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समाचार पत्रों से चयनित अंश
Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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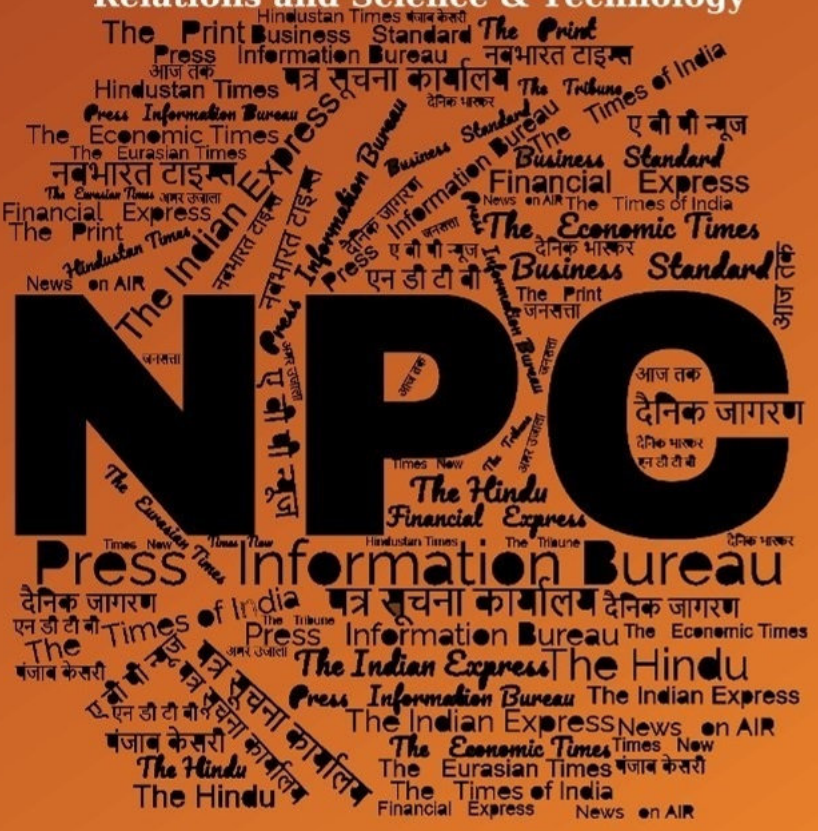

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Defence News

भारत को बिना शर्त एसयू-57 लड़ाकू विमान रूस देगा

Source: Dainik Jagran, Dt. 20 Nov 2025

जागरण न्यूज नेटवर्क, नई दिल्ली: भारत की भविष्य की जरूरतों को पूरा करने के लिए रूस पांचवीं पीढ़ी के अपने एसयू-57 स्टेल्थ फाइटर जेट्स देने को तैयार हो गया है। वह इन लड़ाकू विमानों की तकनीक भी बिना शर्त ट्रांसफर करेगा। रूस का कहना है कि उसे इससे संबंधित भारत की कोई भी मांग पूरी तरह स्वीकार्य है। रूसी एसयू-57 लड़ाकू विमानों को अमेरिकी एफ-35 का तोड़ माना जाता है। रूस से यह आश्वासन ऐसे समय आया है जब भारत के विदेश मंत्री एस. जयशंकर ने पिछले दिनों मास्को में राष्ट्रपति व्लादिमीर पुतिन से मुलाकात की है। पुतिन अगले महीने भारत आने वाले हैं।

भारत को एसयू-57 तकनीक मिलने का अर्थ

भारत को एसयू-57 तकनीक मिलने का मतलब है कि भारत भविष्य में अपना एसयू-57 वर्जन बना सकता है। तकनीक ट्रांसफर करना सामान्य बात नहीं है। खासकर लड़ाकू विमान जैसे हाई-एंड डिफेंस सिस्टम में। दरअसल, लड़ाकू विमानों की तकनीक दुनिया में सबसे गोपनीय और संवेदनशील होती है। लड़ाकू विमान सिर्फ एक मशीन नहीं, बल्कि किसी भी देश की सैन्य ताकत, इंजीनियरिंग क्षमता और रणनीतिक बढ़त का प्रतीक है।

रोस्टेक के सीईओ सर्गेई चेमेजोव ● एएनआइ

भारत में एसयू-57 के उत्पादन को तैयार: दुबई एयर शो, 2025 से इतर समाचार एजेंसी एएनआइ से बातचीत में रूस की सरकारी रक्षा कंपनी रोस्टेक के सीईओ सर्गेई चेमेजोव ने कहा, भारत और रूस कई वर्षों से भरोसेमंद रक्षा साझीदार रहे हैं। भारत पर जब अंतरराष्ट्रीय प्रतिबंध लगे थे, तब भी रूस ने भारत की सुरक्षा सुनिश्चित करने के लिए हथियारों की आपूर्ति जारी रखी थी। कहा, आज भी हमारी वही नीति है। भारत को उसकी जरूरत के मुताबिक हर तरह का सैन्य उपकरणों का आपूर्ति कर रहे हैं एवं भविष्य के सहयोग को और मजबूत कर रहे हैं। रूस की हथियार निर्यात कंपनी रोसोबोरोनएक्सपोर्ट के एक वरिष्ठ प्रतिनिधि ने कहा कि अगर भारत चाहे तो एसयू-57 को भारत में ही बनाया जा सकता है।

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ऑपरेशन सिंदूर के बाद चीन ने किया था भारत के लड़ाकू विमानों के विरुद्ध प्रचार

Source: Dainik Jagran, Dt. 20 Nov 2025

वाशिंगटन, आइएएनएस : अमेरिकी कांग्रेस की ओर से गठित परामर्श निकाय 'यूएस-चाइना इकोनमिक एंड सिक्यूरिटी रिव्यू कमीशन' ने मंगलवार को चीन पर आपरेशन सिंदूर के बाद दुष्प्रचार अभियान चलाने का आरोप लगाया। आयोग ने कहा कि चीन ने अपनी ग्रे-जोन गतिविधियों के तहत फर्जी इंटरनेट मीडिया अकाउंट्स का इस्तेमाल करके विमानों के कथित "मलबे" की एआइ तस्वीरों का प्रचारित किया था। आयोग ने कांग्रेस को सौंपी अपनी वार्षिक रिपोर्ट में कहा, "चीन ने अपने जे-35 विमानों के पक्ष में

फ्रांसीसी राफेल विमानों की बिक्री में बाधा डालने के लिए एक दुष्प्रचार अभियान शुरू किया था, जिसमें फर्जी इंटरनेट मीडिया अकाउंट्स का इस्तेमाल करके चीन के हथियारों से नष्ट हुए विमानों के कथित मलबे की एआइ तस्वीरें प्रचारित की गई थीं।" चीन ने मई में भारत-पाकिस्तान संघर्ष का "अवसरवादी" तरीके से अपने हथियारों की परिष्कृत तकनीक का प्रचार करने के लिए इस्तेमाल किया। भारत-चीन संबंधों के बारे में आयोग का कहना है कि सीमा मुद्दे के समाधान पर दोनों पक्षों के बीच एक "असमानता" है। वह अपने मूल हितों का त्याग किए बिना सीमा मुद्दे को अलग रखकर व्यापार और अन्य क्षेत्रों में द्विपक्षीय सहयोग के द्वार खोलने की उम्मीद करता है। जबकि भारत सीमा मुद्दों का स्थायी समाधान चाहता है। दोनों देशों के बीच द्विपक्षीय आर्थिक सहयोग या सीमा समाधान समझौतों की वर्तमान शर्तें अधिकांशतः वैचारिक हैं।

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China ran disinformation campaign against Rafale after Operation Sindoor: US report

Source: The Indian Express, Dt. 20 Nov 2025

FOLLOWING THE India-Pakistan border conflict in May in the wake of Pahalgam terror attacks, China initiated a disinformation campaign to hinder the sale of French Rafale aircraft in favour of its own J-35s, using fake social media accounts to propagate AI images of supposed “debris” from the planes that China’s weaponry destroyed, according to the latest US-China Economic and Security Review Commission report that was submitted to the US Congress on Wednesday.

The annual report offers the US Congress a bipartisan approach toward China policy. The report this year, which offers 28 recommendations across technology, economics and trade, and national security, also examines how China has used industrial policy to position itself to attain first mover advantage in the technologies of the future.

“President Xi (Jinping) has also been explicit that he wants to make the world more dependent on China,” says the opening statement by the commission’s Chair Reva Price. “We can expect that China will continue massive, distortionary policy support for strategic sectors.” However, on China’s role in the May 7-10 military hostilities between India and Pakistan, the report says that the clash “drew global attention as Pakistan’s military relied upon Chinese weaponry and reportedly leveraged Chinese intelligence”.

“The Indian Army claimed China helped Pakistan with ‘live inputs’ on Indian military positions throughout the crisis and effectively used the conflict as a testing ground for its own military capabilities; Pakistan denied these allegations, and China neither confirmed nor denied its degree of involvement.”

It also notes how China expanded its military cooperation with Pakistan in 2025, compounding its own security tensions with India. “While characterisation of this conflict as a ‘proxy war’ may overstate China’s role as an instigator, Beijing opportunistically leveraged the conflict to test and advertise the sophistication of its weapons, useful in the contexts of its ongoing border tensions with India and its expanding defence industry goals,” it says.

“This clash was the first time China’s modern weapons systems, including the HQ-9 air defense system, PL-15 air-to-air missiles, and J-10 fighter aircraft were used in active combat, serving as a real-world field experiment,” it says. “China reportedly offered to sell 40 J-35 fifth-generation fighter jets, KJ-500 aircraft, and ballistic missile defence systems to Pakistan in June 2025 (post the conflict).”

In the weeks after the conflict, Chinese embassies hailed the “successes” of its systems in the India-Pakistan clash, seeking to bolster weapons sales, the report notes. It states “according to French intelligence, China initiated a disinformation campaign to hinder sales of French Rafales in favour of its own J-35s, and used fake social media accounts to propagate AI and video game images of supposed ‘debris’ from the planes China’s weaponry destroyed”. Consequently, the report says, Chinese Embassy officials convinced Indonesia to halt a purchase of Rafale jets already in process.

It also weighed in on how the Dalai Lama’s succession is poised to become a dispute between China and those committed to back the Tibetan-selected successor, including the US. “There will

likely be two successors — one selected by the Tibetan Buddhist Gaden Phodrang Trust and one by the Chinese government," it says.

When Prime Minister Narendra Modi wished the 14th Dalai Lama on his birthday and a senior Indian Minister affirmed the Dalai Lama's trust has sole authority to identify the 15th Dalai Lama, China made official complaints to the Indian government, urging it to avoid support for the 14th Dalai Lama's "anti-China separatist activities under the guise of religion". The search for and selection of the 15th Dalai Lama will have implications on the international stage, says the report.

https://indianexpress.com/article/india/china-ran-disinformation-campaign-against-rafale-after-operation-sindoor-us-report-10375267/

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HAL signs deal with German company for chopper safety system

Source: Hindustan Times, Dt. 20 Nov 2025

Hindustan Aeronautics Limited (HAL) on Wednesday signed a contract with a German firm for the transfer of design technology for an obstacle avoidance system for helicopters, the state-run plane maker said. It signed the contract with Hensoldt Sensors at the Dubai airshow. The deal also covers transfer of intellectual property rights including manufacturing and repair capability for the obstacle avoidance system and degraded visual environment for helicopter platforms. The contract was signed by HAL-Korwa executive director Ravi Prakash and Hensoldt head of sales (airborne solutions) Eugen Maier.

"This partnership will augment the indigenous ecosystem for the development of technology for obstacle collision avoidance systems, including degraded visual environment systems in India. This agreement will ensure that India develops and owns a LiDAR-based helicopter obstacle avoidance system (OAS) — an advanced capability that only a few countries have mastered. HAL and Hensoldt will collaborate on the design, manufacture, integration, and testing of this system, with the potential for export," HAL chief DK Sunil said.

The OAS solution provides pilots with real-time situational awareness, superior navigation cues, and advanced synthetic vision, significantly reducing the risk of controlled flight into terrain (CFIT) and enabling missions in the harshest operational environments, including "brownout," "whiteout," and degraded visual conditions, the German firm said. The system will first equip HAL's light combat helicopter (LCH), followed by integration on the advanced light helicopter (ALH) and other Indian armed forces platforms, it added.

"This partnership goes far beyond a conventional supply arrangement. It represents a strategic investment in India's defence industrial ecosystem through genuine technology transfer, shared IP, and local manufacturing. By enabling HAL to produce, integrate, and eventually export this advanced OAS technology, we are directly supporting Make in India and Atmanirbhar Bharat vision," said Andleeb Shadman, head of Hensoldt business development for India region.

https://www.hindustantimes.com/india-news/hal-signs-deal-with-german-company-for-chopper-safety-system-101763578388134.html

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Indian Army secures IPR for new coat combat (digital-print)

Source: The Pioneer, Dt. 20 Nov 2025

PIONEER NEWS SERVICE
New Delhi

The Indian Army has secured the intellectual property rights for a new coat combat (digital print) — a three-layered garment that integrates combat functionality with comfort and protection, according to officials.

The 'New Coat Combat' has been designed and developed by the National Institute of Fashion Technology (NIFT), Delhi, as a consultancy project under the aegis of the Army Design Bureau, the defence ministry said on Wednesday.

Following the unveiling of the new combat uniform (digital print), the Army introduced the new coat combat (digital print) in January 2025, marking another milestone in its ongoing journey towards modernisation, indigenisation, and enhanced soldier comfort, it said in a statement.

The three-layered garment incorporates advanced technical textiles and features an ergonomic design tailored to improve comfort, mobility, and operational efficiency in diverse climatic and tactical conditions, the officials said.

"The Indian Army has successfully registered the design of the new coat combat (digital print) with the Controller General of Patents, Designs and Trademarks, Kolkata, under Design Application No. 449667-001, dated February 27, 2025 and published in the Official Journal of the Patent Office on October 7, 2025," it said.

With this registration, the exclusive intellectual property rights (IPR) for both the design and camouflage pattern "rest solely" with the Indian Army, the ministry said.

The registration establishes the Army's sole ownership and legal protection against unauthorised manufacturing, reproduction, or commercial use by any non-authorised entity, it added.

"Any infringement of these rights will attract legal consequences, including injunctions and claims for damages, as per the provisions of the Designs Act, 2000 and Designs Rules, 2001 and Patents Act, 1970," the statement said.

The new coat combat ensemble includes an outer layer, an inner jacket and a thermal layer.

The outer layer consists of digitally printed camouflage coat designed for operational durability and concealment in varied terrains.

The inner jacket is an insulated mid-layer using lightweight, breathable material, providing warmth without restricting movement; while the thermal layer is a base layer ensuring optimal thermal regulation and moisture control in extreme weather, it said.

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Bengaluru hosts aerospace medicine conference

Source: The Pioneer, Dt. 20 Nov 2025

PIONEER NEWS SERVICE
New Delhi

A two-day conference highlighting the innovative approaches by aerospace medicine practitioners in balancing safety and optimal performance requirements of aviators is set to begin in Bengaluru on November 20, the defence ministry said on Wednesday.

The Indian Society of Aerospace Medicine (ISAM) is organising its 64th annual conference at the Institute of Aerospace Medicine (IAM), which will be inaugurated by Indian Air Force (IAF) chief Air Chief Marshal A P Singh, it said.

"The current edition of the conference is themed on 'Innovations in Aerospace Medicine: Infinite Possibilities', which highlights the innovative approaches by aerospace medicine practitioners in balancing safety and optimal performance requirements of aviators," the ministry said in a statement.

THE CONFERENCE WILL HOST NEARLY 300 DELEGATES FROM ACROSS THE COUNTRY AND ABROAD

The conference will host nearly 300 delegates from across the country and abroad.

Participants also include researchers from associated institutions, including prominent scientists from the Defence Research and Development Organisation (DRDO) laboratories and the Indian Space Research Organisation (ISRO).

Key highlights will include the Air Marshal Subroto Mukherjee Memorial Oration to be delivered by Anchit Gupta, an avid historian, and the Air Vice Marshal M M Srinagesh Memorial Oration to be delivered by Air Vice Marshal Deepak Gaur (retd).

Another significant oration is the 'Jemi Hormusji Framji Manekshaw Panel', featuring guest lectures from notable experts, including Awais Ahmed, CEO and Founder of Pixxel Aerospace Technologies, and Captain Dhruv Rebbapragada, Chief Flight Safety Officer, IndiGo Airlines, it said.

With over 100 scientific papers to be presented at the conference, the delegates can look forward to a robust agenda-filled scientific discussions, presentations and networking opportunities that aim to shape the future of aerospace medicine research and policy in the country, it said.

Established in 1952, ISAM is the only registered society dedicated to promoting the knowledge and practice of aerospace medicine in India.

The premier institute deals with military and civil aerospace medicine, including the human aspects of the spaceflight programme of the country.

With an aim to advance research, foster knowledge exchange and seek solutions to aeromedical challenges, ISAM has been conducting its annual scientific conference since 1954, it said.

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Science & Technology News

इसरो ने किया क्रायोजेनिक इंजन का परीक्षण

Source: Punjab Kesari, Dt. 20 Nov 2025

बेंगलुरु, (पंजाब केसरी): भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) ने बुधवार को घोषणा की कि उसने सीई20 क्रायोजेनिक इंजन के 'बूट-स्ट्रैप मोड स्टार्ट' परीक्षण का सफलतापूर्वक प्रदर्शन किया है, जो प्रक्षेपण यान मार्क 3 (एलवीएम 3) रॉकेट के ऊपरी हिस्से को शक्ति प्रदान करता है। यह परीक्षण 7 नवंबर को महेंद्रगिरि स्थित इसरो प्रोपल्शन कॉम्प्लेक्स स्थित उच्च-ऊंचाई परीक्षण (एचएटी) केंद्र में निर्वात परिस्थितियों में 10 सेकंड के लिए किया गया। अंतरिक्ष एजेंसी के अनुसार, सीई20 क्रायोजेनिक इंजन उड़ान के दौरान चालू होने पर 19 से 22 टन के बीच के 'थ्रस्ट' (ऊपर की ओर ले जाने के) स्तर पर संचालन के लिए पहले से ही सक्षम है और इसे गगनयान मिशन में उपयोग के लिए मंजूरी दी गई है। अंतरिक्ष एजेंसी ने कहा कि वर्तमान प्रारूप के साथ, प्रत्येक रीस्टार्ट के लिए बाहरी सहायता प्रणालियों की आवश्यकता होती है, जिससे यान की पेलोड क्षमता कम हो जाती है। अंतरिक्ष एजेंसी ने कहा, ''इसलिए, बूट-स्ट्रैप मोड स्टार्ट प्राप्त करना - जहां इंजन बाहरी सहायता के बिना स्थिर संचालन के लिए तैयार होता है- आवश्यक है।'

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ISRO tests bootstrap mode start on CE20 cryogenic engine

Source: The Hindu, Dt. 20 Nov 2025

The Indian Space Research Organisation (ISRO) has successfully demonstrated the boot-strap mode start test on the CE20 Cryogenic engine which powers the upper stage of the Launch Vehicle Mark -3 (LVM3) rocket.

The test on the CE20 cryogenic engine, which was successfully conducted under vacuum conditions in the High-Altitude Test (HAT) facility at ISRO Propulsion Complex, Mahendragiri on November 7, for a duration of 10 seconds is an important development towards enhancing the restart capability and mission flexibility of future LVM3 flights.

Though the CE20 cryogenic engine, powering the LVM3 upper stage, is already qualified for operation at thrust levels ranging from 19 to 22 tonnes in flight with a single start, and also for the Gaganyaan missions, during nominal operation, the engine ignition is initiated under tank head conditions, followed by the start of turbo pumps using a stored gas start-up system.

“For future missions, multiple in-flight restarts of the CE20 engine will be required for mission flexibility towards multi-orbit missions. However, with the present configuration, each restart demands an additional start-up gas bottle and associated systems, leading to a reduction in vehicle payload capability. Hence, achieving boot-strap mode start — where the engine builds up to steady operation without external start-up assistance — is essential,” ISRO stated.

ISRO successfully demonstrated boot-strap mode start test on the CE20 cryogenic engine in the High-Altitude Test (HAT) facility at ISRO Propulsion Complex, Mahendragiri on November 7, 2025.

During the test, a multi-element igniter was employed in both the thrust chamber and gas generator to facilitate boot-strap starting. “In this test, following the ignition of the thrust chamber, the gas generator was ignited under tank head conditions, and the turbo pumps were started without the use of the start-up system. Subsequently, boot-strap mode build-up and steady-state operation of the engine were successfully demonstrated,” ISRO stated. The space agency said that with this achievement, ISRO has successfully demonstrated boot-strap mode starting of a gas-generator cycle cryogenic engine without any auxiliary start-up system, perhaps for the first time in the world.

https://www.thehindu.com/sci-tech/science/isro-successfully-demonstrates-boot-strap-mode-start-test-on-ce20-cryogenic-engine-enhances-restart-capability/article70298435.ece

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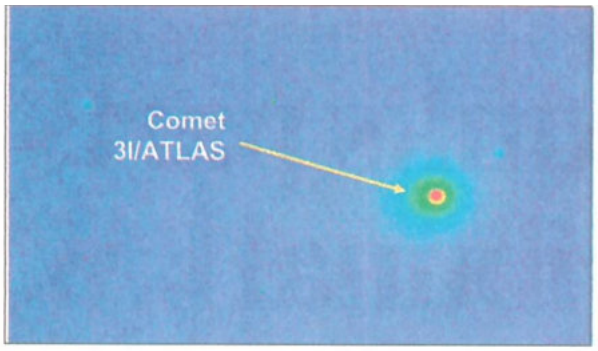
ISRO scientists sight rare comet 3I/ATLAS

Source: Hindustan Times, Dt. 20 Nov 2025



Scientists from Physical Research Laboratory (PRL), Ahmedabad, observed the interstellar comet 3I/ATLAS currently on its way out of the inner solar system after the perihelion (closest to the Sun) passage, Isro said on Wednesday. According to Nasa, comet 3I/ATLAS is the third known object from outside our solar system to be discovered passing through our celestial neighbourhood. Astronomers have categorised this object as interstellar because it does not follow a closed orbital path about the Sun. When the orbit of 3I/ATLAS is traced into the past, the comet clearly originates from outside our solar system, Nasa said. HTC

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Century-long data of Kodaikanal Observatory reveals clues to Sun's future

Source: Press Information Bureau, Dt. 19 Nov 2025

19th November, 2025: A new way uncovered by astronomers to reconstruct the Sun's past polar magnetic behaviour by digging into historical solar images taken at the Kodaikanal Solar Observatory (KoSO) more than 100 years ago provide clues to it's future.

For over a century, scientists have tried to decipher the Sun's mysterious rhythms, patterns of sunspots, flares, and magnetic storms that can affect everything from satellite operations to power grids on Earth. One of the key pieces of this solar puzzle lies in the polar magnetic fields of the Sun, which help shape each solar cycle and hold the crucial key for predicting future solar activity. As direct measurements of the polar magnetic fields of the Sun only began in the 1970s, we have very little knowledge about the polar field of the sun for the major part of the last century.

Researchers from the Aryabhatta Research Institute of Observational Sciences (ARIES), an autonomous institute under the Department of Science & Technology (DST), Govt. of India, along with the collaborators from Indian Institute of Space Science and Technology, Southwest Research Institute, Boulder, USA; Max Planck Institute for Solar System Research, Goettingen, Germany and INAF Osservatorio Astronomico di Roma, Rome, Italy found a solution to the puzzle.

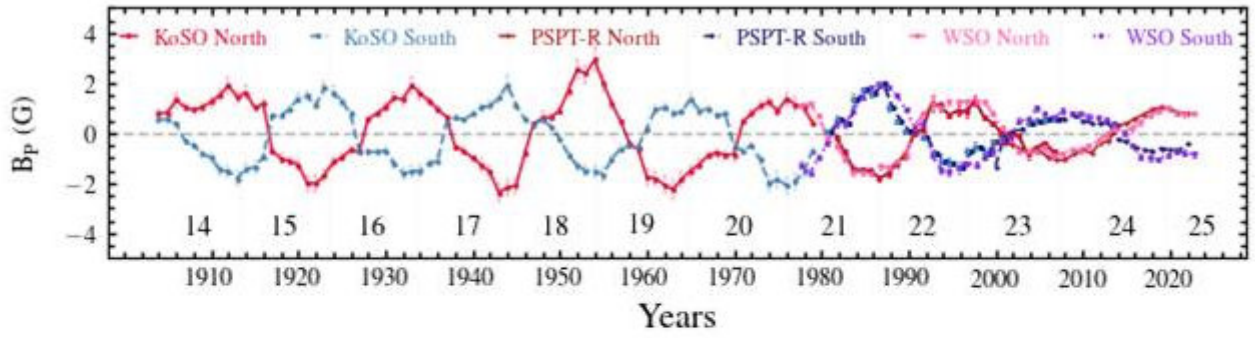

Figure: *Temporal variation of the polar magnetic fields reconstructed from KoSO (solid red for the northern hemisphere and dashed blue for the southern hemisphere) and PSPT-R (solid dark red for the northern hemisphere and dashed navy for the southern hemisphere) over the period 1904–2022. For comparison, direct polar field measurements from WSO (Wilcox Solar Observatory) are shown for the overlapping period 1976–2022, with dashed–dotted pink and dotted purple lines representing the northern and southern hemispheres, respectively.*

The team led by Dibya Kirti Mishra has uncovered a way to reconstruct the Sun's past polar magnetic behaviour by digging into historical solar images taken at the Kodaikanal Solar Observatory (KoSO) more than 100 years ago. KoSO is a field station of the Indian Institute of Astrophysics (IIA), situated in Bangalore, and it is also another autonomous institute under the Department of Science & Technology (DST), Government of India.

At KoSO, solar astronomers began observing the Sun in a special wavelength called Ca II K as early as 1904. This wavelength captures chromospheric activity of the Sun. The chromosphere of the Sun is a layer just above the visible surface, where bright patches called plages and networks form due to magnetic activity, and thus these observations hold the secret of solar magnetism for more than a century.

The KoSO archive can be considered as a big data source for AI/ML applications, with over 100 years of observations now digitized into images. By combining this data with more recent observations from Italy's Rome-PSPT, the research team used advanced feature identification algorithms to identify tiny bright features near the Sun's poles, called the polar network. This helped them to estimate the polar field of the Sun over the last century.

Researchers reported that the polar network is a powerful "proxy", a stand-in for the polar field strength. The researchers even used this reconstruction to estimate the strength of ongoing Solar Cycle 25.

Understanding the Sun's magnetic behaviour helps scientists predict solar storms, which can damage satellites, disrupt GPS, and even knock out power grids. This new approach, using historical images and an automatic algorithm, gives us a much longer and more reliable view of solar magnetism than we've ever had.

The full dataset, including the reconstructed polar field and Polar Network Index (PNI) series, is freely available to the public on GitHub and Zenodo, enabling researchers worldwide to dig deeper into the mysteries of our star.

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