

**Moon walk:** (Left) A lunar crater which Pragyan rover encountered on Sunday; and the path retraced by the rover on the lunar surface, as seen by the navigation camera onboard. PTI (REPORT: PAGE 10)

## ISRO to launch Aditya-L1 on Sept. 2 to study the sun

**The Hindu Bureau**  
BENGALURU

Aditya-L1, India's first space-based observatory to study the sun, will be launched on September 2, the Indian Space Research Organisation (ISRO) announced on Monday.

The spacecraft will lift off at 11.50 a.m. IST from Sriharikota on the day, the space agency posted on X (formerly Twitter).

According to ISRO, the spacecraft will be placed in a halo orbit around the Lagrange point 1 (L1) of the sun-earth system, which is about 1.5 million km from the earth.

It is expected to take over 120 days for the spacecraft to reach the L1.

The mission profile of Aditya-L1 states that "a satellite placed in the halo orbit around the L1 point has the major advantage of

continuously viewing the sun without any occultation/eclipses. This will provide a greater advantage of observing the solar activities and its effect on space weather in real time. The spacecraft carries seven payloads to observe the photosphere, chromosphere and the outermost layers of the sun".

**CONTINUED ON**  
» PAGE 10

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### **ISRO to launch Aditya-L1 on Sept. 2**

Using the special vantage point L1, four payloads directly view the sun and the remaining three payloads carry out in-situ studies of particles and fields at the Lagrange point L1, thus providing important scientific studies of the propagatory effect of solar dynamics in the interplanetary medium.

The seven payloads onboard the satellite are Visible Emission Line Coronagraph (VELC), Solar Ultraviolet Imaging Telescope (SUIT), Solar Low Energy X-ray Spectrometer (SoLEXS), High Energy L1 Orbiting X-ray Spectrometer (HELIOS), Aditya Solar wind Particle Experiment (ASPEX), Plasma Analyser Package For Aditya (PAPA) and Advanced Tri-axial High Resolution Digital Magnetometers.

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# Article 35A denied rights to many: CJI

Chief Justice asks the Centre if it adhered to the principle of federalism while abrogating Article 370 and abolishing J&K as a full-fledged State

**Krishnadas Rajagopal**  
NEW DELHI

**C**hief Justice of India D.Y. Chandrachud said Article 35A, which empowered the Jammu and Kashmir Legislature to define "permanent residents" of the State and provide them special privileges, denied fundamental rights to others.

"Article 35A gave special rights and privileges to permanent residents and virtually took away the rights for non-residents. These rights included the right to equal opportunity of State employment, right to acquire property and the right to settle in Jammu and Kashmir," Chief Justice Chandrachud, heading a Constitution Bench, observed on Monday.

Addressing Solicitor-General Tushar Mehta, the



Article 35A gave special rights and privileges to permanent residents and virtually took away the rights for non-residents

**D.Y. CHANDRACHUD**  
Chief Justice of India

Chief Justice, however, asked whether the Centre had adhered to the principle of federalism while abrogating Article 370 and abolishing J&K as a full-fledged State.

The Chief Justice said the abrogation was facilitated by first dissolving the J&K State Legislature and then proclaiming President's Rule under Article 356 on the ground of breakdown of constitutional machinery in the State.

He pointed to the provi-

so to Article 3, which made it mandatory for the President to consult the State Legislature before altering the status of a State. The proclamation of President's Rule in December 2018 had done away with the applicability of the proviso to Article 3. "But the Parliament assumed the role of the Jammu and Kashmir State Legislature," Mr. Mehta insisted.

**CONTINUED ON**  
» **PAGE 10**

## **Article 35A denied many their rights: CJI**

"So, are you saying that the Parliament would then give its views to itself about the alteration of Jammu and Kashmir from a State to Union Territories and also enact the law for reorganisation of the State? Would that really be consistent with the federal structure?" Chief Justice Chandrachud asked. Mr. Mehta defended that J&K was "still a State for all purposes".

"It is a State with a legislature, everything... only the police powers are with the President. It was a very detailed reorganisation," the Solicitor-General assured.

### **Permanent residents**

'Permanent residents' of the erstwhile State included people who were hereditary State subjects as in 1927, when J&K was a princely state. Article 35A, which was introduced through the Constitution (Application to Jammu and Kashmir) Order, 1954 issued by the President under Article 370, demarcated permanent residents with exclusive right to purchase land, seek State government employment and other benefits. The others were not eligible for these privileges.

The Chief Justice noted that Article 35A had even granted immunity from judicial review to these special privileges. "This artificially created class of 'permanent residents' alienated people who did not fall within the category. Article 35A further mandated that any law which provides for these special privileges to this class would not violate fundamental rights like Articles 14 (right to equality), 19 (1)(f) and 31 (then right to property), 19(1)(e) (right to settle anywhere in the country) and even Article 21 (right to life and personal liberty) and 22 (protection against preventive detention). That demarcating line between permanent residents and non-residents did this for decades together. It was unthinkable in a constitutional democracy... the Government of India with the State government of Jammu and Kashmir added Article 35A," Mr. Mehta submitted.

To this, the Chief Justice said, "Mr. Solicitor, you are appearing for the Government of India. You [Government of India] did all this. In constitutional theory, the Government of India is one, perpetual entity."

Mr. Mehta said the Centre corrected itself in August 2019 when it abrogated Article 370 and its creation, Article 35A. "I am justifying this correction we made in 2019. I am not saying that or this government. 'Our government' is what I say. The mistakes of the past should not befall the future generations," he replied.

The Solicitor-General pointed to how people, both Hindus and Muslims, driven out of Pakistan-occupied Kashmir in 1947 were not recognised as permanent residents until 2019. The large population of *safai karamcharis* brought to J&K for manual work were not given this status despite residing in the State for years. "Article 35A had enjoyed a status over and above the Ninth Schedule (laws outside the ambit of judicial review) of the Constitution," he stressed.



## 'Let Karnataka release 5,000 cusecs to T.N.'

The Cauvery Water Management Authority will decide on the recommendation of the Cauvery Water Regulation Committee today; while Tamil Nadu has sought 24,000 cusecs per day for the next 15 days, Karnataka has indicated that it will be able to supply only 3,000 cusecs

**T. Ramakrishnan**  
CHENNAI

**T**he Cauvery Water Regulation Committee (CWRC) on Monday decided to recommend to the Cauvery Water Management Authority (CWMA) that Karnataka release 5,000 cusecs (cubic feet per second) of Cauvery water to Tamil Nadu for the next 15 days.

The CWMA would hold its meeting on Tuesday wherein it would take a call on the recommendation. Vineet Gupta, chairman of the CWRC, told *The Hindu* on Monday.

While Tamil Nadu sought 24,000 cusecs to be given, Karnataka had indi-

cated it would be able to supply 3,000 cusecs.

Held in a hybrid manner, the meeting, which lasted nearly two-and-a-half hours, saw "detailed deliberations" and took into account the forecast of the Meteorological Department for the next fortnight, Mr. Gupta added. There was a "heated discussion" too, a representative of the Tamil Nadu government said.

Reacting to the development, Karnataka Deputy Chief Minister D.K. Shivakumar, also Minister for Water Resources, said his State had appealed against the CWRC recommendation. "The meeting [of the CWMA] is scheduled for



Karnataka has released only 30 tmcft of water to Tamil Nadu in August in view of poor storage levels in the reservoirs. FILE PHOTO

Tuesday. I am not going to talk till the final verdict comes," Mr. Shivakumar told presspersons in Mysuru.

Karnataka had informed

the committee about the ground realities in the State. "They [Tamil Nadu] asked for a lot more. We will protect the interest of the State as well as its farm-

ers," the Deputy Chief Minister added.

Asked for comment, the T.N. government's official said that the State would give its formal and detailed response at the CWMA meeting. He contended that the diminution of flows to Karnataka reservoirs had been "exacerbated by unauthorised utilisation" either through pumping of water to tanks or for minor irrigation.

Meanwhile, Karnataka CM Siddaramaiah told reporters in Mysuru that he would discuss the issue with Mr. Shivakumar, Irrigation Department Officials and the legal team.

Contending that Karnataka had to save its stand-

ing crops and meet its drinking water requirements, Mr. Siddaramaiah said the CWRC's recommendation to release 5,000 cusecs of water per day for next 15 days and the actual availability of the water would be discussed with the Irrigation Department.

He said Karnataka had to release 86 tmcft of water during August in a "normal year". So far, the State had released 30 tmcft in the month of August in view of poor storage levels in the reservoirs, he noted, while pointing out that "the distress formula has not yet been defined".

(With inputs from the Karnataka Bureau)

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### Gold winner

Neeraj Chopra is leading a javelin revolution for India

**N**eeraj Chopra scripted another glorious chapter by becoming the first-ever Indian to secure a gold in the World Athletics Championships in Budapest on Sunday. It was Neeraj's second and India's third medal after long jumper Anju Bobby George opened the account in 2003. Neeraj, the first Indian Olympic champion athlete, hurled the javelin to 88.17m in his second attempt to achieve the crown in a highly competitive field, also comprising Commonwealth Games champion Arshad Nadeem, who took the silver, the first-ever Worlds medal for Pakistan, with 87.82m. Neeraj, who recorded his season best 88.77m in the qualification round, continued his unbeaten streak this year to not only improve upon his 2022 Worlds silver in Eugene but also become the third athlete after Jan Zelezny and Andreas Thorkildsen to win the World and Olympics gold. He formally led India's javelin revolution at a global stage as compatriots, Kishore Jena (84.77m) and D.P. Manu (84.14m), took fifth and sixth spots. Neeraj's feat made India one of the three countries which earned their maiden yellow medal. The Indian men's 4x400m relay team members (Muhammed Anas, Amoj Jacob, Muhammed Ajmal and Rajesh Ramesh) ran out of their skin to create a new Asian record (2:59.05) and enter the final. Ultimately, they finished fifth. Woman steeplechaser Parul Chaudhary set a new national mark of 9:15.31.

However, the long jumpers, triple jumpers, hurdler Jyothi Yarraji and steeplechaser Avinash Sable's below par show brought disappointment. Even though leading athletes have been caught for doping this year, Neeraj, Chaudhary and the relay team's achievements will encourage the Indians for the Asian Games and 2024 Olympics. The mediocre performance of several athletes is a matter of concern for the Athletics Federation of India and the Sports Ministry and calls for an appraisal of the training. The World Championships witnessed several spectacular performances, including the U.S. 4x400m mixed relay team's world record. While the U.S. continued to dominate despite a reduced tally of 29 medals, including 12 gold, Canada improved to claim six, including four gold. With China not getting a single title, Asia's gold count dipped from five to three. U.S. sprinter Noah Lyles became the first male after Usain Bolt to win the 100m, 200m and men's 4x100m relay titles, Kenyan superstar Faith Kipyegon won a 1500m and 5000m double and Spaniard Alvaro Martin and Maria Perez swept the race walks, coinciding with the Chinese and Japanese walkers' failure, to make the edition exciting. The World Athletics would do well to promote track and field sport across the globe.

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## Moon mission gained from crash analysis: LPSC chief

After the Chandrayaan-2 lander crash, a panel had suggested improvements to software, guidance control systems, propulsion mechanism, powered descent scheme and Vikram lander, he says

**Tiki Rajwi**  
THIRUVANANTHAPURAM

**T**he August 23 moon landing scored by the Indian Space Research Organisation (ISRO) with its Chandrayaan-3 mission is also the story of how an efficient performance analysis helped the space agency bounce back in style from a setback. V. Narayanan, Director, Liquid Propulsion Systems Centre (LPSC), has noted.

Dr. Narayanan, who has headed the LPSC since January 2018, had chaired the national-level expert committee which analysed the reasons for the 2019 Chandrayaan-2 lander crash and recommended improvements that were incorporated in Chandrayaan-3.

"A multidisciplinary review by the nine-member panel had analysed all aspects of the Chandrayaan-2 spacecraft's performance and submitted its report within a month. Improvements were recommended in most of the systems to enhance their reliability. Practically all the recommendations, barring one or two which were not seen as vital, were imple-



The committee's recommendations included enhancing the propellant margin and strengthening the lander legs. PTI

mented," Dr. Narayanan told *The Hindu* on Monday.

The Chandrayaan-2 mission, launched in July 2019 from Sriharikota, had performed normally until contact with its Vikram lander was lost at an altitude of 2.1 km amid its descent to the landing site.

The committee suggested improvements to the software packages, the navigation, guidance control systems, the propulsion mechanism and the powered descent scheme, and the Vikram lander system, among other things. Its recommendations included enhancing the propellant margin in the spacecraft, and strengthening the lander legs.

"The entire software system was verified, validated and strengthened, because once the powered descent (to the lunar surface) starts, everything is autonomous and has to work with precision," Dr. Narayanan said.

### Perfect mission

A rocket propulsion expert who began his career with ISRO in 1984, he described Chandrayaan-3 as "a perfect mission" where all components functioned splendidly to make India the first nation to soft-land on the lunar South Pole.

The ISRO's 'liquid propulsion community' – LPSC and the ISRO Propulsion Complex, Mahendra-



The entire software system was verified, validated and strengthened, because once the powered descent starts, everything is autonomous and has to work with precision

**V. NARAYANAN**  
LPSC chief

giri – made vital contributions to the Chandrayaan-3 mission, he said. The LPSC contributed four propulsion systems – the L110 core liquid stage and the C25 cryogenic upper stage for the LVM3 launch vehicle, one for the Propulsion Module and one for the Vikram lander which touched down on the lunar surface.

Dr. Narayanan, who holds an M.Tech. in cryogenic engineering and a Ph.D. in aerospace engineering, has played major roles in the development of cryogenic propulsion systems in the ISRO, including the C25 cryogenic upper stage of the LVM3 rocket.



# 'Population growth not a panacea'

India's growing population can help boost its labour force but it is not enough to make the economy stronger, says Moody's. The ratings body says strong education and quality infrastructure are also key to reaping the benefits of a larger population

**The Hindu Bureau**  
NEW DELHI

India's population growth would raise its labour force availability but that alone won't be enough to make the economy stronger or improve fiscal outcomes, due to the quality of education in the country, Moody's Investors Service said in a report on Monday.

Emphasising that better educational outcomes will help countries like India avoid potential job losses from digitalisation and Artificial Intelligence in the long run, especially in ser-

## Uncertain dividend

India's growing population expected to aid economic growth, but quality of education could be a spoiler: Moody's



- Moody's clubs India's current education outcome levels with that of Pakistan and Bangladesh
- There remains a considerable gap in the quality of education between India compared with peers like China
- Gender disparity in educational achievements is the most pronounced in India and Bangladesh

vices like call centres and BPOs, Moody's bracketed India's current education outcome levels with that of Pakistan and Bangladesh.

In a report titled 'Popu-

lation growth alone will not drive credit benefits for emerging economies', the rating major said it expects continued population growth in the region to

support economic expansion as working-age populations will remain large compared with younger and older citizens.

"However, the availability and scale of labour inputs alone will not drive materially stronger economic strength or better fiscal outcomes. Other conditions such as strong education and quality infrastructure are also key to reaping the benefits," it noted.

"There remains a considerable gap in the quality of education between Pakistan, Bangladesh and India compared with China

and other peers in South East Asia, which contributes to labour force participation imbalances," Moody's added.

India, Bangladesh, Indonesia, Pakistan, the Philippines and Vietnam will account for a third of the global population increase over the next 20 years and 40% of the uptick in working age population, the agency reckoned.

Moody's said the difference in the proportion of the male and female population that has completed an upper secondary education was most pronounced in India and Bangladesh.



# News media versus OpenAI's ChatGPT

Why have major news agencies and newspapers like The New York Times, Reuters and CNN blocked the GPT bot? What are crawlers and how do they help large language models? Why is there no furor over search engines scraping data from news websites?

## EXPLAINER

Anuj Srivas

### The story so far:

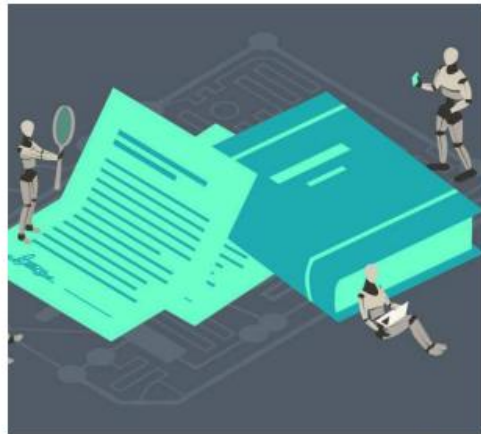
A group of news media organisations, including The New York Times, Reuters, CNN and the Australian Broadcasting Corporation, recently shut off OpenAI's ability to access their content. The development comes in the wake of reports that The New York Times is planning on suing the artificial intelligence (AI) research company over copyright violations, which would represent a considerable escalation in tensions between media companies and the leading creator of generative artificial intelligence solutions.

### What does OpenAI do?

The company is best known for creating 'ChatGPT', which is an AI conversational chatbot. Users can ask questions on just about anything, and ChatGPT will respond pretty accurately with answers, stories and essays. It can even help programmers write software code. The hype around ChatGPT – specifically, the breathtaking advancements in the field of AI required to create it – has propelled OpenAI into becoming a \$30 billion company.

### What started the face-off between news outlets and OpenAI?

Software products like ChatGPT are based on what AI researchers call 'large language models' (LLMs). These models require enormous amounts of information to train their systems. If chat bots or digital assistants need to be able to understand the questions that humans throw at them, they need to study human language patterns. Tech companies that work on LLMs like Google, Meta or Open AI are secretive about what kind of training data they use. But it's clear that online content found across the Internet, such as social media posts, news articles,



GETTY IMAGES

Wikipedia, e-books, form a significant part of the dataset used to train ChatGPT and other similar products. This data is put together by scraping it off the Internet. Tech companies use software called 'crawlers' to scan web pages, hoover up content and put it together in a dataset that can be used to train their LLMs.

This is what news outlets took a stand against last week when The New York Times and others blocked a web crawler known as GPT bot, through which OpenAI used to scrape data. They told OpenAI that the company can no longer use their published material and their journalism, to train their chat bots.

### Why are media companies upset?

Search engines like Google or Bing also

use web crawlers to index websites and present relevant results when users search for topics. The only difference is that search engines represent a mutually beneficial relationship. Google, for instance, takes a snippet of a news article (a headline, a blurb and perhaps a couple of sentences) and reproduces them to make its search results useful. And while Google profits off of that content, it also directs a significant amount of user traffic to news websites.

OpenAI, on the other hand, provides no benefit, monetary or otherwise, to news companies. It simply collects publicly available data and uses it for the company's own purposes.

"Anyone who wants to use the work of Wall Street Journal journalists to train artificial intelligence should be properly

licensing the rights to do so from Dow Jones," Jason Conti, general counsel for News Corp.'s Dow Jones unit, said in a statement earlier this year.

But it's also true that some news outlets probably view ChatGPT as a potential competitor that will profit off their journalism. After all, if you ask ChatGPT to describe the coffee and food served by the best cafes on Manhattan's Upper East Side, the answer probably comes from some AI-generated mixture of reporting done by The New York Times' features team and reviews put out by food-centric publications.

### What is the way forward?

Looking ahead, there are two key questions to be answered. If your data was used to train ChatGPT without permission or compensation, have your rights been violated? And just how much can companies like OpenAI pay out before it makes the whole endeavor financially unfeasible? Tech gurus like to argue that the value of online content only exists in the aggregate. Or in other words, ChatGPT could still exist as a high-quality product without CNN's reporting. But if all media publications across the world refused to provide access to OpenAI, it's likely that the final product would be of lower quality. And, of course, if every single creator of online content turned down OpenAI, then ChatGPT would almost certainly not exist.

However, at the same time, it's clear that OpenAI does believe some data is worth paying for. Last month it signed a licensing arrangement with The Associated Press, in a deal that would allow the company to use the news agency's archival content as a training dataset. But what happens when people refuse to accept payment and sue OpenAI for copyright infringement, the way a group of novelists did last year? The legal battles ahead will have interesting implications for journalism, intellectual property and the future of artificial intelligence.

(Anuj Srivas is a freelance writer.)

## THE GIST

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