

Vikram kicked up 2 tonnes of lunar dust, say scientists

The Hindu Bureau
BENGALURU

+ Chandrayaan-3's lander module, Vikram, had generated an "ejecta halo" on the lunar surface while making the historic touchdown on the south pole of the moon on August 23.

According to a new study, Vikram raised lunar dust and generated a bright patch around itself when it landed on the moon.

"Chandrayaan-3 Results: On August 23, 2023, as it descended, the Chandrayaan-3 Lander Module generated a spectacular 'ejecta halo' of lunar material. Scientists from NRSC/ISRO estimate that about 2.06 tonnes of lunar *epi regolith* were ejected and displaced over an area of 108.4 m² around the landing site," ISRO posted on X.

These findings were published in an article titled *Characterisation of Ejecta Halo on the Lunar Surface*



Chandrayaan-3's Vikram lander on the moon. ISRO

Around Chandrayaan-3 Vikram Lander Using OHRC Imagery in the Journal of the Indian Society of Remote Sensing on October 26.

"The Vikram lander of the Chandrayaan-3 mission landed near the south pole of the moon on August 23. During the action of descent stage thrusters and the consequent landing, a significant amount of lunar surficial *epi regolith* material got ejected, resulting in a reflectance anomaly or *ejecta halo*," states the abstract of the article, auth-

ored by Swati Singh, Prakash Chauhan, Priyom Roy, Tapas R. Martha and Iswar C. Das from ISRO's National Remote Sensing Centre (NRSC), Hyderabad.

Images compared

The authors added that they compared the pre- and post-landing high-resolution panchromatic imagery from orbiter high-resolution camera (OHRC) of the Chandrayaan-2 orbiter, acquired hours before, and after the landing event, and characterised this *ejecta halo* as an irregular bright patch surrounding the lander.

India became the first nation to touch down in the moon's polar region when Chandrayaan-3's lander module, with the rover in its belly, successfully made a soft landing on the lunar surface. The lander and the rover went to sleep after the end of one lunar day (14 Earth days).

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Arjun and Tilottama secure quota for Paris Olympics



Tilottama.



Arjun.

ASIAN SHOOTING

Sports Bureau

Arjun Babuta and Tilottama Sen added to the Indian collection of Olympic quota for Paris, with silver medals in air rifle in the 15th Asian shooting championship in Changwon, Korea, on Friday.

Arjun did it in style, as he topped the qualification with 633.4 but was beaten to the gold by 0.9 point by Sheng Lihao of China.

Olympian and former World No.1 Divyansh Singh Panwar also qualified strongly but eventually placed fourth.

Tilottama Sen had missed the Olympic quota in the World Championship despite a sterling performance as Mehuli Ghosh had won the quota then by winning the bronze.

This time, Tilottama missed the gold by 0.1 point to Kwon Eunji of Korea, but secured the Olympic quota by winning the silver. Ramita Jindal followed with the bronze medal. There were many more medals for India in the junior and youth sections, but what mattered was the Olympic quota.

Indian shooters have so far won 10 Olympic quota places.

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Sheetal creates history as India strikes it rich again

Armless teenage archer becomes first Indian woman to win two events in single edition of the Games; shuttlers claim four golds and long jumpers two; country on the cusp of 100 medals

ASIAN PARA GAMES

Press Trust of India
HANGZHOU

Teenaged armless archer Sheetal Devi, who holds her bow with her foot, became the first Indian woman to win two gold medals in a single edition of the Asian Para Games as the country's record haul swelled to 99 on the penultimate day of competitions here on Friday.

India won 17 medals, including seven gold, on the day to be placed fourth in the overall standings with 99 medals (25 gold, 29 silver and 45 bronze) with China (196 gold, 159 silver, 138 bronze) on top.

It was a hat-trick of medals for the 16-year-old Sheetal, who has already won gold in the compound mixed team event and women's doubles silver.



Phenom! Sheetal underlined her class with a winning display in the individual compound event. SPECIAL ARRANGEMENT

The teenager from Jammu and Kashmir, who became the first armless woman to win a Para World Archery Championships medal in July, defeated Singapore's Alim Nur Syahidah 144-142 in the individual compound gold medal match.

Pramod, Suhas reign

In badminton, reigning Paralympic champion Pramod Bhagat secured gold in

the single SL3 category as he outplayed compatriot Nitesh Kumar 22-20, 21-19 in the final.

Tokyo Paralympics silver medallist Suhas Lalinakere Yathiraj bettered his bronze from the last edition by winning gold in the SL4 final.

Thulasimathi Murugesan warded off the challenge from China's Yang Qiuxia by eking out a 21-19, 21-19 to clinch the yellow metal in

the women's SU5 final. In men's doubles SL3-SLF4, Nitesh and Tarun won gold.

In athletics, Raman Sharma and Dharamraj Solairaj claimed the men's 1500m T38 and long jump T64 events. Raman reigned supreme with a new Asian and Games record time of 4:20.80s, while Dharamraj also broke the same two records by clearing a distance of 6.80m.

Other medallists:

Athletics: Silver: Pradeep Kumar (men's F54 javelin);

bronze: Laxit (men's F54 javelin), Lakshmi (women's F37-38 discus), Manu (men's F37 shot put).

Archery: Silver: Rakesh Kumar (men's compound).

Badminton: Silver: Nitesh Kumar (men's singles SL3); Thulasimathi & Manasi Joshi (women's doubles SL3-SU5), Krishna Nagar (men's singles SH6), Chirag Barotha & Raj Kumar (men's SU5 doubles).

Swimming: Bronze: Suyash Narayan Jadhav (men's S7 50m butterfly).

Draft poll rolls put number of T.N. voters at 6.11 crore

The Sholinganallur Assembly constituency in Chengalpattu has the highest number of voters in the State with 6,52,065, whereas Kilvelur in Nagapattinam district has the lowest with 1,69,030

The Hindu Bureau
CHENNAI

The Election Commission of India (ECI) published the integrated draft electoral rolls of Tamil Nadu on Friday. According to them, the electorate stands at over 6.11 crore, a few thousand less than what it was in the draft rolls published this May.

The integrated draft rolls have been published in all the districts in the designated locations (mostly polling booths which are school buildings) and hosted in <https://www.elections.tn.gov.in>, Chief Electoral Officer Satyabrata Sahoo told reporters. Two copies would be handed over to the recognised political parties by the District Election Officers, he said. The total electorate includes 3,10,54,571 women, 3,00,68,610 men and 8,016 of the third gender.

The Sholinganallur Assembly constituency in Chengalpattu district has the highest number of vo-



Chief Electoral Officer Satyabrata Sahoo releasing the integrated draft electoral rolls for Tamil Nadu on Friday. SPECIAL ARRANGEMENT

ters in the State with 6,52,065, including 3,25,279 women and 110 from the third gender. Kilvelur in Nagapattinam district has the lowest number of voters with 1,69,030, including 85,591 women and three of the third gender.

According to the integrated draft rolls, a total of 137 persons are over 120 years of age, 381 are between 110 and 119 years of age, and 15,788 are between 100 and 109 years of age. Over 2.12 lakh are in the 90-99 age group, 12.81 lakh are in the 80-89 age

group and 39.12 lakh are in the 70-79 age group.

Special campaigns would be conducted on November 4, 5, 18 and 19 at the designated locations (generally the polling booths).

Forms for inclusion/deletion/linking of Aadhaar with EPIC/modification/transposition of entries in the electoral rolls would be available at these locations. Filled-in forms can be submitted there.

Asked about the issue of double entry in the rolls, Mr. Sahoo said a software would detect such entries

and a registered post would be sent to verify the residence of such persons. "If there is no reply, the booth-level officer will give a report based on which action would be taken," he said. Mr. Sahoo said the number of polling booths had been increased approximately by 100.

To a question, Mr. Sahoo said that of the total 6.11 crore voters, the first-time voters or those in the 18-19 age group were 3.94 lakh, including 2.18 lakh men and 1.75 lakh women. Those who completed 17 years of age and would be completing 18 years on January 1, April 1, July 1, and October 1, 2024 could apply in Form-6 for inclusion, and their names would be included soon after they turned 18.

In January this year, the total electorate of the State was 6.20 crore when the annual final rolls were published and the number fell by eight lakh and stood at more than 6.12 crore when the draft rolls were published in May this year.

Li Keqiang, China's reformist Premier sidelined by Xi, dies

The Communist Party in a statement praised Li as 'an excellent CPC member, a time-tested and loyal communist soldier and an outstanding proletarian revolutionist'; Li represented loosely a politics that spoke to continued momentum in China's reform and opening up, and a firm focus on the economy, including the private sector, which had emerged as a lynchpin of China's growth and jobs

Ananth Krishnan

Li Keqiang, who served as China's Premier for a decade and was seen by many in his country as one of the last remaining reformist politicians in an era of increasing political centralisation, died early on Friday after a sudden heart attack. He was 68.

News of the death of Li, who went into early retirement at last November's Communist Party congress following a clean sweep of top party posts by allies of President Xi Jinping, brought an outpouring of grief on Chinese social media.

The Communist Party in a statement praised Li as "an excellent CPC member, a time-tested and loyal communist soldier and an outstanding proletarian revolutionist, statesman and leader of the Party and the state." "After retiring from his leadership position, he firmly embraced and supported the leadership of the CPC Central Committee with Comrade Xi Jin-

ing at its core, cared about the development of the Party and the country's cause, and firmly supported the construction of clean government and the fight against corruption," said an official statement.

If Li had during his two terms as Premier been careful to publicly support Mr. Xi, in truth, he had little choice but to do so, given Mr. Xi's rapid accumulation of power over the party and military. Even the official obituary statement from the CPC made it a point to mention Mr. Xi's name six times, and cited among Li's achievements his "adherence" to Mr. Xi's leadership.

Different styles

Yet, differences between the two leaders – from their political styles to policy preferences – were stark and something of an open secret in Beijing. Li was the pragmatic technocrat, while Mr. Xi brought back the focus on ideology. Li represented loosely a politics that spoke to continued momentum in Chi-

na's reform and opening up, and a firm focus on the economy, including the private sector, which had emerged as a lynchpin of China's growth, jobs and innovation. In his last press conference as Premier in March 2022, Li declared that reform and opening were irreversible like "the Yellow river and Yangtze river which will not flow backward", comments that struck a chord with the public at the time, three years into harsh COVID-19 restrictions, closed borders and regulatory interventions that had dampened economic sentiment. In 2020, when China's State media was celebrating Mr. Xi for eliminating extreme poverty, Li drew praise for reminding, during his annual press conference, that there were 600 million Chinese earning less than \$140 a month.

Neither was it lost on the Chinese public when Mr. Xi was calling for continued pandemic restrictions – until rare public protests in November last year brought a sudden end



Differing stance: Li Keqiang's sudden passing, so soon into his retirement, comes at a politically sensitive time for the party. AP

to them – Li chose to appear in public without wearing a face mask and convened an online meeting of 1 lakh officials to emphasise the importance of jobs and growth amid mass lockdowns. The *People's Daily* chose to blank out coverage of the meeting from its front page, relegating it to a short paragraph in the inside pages.

Economics and law

Born in a rural county of eastern Anhui province, Li joined the Communist Party at the age of 21, in the last year of the Cultural Re-

volution (1966-76). He was among the first students admitted to the elite Peking University when students were allowed to return to campuses after being "sent down to the countryside" by Mao. He graduated with a degree in law, and was the first Chinese Premier with a background in economics and law. The intellectual milieu of Peking University in the 1980s to some degree explained his more open politics even within the straitjacket of CPC politics. Some of his classmates would become advocates

for political and legal liberalisation. Li, however, trod a more conservative path and jumped headlong into party politics through the Communist Youth League, where his association with Mr. Xi's predecessor Hu Jintao began. After stints in the provinces garnered him a popular reputation especially among business leaders – one blot was a major crisis in Henan where his government covered up a scandal of mass HIV transmission through a blood donation programme – Li was initially put forward as the man to replace Mr. Hu. However, Mr. Xi emerged ahead of him at the 2007 Party congress, surprising observers as he was appointed Vice President and the anointed successor for 2012 in Li's stead.

"In 2012, the party wanted a strong leader, and Li was not seen to be that kind of persona," observed Ashok Kantha, who was India's Ambassador to China between 2014 and 2016. "Yes, there were achievements in the Jiang

Zemin and Hu Jintao years, but also a feeling that corruption had gone out of control and there was drift in the system. That was the context in which Xi took over. Perhaps they didn't bargain for the ruthlessness that Xi has later shown."

Focus on economy

Taking over as Premier in 2013, Li did not rock the political boat and focused on running the economy. Yet even in economic decision-making, his power was quickly diminished as Mr. Xi ended the "collective leadership" system. Unlike his predecessors Zhu Rongji and Wen Jiabao, Li had little say in economic policy-making which was moved out from the State Council, or government, to one of several new Party Committees headed by Mr. Xi.

Li was praised by the leadership for choosing to make the "sacrifice" and retire in November last year although he was eligible for another five-year term on the Politburo

Standing Committee. His sudden passing, so soon into his retirement, comes at a politically sensitive time for the party, shortly after the shocking removals of the Foreign Minister and Defence Minister, both of whom were appointed by Mr. Xi, barely a few months into their terms. As with the passing of former President Jiang last year, the party will likely hold a big enough state funeral to give the public space to grieve.

The passing of popular political leaders has, in Chinese politics, often become a rallying point for those displeased with current policies, most notably in 1989. On Friday, posts on social media in China were being carefully monitored and restricted, and some videos of Li were being deleted although posting links to official announcements of his death was being permitted.

Li is survived by his wife Cheng Hong, a well-known academic in China and professor of English literature, and one daughter.

80% of India's urban population has access to high-speed Internet: PM

Internet connectivity and speed increases ease of living, says Modi and praises operators for rapid rollout of 5G services across the country; says India is moving towards becoming a leader in 6G

The Hindu Bureau
NEW DELHI

Prime Minister Narendra Modi on Friday hailed telecom operators' progress in spreading 5G coverage in urban centres, saying that over 80% of India's urban population now had access to the high-speed technology.

"Within a year of 5G launch, about 4 lakh 5G base stations have been built in India," he said at the seventh India Mobile Congress event here.

"Improving Internet connectivity and speed is not just about rankings and numbers," the Prime Minister said, after mentioning Indian networks' jump in global mobile data speed rankings. "Improving Internet connectivity and speed also increases ease of living... it becomes easier for the student to connect with his teacher online, the patient has a seamless experience while connecting to his doctor



In focus: Prime Minister Narendra Modi arriving for the India Mobile Congress in New Delhi on Friday. SHASHI SHEKHAR KASHYAP

for telemedicine [and] tourists can easily use online maps to find a location."

'Not a stain on rollout'

"We are not only rapidly expanding 5G in India, but are also moving towards becoming a leader in the field of 6G," Mr. Modi said, referring to research efforts in India to standardise the next generation of telecommunications.

In a jibe at the contro-

versy surrounding the 2G scam, he said: "What happened here during 2G, maybe the new generation will not know... 4G expanded in our period but there is not a single stain on that technology's rollout."

The Prime Minister pointed to a rise in domestic electronics manufacturing as a success, and pointed to tech giants Apple and Samsung's smartphone assembly in India as an ex-

ample. He also cited Google's plans to assemble its flagship Pixel lineup in India. "Today, we are exporting about ₹2 lakh crore in electronics manufacturing," he remarked.

Union Minister of Electronics and Information Technology Ashwini Vaishnaw told reporters on the sidelines of the event that even the component manufacturing ecosystem was taking shape in India, with camera modules for Apple coming together in India soon. "The value addition is increasing rapidly," Mr. Vaishnaw said, citing the fact that Google designs semiconductor chips that go into its Pixel smartphones in India.

Mr. Modi made a pitch to secure electronics supply chains, a likely reference to Chinese dominance in electronics assembly and manufacturing. "It is... necessary to discuss how we can make the democratic societies of the world safe from troublemakers," he warned.