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Aditya-L1 takes a selfie and images of Earth & Moon



The Indian Space Research Organisation (ISRO) on Thursday released the first images from Aditya-L1 as the spacecraft continued on the initial leg of its four-month and 1.5-million-km journey to study the Sun. A 41-second video released by the space agency showed the Earth and the Moon – a speck identified right to the Earth – as seen by the camera on-board Aditya-L1, on September 4. It also showed two of the mission's seven payloads as seen by the camera– Visible Emission Line Coronagraph (VELC) and Solar Ultraviolet Imaging Telescope (SUIT). VELC, developed by the Indian Institute of Astrophysics, aims to study the solar corona (Sun's outermost layer) and coronal mass ejections. SUIT, developed by the Inter-University Centre for Astronomy and Astrophysics, is designed to image the lower and middle layers of the Sun's atmosphere. Aditya-L1, India's first space-based mission to study the Sun's outer layers at the closest-ever range, took off from the Satish Dhawan Space Centre in Sriharikota on September 2. The spacecraft has undergone two of its five earth-bound manoeuvres that have raised it to a 282 km x 40225 km orbit. The third manoeuvre is scheduled for September 10. After spending 16 days since launch on Earth-bound orbits, Aditya-L1 will be propelled towards L1, the first Lagrange point in the Sun-Earth system, about 1.5 million km from earth. ISRO is scheduled to position the satellite on an L1 orbit, in January 2024, from where it is expected to observe the Sun continuously.

Source: <https://www.deccanherald.com/science/space/aditya-l1-takes-a-selfie-and-images-of-earth-moon-2676561>

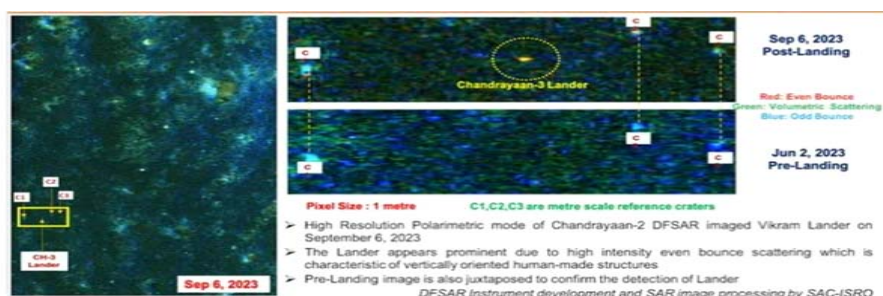
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CURRENT AFFAIRS

An assessment of space situation around Sun-Earth Lagrange Point L1

ISRO's Aditya-L1 mission, launched on September 2, 2023, is India's first mission dedicated to studying the Sun, specifically the photosphere, chromosphere, and corona of Sun. The spacecraft has commenced its journey to its final destination, the Sun-Earth Lagrange's Point 1 (L1), on September 18, 2023. Lagrange points, also known as libration points, are unique locations in space where the gravitational force of two massive bodies (like Sun and Earth) precisely equals the centripetal force required for a small object (like spacecraft) to move with them. This makes Lagrange points an excellent location for spacecrafts as orbit corrections and hence fuel requirements, needed to maintain the desired orbit, are kept at a minimum. For any combination of two orbital bodies (like Sun-Earth and Earth-Moon systems), there are five Lagrange points (L1 to L5), all in the orbital plane of the two large bodies (figure-1). The three points - L1, L2, and L3 are dynamically unstable and lie on the line through the centres of the two large bodies, while the remaining two points - L4 and L5 are stable points and each acts as the third vertex of an equilateral triangle formed with the centres of the two large bodies. L1 is particularly significant because it is situated between the two primaries (the Sun and Earth), making it an ideal location for spacecrafts because they allow continuous observation of primary bodies, continuous communication with earth and an unobstructed view of celestial bodies. These orbits are well-suited for scientific missions like Aditya which will act like a solar observatory around L1 and communication to Earth. Aditya-L1 will operate in a 'Halo orbit' around the Sun-Earth L1 point, located approximately 1.5 million kilometers from Earth. Halo orbits are periodic, three-dimensional orbits around a Lagrange Point (L1, L2 or L3) and involve an out-of-plane motion component relative to the primary bodies. The orbit is large enough in size to be continuously viewed from Earth and would appear to form a halo around the Lagrange Points (here L1 for Aditya L1). Various past missions have utilized the Sun-Earth L1 point, including the International Sun-Earth Explorer (ISEE-3), the Genesis mission, ESA's LISA Pathfinder, China's Chang'e 5 lunar orbiter, and NASA's Gravity Recovery and Interior Recovery (GRAIL) mission. These missions have contributed to our understanding of space and our ability to monitor space weather events. Several operational spacecrafts are currently stationed at the Sun-Earth L1 point as provided in table-1. These spacecraft at Sun-Earth L1 point provide vital early warnings on adverse space weather events that help protect orbiting space assets and ground based infrastructure. Despite the extremely sparse population in L1 point (figure-2) and the vast separation between them, close approach assessment for an operational spacecraft at Lagrange Point Orbit (LPO) is desirable because of the large positional uncertainty and sensitivity to other perturbative forces. OD (Orbit Determination) for LPO requires tracking data collection over an extended period of time, typically a few days. The typical OD accuracy is of the order of a few km. For Aditya L1 mission, ISRO plans to carry out such analysis periodically to ensure safety and avoid any possibility of close approaches with other neighbouring spacecrafts, with the support from NASA-JPL.

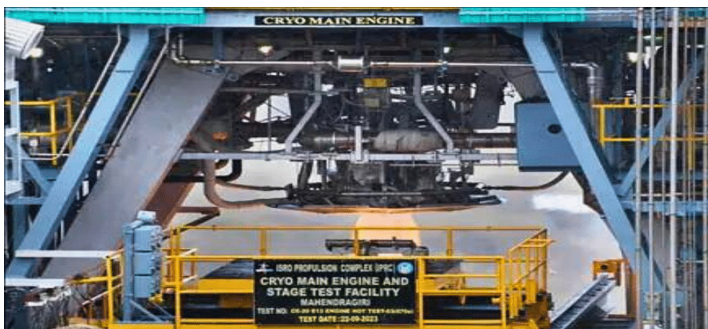


Source: https://www.isro.gov.in/Assessment_spacesituation_LagrangePoint_L1.html

CE20 E13 Engine Hot Test for the Gaganyaan & 22t Thrust Qualification

ISRO successfully completed the CE20 E13 engine hot test for the Gaganyaan qualification and 22-tonne thrust qualification. The engine developed by the Liquid Propulsion Systems Centre (LPSC), Valiamala was tested at ISRO

Propulsion Complex (IPRC), Mahendragiri on September 22, 2023. The CE20 engine is a vital component, serving as the powerhouse of the Cryogenic Upper Stage (CUS) responsible for propelling the upper stage (C25) of the LVM3 vehicle. It has demonstrated its capability by successfully operating at a thrust level of 19 tonnes in six successive LVM3 missions, including the Chandrayaan-2, Chandrayaan-3, and two commercial OneWeb missions. To enhance the payload capacity of the LVM3 vehicle, ISRO is upgrading the CE20 engine. The upper cryogenic stage is being transformed into the C32 stage with increased propellant loading capacity, and the engine is being modified to operate at a higher thrust level of 22 tonnes. To ensure the engine's readiness for critical missions, a series of ground hot tests were deemed necessary. The CE20 engine hardware referred to as E13 was selected for both Gaganyaan qualification and 22-tonne thrust level operations. The journey to achieving a 22-tonne thrust capability began with E13 HT-01, a test focused on engine tuning, successfully conducted for a 50-second duration. This initial test set the stage for the upcoming trials. E13 HT-02 marked a significant milestone, conducted on August 30, 2023, with the engine operating flawlessly for an impressive 720 seconds. This test demonstrated the engine's reliability and stability. The third hot test, E13 HT-03, was the pivotal moment in completing the CE20 engine qualification for the Gaganyaan program. On September 22, 2023, this test was conducted at the state-of-the-art test facility located at IPRC, Mahendragiri. During this test, the CE20 engine operated at the coveted 22-tonne thrust level for a duration of 670 seconds. Both the engine and the testing facility performed flawlessly, meeting all the performance parameters. The successful completion of E13 HT-03 signifies the culmination of rigorous testing and the readiness of the CE20 engine for the Gaganyaan program. With all the necessary tests completed, the CE20 engine is now poised for the demanding requirements of the Gaganyaan mission and future endeavours.



Source: <https://www.isro.gov.in/CE20E13EngineHotTest.html>

Learning from Russia-Ukraine War, Indian Army Makes Changes in its Weapon Doctrines, Acquiring Plans

The Russia-Ukraine war has stressed upon the need to have a judicious mix of guns and rockets in the Indian Army's artillery. As per top officials, we need to acquire niche technologies and more precision weapon systems, reported the Indian Express. The Russia-Ukraine war has reemphasised on the importance of having a solid firepower as a battle-winning factor, considering the fact that 80 per cent of casualties reported in the war were due to artillery fire, said another official. Russia is reportedly firing 20,000 shells in a day, meanwhile, Ukraine is firing around 5,000 shells every day. "It has been seen that the massive firepower used in the war has resulted in a lot of destruction. It has underlined the need to have judicious mix of guns and rockets in our inventory," the official said. 12 The war has also shown that battlefield transparency had a major role to play in the war by identifying, acquiring and engaging a target in real time. "The war has shown that the time between acquiring and engaging a target has gone down from five to 10 minutes in the past to one or two minutes now. There is a need to engage the target as quickly as possible before it changes course and thus the need for a more effective kill chain," the official said. According to officials, the lessons from the war between Russia and Ukraine has made Indian Army create an overhauled artillery profile. "While the western front requires more mounted gun systems and self-propelled gun

systems, the towed guns systems with a shoot-and-scoot capability would be more apt for deployment along India's mountainous northern borders," they said. "We have recently concluded four contracts with different types of 155mm guns. Several regiments have already been equipped with these guns and additional guns are being procured at a fast pace," an official added. Meanwhile, DRDO is also enhancing its missile capabilities in terms of accuracy and range for both cruise and ballistic missiles. "A lot of improvement is taking place in our ammunition systems and the focus is on precision-guided munitions. We are engaged with the academia and the industry for various projects related to 155mm shells," an official said.

Source: <https://www.deccanherald.com/india/learning-from-russia-ukraine-war-indian-army-makeschanges-in-its-weapon-doctrines-acquiring-plans-2690160>

India Planning a 175-Ship Navy Fleet to Counter China in Indian Ocean: Report

The Indian Navy has 68 warships on order at the moment, which reportedly is worth around Rs 2 lakh crore. However, the Centre wants to increase India's presence in the Indian Ocean region (IOR), and for that they will have to increase the strength of the Navy fleet. 7 The Navy currently has 132 warships, combined with 143 aircraft and 130 choppers. It has also managed to procure the Acceptance of Necessity (AoN) approval to add nine submarines, eight next-generation corvettes, two multi-purpose vessels, as well as five survey vessels. All of these will be manufactured within the country. Based on current calculations, it is expected that the Indian Navy's fleet strength will reach to around 155-160 warships by 2030, Times of India reported. "The figures are dynamic. But the aim now is to have at least 175 warships — if not 200 — by 2035 for credible strategic reach, mobility and flexibility in the IOR and beyond. There will have to be a concomitant increase in the number of fighters, aircraft, helicopters and drones," a source told the publication. It is impossible to overlook China's increasing maritime menace. In order to increase its presence in the IOR and the greater Indo-Pacific, the People's Liberation Army-Navy (PLAN) is actively looking for more overseas facilities after Djibouti on the Horn of Africa, Karachi and Gwadar in Pakistan, and now maybe Ream in Cambodia. "China has inducted as many as 150 warships over the last 10 years. Projections show the PLAN may well reach 555 warships in another five-six years. Chinese aircraft carriers will also begin to operate in the IOR by then," an officer was quoted as saying by TOI. The Indian Navy, on the other hand, has yet to receive even the preliminary approval for the building of a third aircraft carrier, which will take more than ten years to complete. Instead of a more powerful and economical 65,000-tonne carrier, the argument is now being made for a smaller 45,000-tonne "repeat order" of INS Vikrant, which is still months away from being combat-ready after being commissioned a year ago.

Source: <https://www.deccanherald.com/india/india-planning-a-175-ship-navy-fleet-to-counter-china-inindian-ocean-report-2690876>

US in Active Talks with India to Look at Producing Military Systems, Says Pentagon Official

The United States is in active talks with the Indian government to look at producing military systems in areas related to ISR and ground-based conventional warfare, a senior Pentagon official said. 6 Efforts are also on to establish a reciprocal defence procurement agreement with India, Siddharth Iyer, Director for South Asia Policy, Office of the Secretary of Defence said here on Tuesday at an event organised by the prestigious Hudson Institute. "We are in active talks with the Indian government to look at producing military systems in areas related to ISR (Intelligence, Surveillance and Reconnaissance), and then of course ground-based conventional warfare. And we'll have more to say on that as they become ripe," he said. Indian-American Iyer said the talks between India and the US to finalise the security of supply arrangement, which would streamline the ability of defence firms to procure their requirements, is making good progress. "We are also moving at an aggressive clip to establish a reciprocal defence procurement agreement, which would allow and create the conditions for US and Indian defence industries to increase and streamline market access," he said. This relationship is one of the top priorities for the Pentagon, Iyer said. "Our belief is that getting the US-India relationship right is not just necessary, it's essential to achieving our strategy in the Indo-Pacific.

There's a broad and deep commitment to making that happen," he said. "I think one of the ways in which we think about the road map is really a manifestation of (Defence) Secretary (Lloyd) Austin's commitment to accelerating India's military modernisation, and for him, putting the department on the hook to find targeted opportunities to propose to advance India's indigenous defence production capabilities," he said. The India-US defence road map, Iyer said, among other things, identifies the priority military areas where their industries should focus their collaborative efforts. It identifies some concrete mechanisms by which they can work together to integrate the supply chains. And then ultimately, it also establishes the oversight mechanism to ensure that bureaucratic logjams and regulatory barriers don't impede progress. "On some of the concrete initiatives, I think the GE engine deal has received some of the most attention in the press," Iyer said. "I think it is a testament to the significance of the deal. Certainly, it's an arrangement between private companies but the governments had to work extremely closely with each other, with industry and we had to take a really holistic view about how we think about technology security and what it means to advance our strategic interest and balance tech security and US national security requirements to make this come about," he said. The deal provides India access to jet engine technology that is some of the most sensitive military technology available to the US and what many consider to be a crown jewel, he said. "In the months ahead, I expect we are going to make progress on a number of different fronts," Iyer said.

Source: <https://www.deccanherald.com/india/us-india-military-systems-2693211>

HAL's trainer aircraft for pilots yet to get full certification after 6 months

Six months after the defence ministry signed a contract to procure HTT-40 basic trainer aircraft for the Indian Air Force, the aircraft is yet to get full airworthiness certification. The defence ministry signed a contract with Hindustan Aeronautics Limited (HAL) to obtain 70 such indigenously-made aircraft, which are yet to get certified by the Centre for Military Airworthiness and Certification (CEMILAC), according to an Indian Express report. In March, the Ministry of Defence signed a contract worth Rs 6,800 crore with HAL to procure 70 such aircraft, which was aimed at filling a gap in the availability of aircraft for the initial training of pilots. According to sources familiar with the matter, while CEMILAC, which is responsible for providing such certifications, had given provisional airworthiness certificates to the aircraft with several "critical limitations", they would need a complete certificate, for starting the production. CEMILAC is a regulatory body that comes under the Defence Research Development Organisation (DRDO). "HTT-40 has already been certified against FAR 23 (Federal Aviation Regulation)," sources in HAL told the publication. "The aircraft is yet to be certified against the ASQR (Air Staff Quality Requirements) issued by IAF. The draft "Release to Service Document" is submitted to RCMA (Regional Centre of Military Airworthiness.) This is expected to be cleared by October 2023," a source in HAL said. "All the aircraft will be supplied over a period of six years, say by 2029, though we cannot put the exact time frame for the first and the last deliveries," they added. This major gap in the availability of trainer aircraft became evident after HAL's very own HPT-32 aircraft was grounded in 2010. While the HAL will provide 70 HTT-40 aircraft over a period of six years, the delivery of ships is scheduled to commence from 2026. The HTT-40 is a turbo prop aircraft possessing good low speed handling qualities and provides better training effectiveness. The HTT-40 contains approximately 56 per cent indigenous content which will progressively increase to over 60 per cent through indigenisation of major components and subsystems.

Source: <https://www.deccanherald.com/india/hals-trainer-aircraft-for-pilots-yet-to-get-full-certification-after-6-months-2697737>

ISRO plans missions to study exoplanets, dying stars after Chandrayaan-3 success

After the Chandrayaan-3 success, a mission to look for planets with a liveable atmosphere outside the Solar System is on the radar of the Indian Space Research Organisation (ISRO), with the space agency outlining the contours of such a search. "We are conceiving a satellite called ExoWorlds, a mission for looking at exo-solar planets or planets

that are outside our solar system and orbiting other stars,” ISRO chairman S Somanath said at a lecture at the Indian National Science Academy here... “Nearly 5,000 exoplanets have been discovered so far and closer to one hundred may be habitable because of the atmosphere similar to the Earth.” Radiations coming out of a star get modified while passing through the atmosphere. In the planned exoplanet mission – yet to be approved by the Union Cabinet – the space probe will study the spectral characteristics of such lights to find out if they match the signatures generated by the Earth. Radiations coming out of a star get modified while passing through the atmosphere. In the planned exoplanet mission – yet to be approved by the Union Cabinet – the space probe will study the spectral characteristics of such lights to find out the signatures of Earth-like planets with potential for habitability. Somanath said the plans for a Mars Lander Mission too were at the conceptual stage while two payloads for the proposed Venus mission were getting ready even as ISRO was in the process of approaching the Centre for an approval for the Venus mission. Venus has an atmospheric pressure 100 times that of Earth near the surface, but the reasons for such high atmospheric pressure near the Venusian surface remains unknown. Also thick clouds enveloping Venus are full of acid and one cannot even penetrate the surface. “It is important to understand the evolution of planetary bodies like Venus. Only if you look at Venus and Mars one can actually study what effects are there in your activities on the earth that actually makes it habitable or non-habitable,” Somanath said ISRO’s deep space adventure for this year has not yet ended as the space agency is set to launch the X-ray Polarimeter Satellite or XpoSAT in December to understand mysteries associated with dying stars. He said the XPoSat mission was ready for launch in December this year. The 450 kg satellite carries two instruments to measure the polarisation of bright X-ray pulsars and to understand the mechanism of bright black hole sources. The XpoSat will measure polarisation as an additional property of cosmic X-ray sources, expanding the understanding of celestial bodies releasing such radiations. Currently, X-ray sources are measured for/ energy, time, and location.

Source: <https://www.deccanherald.com/science/space/isro-plans-missions-to-study-exoplanets-dying-stars-after-chandrayaan-3-success-2701912>

Aditya: One more feather in ISRO’s cap



Over a week after the successful launch of its lunar mission, India achieved another important milestone in scientific exploration of space, this time by launching its first space-based observatory to study the sun. The Indian Space Research Organisation’s (ISRO) Aditya-L1 lifted off aboard its heavy-duty PSLV rocket last Saturday and will be placed in a halo orbit around the Lagrange Point (L1) of the sun-earth system. A Lagrange Point is a spot in space where the nearest celestial entities’ gravitational forces cancel each other out. An object in space will remain in equilibrium at that point. It will take the solar probe vehicle four months to reach its observation point, which is about 1.5-million km from earth. A spacecraft in orbit around the L1 point gets a continuous clear view of the sun, which is not possible from the earth or even a low-earth orbit. Aditya will carry out round-the-clock imaging of the sun. Aditya-L1 is designed to study the outer layers of the sun, its chromosphere and corona, and many solar processes and phenomena about which there is still little understanding. The physical properties and dynamics of the sun are very important for us. The spacecraft is carrying seven payloads, including remote-sensing instruments. Five of them were developed by ISRO, and the other two by academic institutions in collaboration with it. The studies will provide better information on space weather conditions, solar winds, solar flares and other phenomena. A better understanding of the processes on the

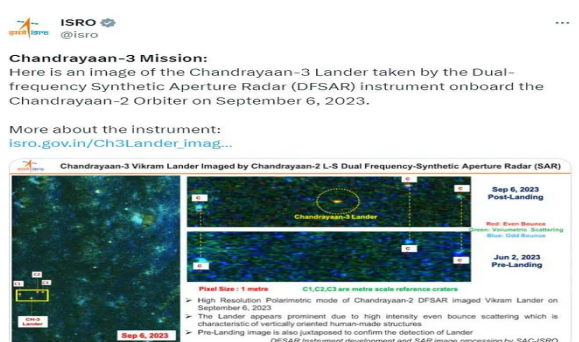
sun and its environment can help in the working of communication and navigation systems which are influenced by the sun. It can also help in the study of other stars that are farther away. Life on earth and many natural and man-made support systems that aid and support it are crucially dependent on the sun. By studying the sun, we will get to know the earth better, too. The spacecraft has been placed into orbit and has started its long journey. The successful launch of Aditya-L1 after the Chandrayaan-3 mission will further boost India's position as a space-faring nation. India's space ventures are also known for their low cost. NASA and the European Space Agency have also placed probe vehicles into solar orbit to study the sun. China and Japan have launched their spacecrafts and observatories, too. ISRO has also planned a number of other important missions, like Mangalyaan-2 to study Mars, and Gaganyaan, India's first human space mission, in 2024. There is a mission to Venus, too, on the horizon. It is a proud calendar of aspirations and achievements for the country.

Source: <https://www.deccanherald.com/opinion/editorial/aditya-one-more-feather-in-isros-cap-2674365>

TECHNOLOGY

Chandrayaan-2 orbiter Synthetic Aperture Radar images Chandrayaan-3 lander

Chandrayaan-3 lander is imaged by the Dual-frequency Synthetic Aperture Radar (DFSAR) instrument onboard the Chandrayaan-2 Orbiter on September 6, 2023. A SAR instrument transmits microwaves in a given frequency band and receives the same, scattered from the surface. Being a radar, it can image even without solar illumination. It can provide both the distance and physical characteristics of the target features. Hence, SAR is utilized for remote sensing of the Earth and other celestial bodies. DFSAR is a key scientific instrument onboard Chandrayaan-2 Orbiter. It employs microwaves in L- and S-band bands. This state-of-the-art instrument is offering the best resolution polarimetric images currently on any planetary mission. The long radar wavelength enables DFSAR to explore lunar subsurface features down to a few metres. DFSAR has been beaming high-quality data by imaging the lunar surface, for the last 4 years, with main focus on the lunar polar science.



Source: https://www.isro.gov.in/Ch3Lander_imagedby_Ch2SAR.html

Fourth earth-bound manoeuvre over, Aditya's L1 send-off on September 19

The Indian Space Research Organisation (ISRO) performed the fourth earth-bound manoeuvre with the Aditya-L1 spacecraft early on Friday, raising it to a 256 km x 121973 km orbit. The manoeuvre, performed by the ISRO Telemetry, Tracking and Command Network here at around 2.15 am, was the penultimate manoeuvre for the spacecraft in earth-bound orbits. ISRO said the spacecraft, headed to Lagrange point 1 (L1) to study the sun, will next undergo the crucial Trans-Lagrangian Point 1 Insertion (TL1I), on September 19, around 2 am. The TL1I will be a send-off for the spacecraft from earth-bound orbits and will set up its journey of around 110 days to the L1 point, about 1.5 million km from earth. Another manoeuvre will then place it on an orbit around L1. Aditya-L1, India's first space-based mission to study the sun, took off from the Satish Dhawan Space Centre in Sriharikota (SDSC-SHAR) on September 2. Its third earth-

bound manoeuvre, on September 10, had raised it to a 296 km x 71767 km orbit. "ISRO's ground stations at Mauritius, Bengaluru, SDSC-SHAR and Port Blair tracked the satellite during this operation, while a transportable terminal currently stationed in the Fiji islands for Aditya-L1 will support post-burn operations," the space agency said.

Uninterrupted observation

The spacecraft with seven payloads is expected to take about four months to reach L1, the first Lagrange point in the Sun-earth system where the balanced gravitational forces between sun and earth facilitate an uninterrupted observation of the sun. The observations will be carried out through visible and spectroscopic channels. Among the mission's objectives are studying the heating of corona (sun's outermost layer), solar eruptions, solar wind acceleration and near-earth space weather. The primary payload on board is Visible Emission Line Coronagraph developed by the Indian Institute of Astrophysics, Bengaluru. It has the capability to watch the sun as close as 1.05 times the solar radius which helps a closer study of the lower corona, the onset region of Coronal Mass Ejections.

Source: <https://www.deccanherald.com/science/space/fourth-earth-bound-manoevre-over-aditya-l1-send-off-on-september-19-2687316>

BUSINESS

Another Boost to Aatmanirbharta in Defence: DAC Approves AoN for Nine Capital Acquisition Proposals for the Armed Forces worth Rs 45,000 Crore

Procurement of Light Armoured Multipurpose Vehicles, Integrated Surveillance & Targeting System and Next Generation Survey Vessels gets a nod. Proposals for avionics upgradation of Dornier Aircraft; procurement of Dhruvastra Short Range Air-to-Surface Missile & 12 Su-30 MKI Aircraft also cleared. Time to upgrade indigenisation ambitions; We should aim for a minimum 60-65% indigenous content: Raksha Mantri Shri Rajnath Singh. Defence Acquisition Council (DAC) has accorded Acceptance of Necessity (AoN) for nine capital acquisition proposals of approx. Rs 45,000 crore. The meeting was held under the chairmanship of Raksha Mantri Shri Rajnath Singh on September 15, 2023. All these procurements will be made from Indian vendors under Buy (Indian-Indigenously Designed Developed and Manufactured (IDDM)/Buy (Indian) category which will give substantial boost to the Indian defence Industry towards achieving the goal of 'Aatmanirbhar Bharat'. To enhance protection, mobility, attack capability and increased survivability of Mechanised Forces, the DAC accorded the AoN for procurement of Light Armoured Multipurpose Vehicles (LAMV) and Integrated Surveillance and Targeting System (ISAT-S). The DAC cleared AoN for procurement of High Mobility Vehicle (HMV) Gun Towing Vehicles for swift mobilisation and deployment of Artillery Guns and Radars. The DAC also approved procurement of Next Generation Survey Vessels for the Indian Navy which will greatly enhance its capabilities in performing Hydrographic Operations. The DAC also accorded AoN for proposals of the Indian Air Force which included Avionics upgradation of Dornier Aircraft to improve the accuracy and reliability for operations. The procurement of Dhruvastra Short Range Air-to-Surface Missile as a potent Indigenous Precision Guided Weapon for indigenously built ALH Mk-IV Helicopters has been cleared by the DAC. The AoN for procurement of 12 Su-30 MKI Aircraft with associated equipment from Hindustan Aeronautics Limited (HAL) was also accorded. 4 Defence News. Defence Strategic: National/International. During the meeting, Shri Rajnath Singh stated that it is time to upgrade the ambitions towards indigenisation. "Rather than a threshold of 50% indigenous content for IDDM projects, we should aim for a minimum 60-65% indigenous content," he said. The Raksha Mantri directed the Chief of Defence Staff, Service Chiefs, Defence Secretary and DG (Acquisition) to work towards increasing the minimum indigenous content threshold in consultation with the Indian Industry.

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1957703>

BrahMos Manufacturing in Lucknow Likely to Begin from March: Rajnath Singh

Defence Minister Rajnath Singh on Saturday said the work on the BrahMos missile manufacturing site in Lucknow is likely to be completed by March next year. Singh was speaking in Gomti Nagar in Lucknow on the second day of the tour of his parliamentary constituency. 11 “The work on BrahMos missile project is also going on at a fast pace and after next FebruaryMarch, the missile manufacturing will begin on the soil of Lucknow,” the BJP leader said. Developed by an India-Russia joint venture, the BrahMos supersonic cruise missile can be launched from submarines, ships, aircraft or from land platforms. The work on the Defence Research and Development Organisation (DRDO) lab will also be completed soon, Singh said. He said there were 11 other projects in Lucknow that have been undertaken. “Though they will take some time to complete, I can say that people will see a completely different Lucknow in the next few years,” the minister said. During his visit in June, Singh had said that “everything from nuts and bolts to BrahMos missiles would be manufactured in the Uttar Pradesh Defence Industrial Corridor (UPDIC)”. “We have created a conducive environment for defence manufacturing through the defence corridors in Uttar Pradesh and Tamil Nadu. UPDIC has told me that there is a plan to acquire about 1,700 hectares of land for this corridor, of which more than 95 per cent of the land has already been acquired,” he had said. According to a statement issued by the Bharatiya Janata Party on Saturday, the minister inspected the ongoing work of the Munshi Pulia Over Bridge being built at Khurram Nagar and Polytechnic intersection in Indira Nagar Sector 25 on the second day of his visit to his Lok Sabha constituency Lucknow. He also inspected the ongoing work at Gomti Nagar railway station. Singh said, “I am satisfied with the way the work is going on at Gomti Nagar Railway Station. It will be completed by December.”

Source: <https://www.deccanherald.com/india/uttar-pradesh/brahmos-manufacturing-in-lucknow-likely-to-begin-from-march-rajnath-singh-2689424>

Private Sector may Get Rs 60,000 Crore Defence Contracts in 2024-2025

Private sector firms are likely to get defence contracts worth Rs 60,000 crore in the financial year 2024-2025, which will be around 22 per cent of the overall size of the industry, a private research 9 report showed. According to a report by ICRA, defence production by private companies is estimated to register compound annual growth of around 20 per cent in the next three years to reach Rs. 34,000 crore by FY2026. In order to reduce dependence on imports of defence equipment, the government has introduced a number of measures to promote private investments in the sector. “While the land and information & communications technology (ICT)-based segments are expected to witness increased private sector participation, the Defence public sector undertakings would continue their dominance in the naval, aerospace and armaments segments,” said Ashish Modani, Vice President and Co Group Head, ICRA. Despite a healthy 20 per cent projected annual growth in defence production by the private sector over the next three years, the government is likely to fall short of the Rs 1.75 lakh crore annual defence production target by FY2025. It is estimated to reach Rs 1.6 lakh crore by FY2026. The initiatives taken by the government include allowing 74 per cent foreign direct investment (FDI) in the sector through automatic route. It will encourage foreign original equipment manufacturer to set up manufacturing facilities in India. The other initiatives include establishment of two Defence industrial corridors, one each in Uttar Pradesh and Tamil Nadu; launch of the indigenisation portal (SRIJAN), enabling all stakeholders and private vendors to interact with each other and the Indian vendors to identify the items which are within their capabilities, thus reducing the need for import. The policy initiatives have led to reduction in procurement from foreign vendors to 32 per cent in FY2023 from 61 per cent in FY2008. India defence exports jumped to Rs 15,920 crore in FY 2022- 23 from a low Rs 1,521 crore in FY 2016-17, registering an average annual growth of 48 per cent, Modani said.

Source: <https://www.deccanherald.com/business/companies/private-sector-may-get-rs-60-000-croredefence-contracts-in-2024-2025-2700573>

AWARD



ICFAI Confers Honorary Doctorate on ISRO Chairman Somanath

The ICFAI Foundation for Higher Education, Hyderabad (Deemed University) has conferred a honorary doctorate (honoris causa) on Sri Sreedhara Panicker Somanath, Chairman of ISRO at its 13th Convocation held on 16th September 2023 at Hyderabad.

The honorary doctorate was presented by the Chancellor of the University Dr C Rangarajan and the Chief Guest Dr Jagadesh Mamidala, Chairman, UGC. Sri Somanath joined the ceremony online and accepted the honorary doctorate.

The University has proudly recounted in its citation that Sri Somanath has held the esteemed positions of Distinguished Scientist and Secretary of the Department of Space, Chairman of the Space Commission, and Chairman of ISRO. And that in his visionary leadership at the helm, the Vikram Sarabhai Space Centre (VSSC) has attained remarkable milestones. These achievements include the successful demonstration of the Crew Escape System through the Pad Abort Test (PAT), the historic launch of GSLV Mk-III M1/Chandrayaan 2, his pioneering role in advancing the upcoming Gaganyaan mission, and his instrumental involvement in the development of the Small Satellite Launch Vehicle (SSLV).

As the Director of Liquid Propulsion Systems Centre (LPSC), Sri Somanath led the team to complete the development and qualification of CE20 cryogenic engine and the C25 stage, which was successfully flown in GSLV Mk-III D1 flight. As the Associate Director (Projects) of Vikram Sarabhai Space Centre and Project Director of GSLV Mk-III Launch vehicle, the first Experimental flight of LVM3-X/CARE mission was successfully accomplished on 18th December 2014 under his leadership.

The ceremonial citation also mentioned that Sri Somanath's distinguished affiliations include being a Fellow of the Indian National Academy of Engineering (INAE), a Fellow of the Aeronautical Society of India (AeSI), a member of the Astronautical Society of India (ASI), and a valued member of the International Academy of Astronautics (IAA).

In addition to Sri Somanath's illustrious career, his scholarly contributions have extended to the publication of numerous papers in prestigious journals and seminars. These publications encompass a wide spectrum of topics, including structural dynamics and control, dynamic analysis of separation mechanisms, vibration and acoustic testing, launch vehicle design, and the management of launch services.

The large audience at the 13th Convocation, comprising graduating students, their parents, faculty and other dignitaries cheered loudly when the University announced "In a moment that resonates with the brilliance of his achievements, The ICFAI Foundation for Higher Education stands in profound admiration of his remarkable and outstanding contributions in the realm of system engineering of launch vehicle. With immense pride and reverence, ICFAI bestows upon him the Doctor of Philosophy (Honoris Causa), with all the rights and privileges pertaining there unto."

While receiving the honoris causa virtually Sri Somanath said "This Honoris Causa, the doctorate, comes at a time especially praising the achievement that we have had in the recent times with the Chandrayaan 3 mission and Aditya L1 mission. I treat it as recognition for the work done by thousands of scientists and engineers of Indian Space Research Organization and I am very happy to lead them at this momentous occasion to accomplish this very significant event in the history of the space program of our country. I once again express my heartfelt thanks to this institution.

I will make an opportunity to meet you people at the University at an appropriate time and until then thank you and wish you all great success in the future for great growth of the University and also to bring up the knowledge system of India to be known to the world."

Source: IFHE Hyderabad

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