Aizawl.

Significance of the 100 Microsites Project

- CEO of NHA underlines the paramount importance of the 100 microsites project under ABDM.
- This initiative has the potential to revolutionize healthcare digitization and encourage active participation of small and medium-scale healthcare providers.

Enhanced Patient Experience

- Patients can seamlessly link their health records with **Ayushman Bharat Health Accounts (ABHA).**
- Access and sharing of health records is facilitated through ABDM-enabled personal health record (PHR) applications on mobile devices.

Learning from Pilot Projects

- Previous pilot projects in Mumbai, Ahmedabad, and Surat have contributed to shaping the architecture of the wider 100 Microsites project under ABDM.
- States like **Andhra Pradesh, Madhya Pradesh, Uttar Pradesh, Maharashtra, and Chhattisgarh** are also making significant progress in implementing ABDM microsites.

3. Law Minister Arjun Ram Meghwal launches Tele-Law 2.0 (Aug. 26, 2023)

Law Minister Arjun Ram Meghwal launched Tele-Law- 2.0 on August 25, 2023, in New Delhi.

An Overview of the News

- The Department of Justice (DOJ) hosted the Tele-Law 2.0 event at **Siri Fort Auditorium, New Delhi.**
- The event marks the **achievement of helping 5 million citizens** and highlights the use of technology in providing **pre-litigation advice to the public.**
- Tele-law services are being integrated with legal representation services under the **Nyaya Bandhu (Pro Bono)** program.
- This integration streamlines access to **legal advice, assistance, and representation through a unified registration process on the Tele-Law platform.**
- The event recognizes and honors frontline workers who play a vital role in providing legal services directly to the people.
- The event has been organized by the Department of Justice in association with CSC e-Governance Services India Limited.
- The event is in line with the government's vision to strengthen the legal aid ecosystem and ensure equitable access to justice for all.

Important components of organizing include:

- Screening of a documentary showing the journey of tele-law from **2017 to 2022.**
- "Tele-Law-2.0" is being launched, which combines the **Tele-Law and Nyay Bandhu** apps, Also an e-tutorial has been released.
- Unveiling of **"Voices of Beneficiaries"**, a compilation of firsthand experiences shared by people who have benefited from Tele-Law.
- Presenting the **"Achievers Catalogue"**, which acknowledges outstanding performers such as Paralegal Volunteers, Village Entrepreneurs, Panel Lawyers, and State Coordinators for the years **2022-2023 and April to June 2023.**

4. India declares August 23 as National Space Day in honor of Chandrayaan-3's moon landing (Aug. 26, 2023)

On 26 August, Prime Minister Narendra Modi announced the designation of 23 August as National Space Day in honor of India's Chandrayaan-3 moon landing.

An Overview of the News

- The specific spot where Chandrayaan-3 landed on the Moon will be named **'Shivshakti'**, and the spot where Chandrayaan-2 landed will be called **'Tiranga Point'.**
- PM Modi made this announcement during his visit to the ISRO Telemetry Tracking and Command Network Mission Control Complex in Bengaluru, Karnataka.

Chandrayaan-3 Achievements:

- On 23 August 2023, Chandrayaan-3 achieved a historic feat by becoming the first mission to land on the South Pole of the Moon.
- Mission goals included a **safe lunar landing, rover maneuverability, and the performance of scientific experiments on-site.**
- India has now joined the ranks of the United States, Russia, and China in successfully landing on the Moon.

Objectives of Chandrayaan-3:

- Chandrayaan-3 is set to operate on the lunar surface for one lunar day (equivalent to 14 Earth days).
- The Pragyan rover will detect, conduct experiments, and transmit the data to the lander within a radius of 500 meters around the landing site.
- The Vikram lander will relay data and images to the orbiter, which will then transmit them back to Earth.
- Both the lander and the rover carry advanced scientific instruments for a variety of lunar investigations including terrain analysis, mineralogical composition, surface chemistry, atmospheric studies, and water/resource exploration.

Additional Payloads and Studies:

- The propulsion module that propelled the lander and rover into a 100 km lunar orbit contains the SHAPE payload.
- SHAPE (Spectro-Polarimetry of the Habitable Planet Earth) is designed to study the spectral and polarimetric characteristics of Earth from the orbit of the Moon.

Chandrayaan-1

- Chandrayaan-1 was the first Indian lunar probe launched by ISRO.
- It was part of the Chandrayaan program and was launched in October 2008 and the mission lasted till August 2009.
- Chandrayaan-1 consisted of a Lunar Orbiter and an Impactor.
- The Lunar Orbiter conducted scientific research and collected data about the Moon.
- The objective of the mission was to make a detailed map of the Moon's surface and study its composition.
- Chandrayaan-1 had advanced instruments to test the presence of water ice and minerals.
- The spacecraft carried both Indian and international scientific payloads.
- Chandrayaan-1 made important discoveries including evidence of water molecules on the lunar surface.

Chandrayaan-2:

- India's second lunar exploration mission developed by ISRO.
- Components: Lunar Orbiter, Vikram Lander, and Pragyan Rover.
- Scientific Objective: Study the composition of the lunar surface and find lunar water.
- Launch: July 22, 2019, from Satish Dhawan Space Centre.
- Landing Site: Intended for the south polar region of the Moon at a latitude of 70°S.
- Planned Landing Date: September 6, 2019
- Landing Result: The lander crashed due to a software glitch.

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- Chairman - **S Somnath**

5. Chandrayaan-3's Pragyan Rover Begins Lunar Mobility Operations (Aug. 25, 2023)

Indian Space Research Organization (ISRO) confirmed that the mobility operation of Pragyan Rover on Chandrayaan-3 has begun.

An Overview of the News

- The payload has been activated on the lander module. Both the lander and the rover instruments will now analyze the mineralogical composition of the Moon and detect seismic activities in its atmosphere.
- Indigenously developed Pragyan Chandra Rover successfully de-lighted from Vikram Lander.
- Pragyan Chandra Rover begins the exploration of the lunar surface, making India the fourth country to successfully land on the Moon.

About Chandrayaan:

- **Chandrayaan-3** is ISRO's third lunar mission after **Chandrayaan-1 (2008)** and **Chandrayaan-2 (2019)**.
- **Chandrayaan-1** revealed lunar insights, including the presence of water ice.
- **Chandrayaan-2** was intended to land on the Moon but faced challenges, which led to the deployment of the rover from lunar orbit.

Chandrayaan-3's enhancements and objectives:

- Chandrayaan-3 builds on the successes of earlier missions and addresses the challenges.
- The lander has an advanced braking system for controlled landing.
- The rover boasts advanced capabilities and scientific instruments as compared to the rover of Chandrayaan-2.

6. Dr. Jitendra Singh unveils the unique 'NAMOH 108' lotus and launches Lotus Mission along with innovative initiatives (Aug. 21, 2023)**NAMOH-108**

Union Minister Dr. Jitendra Singh launched a new 'Lotus flower variety named 'Namoh 108' developed by CSIR-NBRI in Lucknow. This lotus has an extraordinary 108 petals and holds religious and symbolic significance.

An Overview of the News

- The unveiling of 'NAMOH 108' is seen as a special gift to commemorate **Prime Minister Narendra Modi's dedicated ten years in office.**
- The Lotus Mission was also launched on the occasion and this project, like other priority schemes, aims to achieve specific goals. For example, the **National Honey and Bee Mission, the National Bamboo Mission**, and many other missions were mentioned.
- The **unique 'Namoh 108' lotus variety blooms from March to December**, rich in nutrients. In particular, its whole genome sequencing has been completed to better understand its characteristics.
- Under the Lotus research program, **NBRI in collaboration with FFDC, Kannauj introduced a garment made of lotus fiber and a perfume named 'Frotas' extracted from lotus flowers.**
- Dr. Jitendra Singh inaugurated the CSIR-NBRI Digital Herbarium, a repository of botanical specimens of India, and released books on roses, plant resources of Uttar Pradesh, and an e-flora guide.
- Collaborative research on cotton was initiated through an MoU between CSIR-NBRI and M/s Nucleome Informatics, Hyderabad.
- The event showcased **state-of-the-art research, technologies, and products developed by NBRI** through a six-day theme-based exhibition. It served to highlight his achievements to various stakeholders.
- **Dr. Ajit Kumar Shashani, Director, NBRI** welcomed Dr. Jitendra Singh and acknowledged the transformative impact of the 'One Week One Lab' initiative in showcasing CSIR achievements.

7. Union Minister launches Global Initiative on Digital Health (GIDH) (Aug. 19, 2023)

Union-Minister-launches-Global-Initiative-on-Digital-Health-(GIDH)

During the concluding day of the G20 Health Ministers' meeting held in Gandhinagar on 19th August 2023, Union Minister Dr. Mansukh Mandaviya unveiled the 'Global Initiative on Digital Health (GIDH)', a network managed by the World Health Organization (WHO).

An Overview of the News

- The launch event was graced by the presence of Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Organisation, who attended the launch of GIDH.
- Dr. Mandaviya emphasized that the G20 Chair of India leveraged its expertise in setting up a national digital health framework by coordinating various digital health interventions.
- Apart from the launch of GIDH, Dr. Mandaviya also unveiled the World Bank's flagship report 'Digital-in-Health - Unlocking Value for Everyone'.

Discussion focus areas during the three-day meeting:

- Health Emergency Preparedness and Response: There is a special emphasis on combating antimicrobial resistance and adopting the One Health framework.
- Strengthening Pharmaceutical Sector Cooperation: Enhancing cooperation within the pharmaceutical sector to address common challenges.
- Digital health innovation: exploring innovative approaches in the realm of digital health to improve health care outcomes.

8. Central Water Commission Chairman launches "Floodwatch" mobile app for real-time flood forecasts (Aug. 19, 2023)

Central-Water-Commission-Chairman-launches-Floodwatch-mobile-app-for-real-time-flood-forecasts

Central Water Commission (CWC) Chairman Kushwinder Vohra launched the "Floodwatch" mobile application.

An Overview of the News

- The objective of the "Floodwatch" mobile app is to disseminate real-time flood information and forecasts up to 7 days to the public through mobile phones.
- User-friendly app developed in-house with readable and audio transmission available in English and Hindi.

Key Features of "Floodwatch" App:

- Users can check the current flood conditions across the country in real-time.
- The app collects river flow data in real-time from various sources.
- Provides flood forecast (24 hours) or flood advisory (7 days) of Central Water Commission.
- Users can directly select stations on the map or search by station name.

- The map zooms in on the station location when selected from the dropdown menu.
- Users can access flood forecasts or advisories (24 hours or 7 days).
- Select Options: Specific Station, State, or Basin from the dropdown menu.
- The app is accessible on Android devices through the Google Play Store; the iOS version coming soon.

Advanced Technologies Employed:

- "Floodwatch" uses satellite data analysis, mathematical modeling, and real-time monitoring.
- Its objective is to provide accurate and timely flood forecasts.

9. Pibot: Humanoid Robot for Airplane Piloting (Aug. 17, 2023)

Pibot-Humanoid-Robot-for-Airplane-Piloting

The Korea Advanced Institute of Science and Technology (KAIST) is making advances in aviation through the creation of the "Pibot".

An Overview of the News

- Pibot is a humanoid robot designed to autonomously fly aircraft using advanced AI capabilities and its own dexterity.

Revolutionizing Aviation and Beyond:

- Pibot aims to revolutionize aviation by enabling autonomous flight in existing aircraft, without the need for cockpit modifications.
- By mimicking human pilot actions and decisions, Pibot aims to usher in a new era of automated aviation.

Unrivalled Control Precision:

- The Pibot has state-of-the-art robotic arms and fingers with high-precision control mechanisms.
- It excels in handling flight instruments and managing cockpit switches even under challenging conditions like intense vibrations.

Advanced AI Capabilities:

- Pibot uses artificial intelligence to understand and retain complex flight manuals presented in everyday language.
- It surpasses even human pilots by memorizing extensive sets of Jeppesen aeronautical navigation charts, a feat well beyond human capability.

10. NHAI launches a mobile application called 'Rajmargyatra' (Aug. 4, 2023)

The National Highways Authority of India (NHAI) launched a citizen-centric integrated mobile application named 'Rajmargyatra' to enhance the highway user experience.

An Overview of the News

- The 'Rajmargyatra' app is available for download on Google Play Store and iOS App Store and currently supports Hindi and English languages.
- 'Rajmargyatra' provides comprehensive information on Indian National Highways, including real-time weather conditions, broadcast notifications, nearest toll plazas, petrol pumps, hospitals, hotels and other essential services for safe and seamless travel.
- The app has an efficient complaint redressal system, which allows users to report highway-related issues with geo-tagged videos or photos. The complaints are dealt with in a time bound manner, any delay is reported to the higher authorities. Users can track the status of their complaints for transparency.
- 'Rajmargyatra' integrates FASTag services with various bank portals, enabling users to recharge FASTags, avail monthly passes and access other related banking services within the app.
- The app also provides over-speed notification and voice assistance to promote responsible and safe driving behaviour.
- 'Rajmargyatra' aims to create a user-friendly experience for highway commuters, thereby ensuring a safer and more enjoyable journey on Indian National Highways.

About National Highways Authority of India (NHAI)

- The NHAI was created through a promulgation of the National Highways Authority of India Act, 1988.
- It is an independent organization established in 1995 by the Government of India.
- NHAI manages and maintains a vast network of more than 50,000 km of National Highways across India, which represents about 40% of the total length of National Highways in the country.
- NHAI is responsible for maintaining and upgrading the quality of National Highways in India and ensuring their smooth operation for the benefit of road users.
- As a nodal agency of the Ministry of Road Transport and Highways, NHAI plays a vital role in formulating policies related to highways and implementing them effectively.
- Headquarters - New Delhi
- President - Santosh Kumar Yadav