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समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology

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THE ECONOMIC TIMES

Mon, 28 Mar 2022

L&T constructs 7-storey facility for DRDO in record 45 days

The buildings business of Larsen & Toubro has constructed a seven-storey, state-of-the-art Flight Control System (FCS) integration facility for the Defence Research and Development Organization (DRDO) in 45 days using integrated hybrid modular construction technology, the company said today. The facility was inaugurated on 17 March by Minister of Defence, Rajnath Singh. Basavaraj Bommai, chief minister of Karnataka, G. Satheesh Reddy, secretary, Department of Defence R&D & chairman, DRDO.

The concept and technical design was developed by DRDO and detailed engineering and execution by L&T, teams from IIT-Madras and IIT-Roorkee conducted design checks and provided technical support. Constructed on a total built-up area of 130,000 sq. feet, the site team had to coordinate with 21 off-site locations to integrate design, structure, architecture services.

Going forward, this hybrid construction system developed by L&T will help increase productivity, optimize resource utilization, reduce losses due to wastage and speed up pace of construction, the company said.

“We adopted IHMCT (integrated hybrid modular construction technology), used for the first time in the Indian construction industry, to substantially reduce the cycle time with a dedicated team of engineers, architects and structural designers who have worked on it to make it a success,” said whole time director and senior executive vice president (Buildings), L&T, M V Satish, adding that the company commenced the project on February 1st, 2022, and completed the superstructure including modular interiors, façade and MEP (mechanical, electrical and plumbing) on schedule on March 17th, 2022, taking just 45 days from design to delivery.

<https://economictimes.indiatimes.com/industry/indl-goods/svs/construction/lt-constructs-7-storey-facility-for-drdo-in-record-45-days/articleshow/90494561.cms>



Mon, 28 Mar 2022

DRDO successfully tests Indian army's medium range surface to air missile

The Defence Research and Development Organisation (DRDO) successfully conducted two flight tests of the Indian Army's version of the Medium Range Surface to Air Missile (MRSAM) for two different ranges on March 27, 2022.

The tests were conducted at the Integrated Test Range, Chandipur, off the coast of Odisha. The flight tests were carried out with the weapon system in deliverable configuration.

The Medium Range Surface to Air Missile system has been developed jointly by DRDO and Israel Aerospace Industries (IAI).

Launch video of today's flight test of Army version of Medium Range Surface to Air Missile off the Odisha coast.

Medium Range Surface to Air Missile (MRSAM) Test: Key Highlights

- The Medium Range Surface to Air Missile tests were carried out as a part of the live firing trials against high-speed aerial targets.
- The first test involved intercepting a medium-altitude and long-range target.
- The second test involved a low-altitude and short-range target.
- The two missiles successfully intercepted the targets and destroyed them completely, registering direct hits at both ranges.
- The missiles have been developed jointly by DRDO and Israel Aerospace Industries (IAI) for the Indian Army.
- The Medium Range Surface to Air Missile weapon system comprises a mobile launcher system, multi-function radar and other vehicles.
- The performance of the system was validated through the flight data that was captured by range instruments like electro-optical tracking systems, radars and telemetry deployed.

Union Defence Minister Rajnath Singh congratulated the Indian Army, DRDO and the industry for the successful flight tests of MRSAM-Army. He said that both the successful tests establish the capability of the weapon system in intercepting targets at critical ranges.

<https://www.jagranjosh.com/current-affairs/drdo-successfully-tests-indian-army-medium-range-surface-to-air-missile-1648459856-1>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Mon, 28 Mar 2022 2:54 PM

रक्षा मंत्रालय ने भारतीय तटरक्षक बल के लिए आठ तीव्र निगरानी पोतों के निर्माण के लिए जीएसएल के साथ 473 करोड़ रुपये के अनुबंध पर हस्ताक्षर किए

रक्षा मंत्रालय ने भारतीय तटरक्षक बल के लिए गोवा शिपयार्ड लिमिटेड (जीएसएल) के साथ 473 करोड़ रुपये की कुल परियोजना लागत पर आठ तीव्र निगरानी पोतों के निर्माण के लिए एक अनुबंध पर हस्ताक्षर किए हैं। इस अनुबंध पर 28 मार्च, 2022 को नई दिल्ली में संयुक्त सचिव (समुद्री और प्रणाली) श्री दिनेश कुमार और जीएसएल के अध्यक्ष व प्रबंध निदेशक कोमोडोर बीबी नागपाल (सेवानिवृत्त) ने हस्ताक्षर किए।

जीएसएल, खरीदें (भारतीय-आईडीडीएम) श्रेणी के तहत इन सतह प्लेटफार्मों का स्वदेशी रूप से डिजाइन, विकास और निर्माण करेगी। ये आठ उच्च गति वाले पोत उथले जल में भी काम करने और विशाल तट रेखा के साथ सुरक्षा तंत्र को बढ़ाने की क्षमता के साथ भारतीय तट पर तैनात होंगे। 'आत्मनिर्भर भारत' के उद्देश्यों को पूरा करते हुए यह स्वदेशी पोत निर्माण क्षमता को बढ़ावा देगा। साथ ही इस क्षेत्र में रोजगार के अवसरों में बढ़ोतरी करेगा।

वहीं, यह अनुबंध भारत को एक रक्षा विनिर्माण केंद्र, जो न केवल घरेलू बल्कि निर्यात बाजार की जरूरतों को भी पूरा करता है, बनाने के सरकार के संकल्प को और अधिक बढ़ावा देगा।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810580>



**Press Information Bureau
Government of India**

Ministry of Defence

Mon, 28 Mar 2022 2:54 PM

MoD signs Rs 473 crore contract with GSL for construction of eight fast patrol vessels for Indian coast guard

Ministry of Defence has signed a contract with Goa Shipyard Limited (GSL) for construction of eight Fast Patrol Vessels for Indian Coast Guard at a total project cost of Rs 473 crore. The contract was signed by Joint Secretary (Maritime & Systems) Shri Dinesh Kumar and Chairman & Managing Director, GSL Cmde BB Nagpal (Retd) in New Delhi on March 28, 2022.

These surface platforms will be indigenously designed, developed and manufactured by GSL under Buy (Indian-IDD) Category. These eight high speed vessels will be based along the coast of India with capability to operate in shallow waters and enhance the security apparatus along the vast coast line.

While meeting the objectives of 'Aatmanirbhar Bharat', this would boost the indigenous shipbuilding capability and increase employment opportunities in the sector. The contract will further boost the Government's resolve of making India a defence manufacturing hub which caters to not only the domestic needs but also the export market.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810469>



**Press Information Bureau
Government of India**

Ministry of Defence

Mon, 28 Mar 2022 2:38 PM

Indigenous Defence production

Two Positive Indigenization Lists comprising 101 and 108 items were promulgated by Department of Military Affairs (DMA)/Ministry of Defence (MoD) on 21st August, 2020 and 31st May 2021 respectively. The lists have been hosted on Ministry of Defence website to give wide visibility to the Defence Industrial base in enabling them to effectively meet requirement of the Armed Forces. Of these, 153 items are planned to be indigenized upto December, 2022. There is no stoppage on their exports.

In addition, to minimize import by DPSUs, Department of Defence Production (DDP)/ Ministry of Defence (MoD) has also notified a Positive Indigenization list of sub-systems/ assemblies/sub-assemblies/components on 27th December, 2021. The list contains 2500 items, which are

already indigenized and 351 items which will be indigenized in coming three years till December, 2024. Of these 351 items, 172 items are planned to be indigenized upto December, 2022.

Positive Indigenization List Comprises Defence equipment which will be designed, developed and manufactured over a period from 2020 to 2025, therefore, it will not be possible to assess actual saving at this juncture.

However, as per available projections, it is estimated that over approximately Rupees Five Lakh Crore worth of equipment included in both the Positive Indigenization Lists will be procured from Domestic Industry over the next five to seven years.

Government is considering adding more items for indigenous production. Time line to add more items is reviewed continuously based on the requirements of Armed Forces as well as capability of Domestic Industry.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Rakesh Sinha in Rajya Sabha on March 28, 2022.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810449>



Press Information Bureau
Government of India

Ministry of Defence

Mon, 28 Mar 2022 2:36 PM

Nodal agency to test and certify Defence equipment

As part of the annual Budget for 2022-23 an announcement has been made to set up an independent nodal umbrella body for meeting wide ranging testing and certification requirements. The nodal body is envisaged to be an autonomous body to permit, promote, hand-hold, monitor & supervise and act as a Single-Window Nodal agency to enable and regulate the existing facilities of Trial, Testing and Certification of Defence Products, besides creating new facilities.

During the last three financial years (2018-19 to 2020-21) and current financial year 2021-22 (upto February, 2022) 127 capital acquisition contracts have been signed with Indian vendors for capital procurement of Defence equipment for Armed Forces. Out of these, 55 contracts have been signed with PSUs/erstwhile OFB/DRDO and 72 contracts have been signed with Indian private vendors for capital procurement of Defence equipment for Armed Forces.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Shri Vaiko in Rajya Sabha on March 28, 2022.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810444>



**Press Information Bureau
Government of India**

Ministry of Defence

Mon, 28 Mar 2022 2:32 PM

Indigenisation in Defence manufacturing

The Government has taken several policy initiatives in the past few years under 'Make in India' program and brought in reforms to encourage indigenous design, development and manufacture of defence equipment in the country, thereby reducing import of defence equipment.

These initiatives, inter-alia, include according priority to procurement of capital items from domestic sources under Defence Acquisition Procedure (DAP)-2020; Announcement of 18 major defence platforms for industry led design & development; Notification of two 'Positive Indigenisation Lists' of total 209 items of Services and two 'Positive Indigenisation List' of total 2851 items and 107 Line Replaceable Units (LRUs) of Defence Public Sector Undertakings (DPSUs), for which there would be an embargo on the import beyond the timelines indicated against them; Simplification of Industrial licensing process with longer validity period; Liberalisation of Foreign Direct Investment (FDI) policy allowing 74% FDI under automatic route; Simplification of Make Procedure; Launch of Innovations for Defence Excellence (iDEX) scheme involving start-ups & Micro, Small and Medium Enterprises (MSMEs); Implementation of Public Procurement (Preference to Make in India) Order 2017; Launch of an indigenization portal namely SRIJAN to facilitate indigenisation by Indian Industry including MSMEs; Reforms in Offset policy with thrust on attracting investment and Transfer of Technology for Defence manufacturing by assigning higher multipliers; and Establishment of two Defence Industrial Corridors, one each in Uttar Pradesh and Tamil Nadu.

With these actions of the Government, the expenditure on defence procurement from foreign sources has reduced from 46% to 36%, thereby reduced import burden in the last 3 (three) years i.e., 2018-19 to 2020-21.

This information was given by Raksha Rajya Mantri Shri Ajay Bhatt in a written reply to Smt Roopa Ganguly in Rajya Sabha on March 28, 2022.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1810438>

Tue, 29 Mar 2022

CSIR-NAL'S multi-copter drones, HANSA-NG and SARAS MK-II aircraft

CSIR-National Aerospace Laboratories, Bangalore (CSIR-NAL) is participating in Wings India 2022 and showcasing its indigenous initiatives of civil aircrafts for flying training & commuter air connectivity.

HANSA-NG Aircraft designed and developed by CSIR-NAL is major attraction in Wings 2022. HANSA-NG was piloted by Wg. Cdr. Dilip Reddy, an Experimental Test Pilot of IAF. He has demonstrated its flying capabilities like climb, descend, manoeuvring, low level stability and short take off /landing, exciting the viewers.

HANSA-NG is one of the most advanced two seat flying trainer aircraft powered by Rotax Digital Control Engine with unique features like Just-In-Time Prepreg (JIPREG) Composite lightweight Airframe, Glass Cockpit, Bubble Canopy with wide panoramic view, electrically operated flaps, etc. HANSA NG is capable of flying up to an altitude of 10000ft with max speed of 200 km ph with more than 5 hrs endurance. HANSA -NG completed more than 55 hours of flying and will be type certified by DGCA shortly. NAL has already received more than 80 nos. of LoIs (Letter of Intents) from various flying clubs across the country and delivery is scheduled from July 2022.

The spectacular formation flying of multi-copter drones developed by NAL demonstrating live societal applications has caught attention of many. The unique features of multi-copter drone are fully autonomous BVLOS (Beyond Visual Line of sight) operation capability with max-payload capability of 20kg with endurance of about 30 mins. MoCA has given the conditional clearance and more than 60hrs of flying is completed.

NAL showcased the fully loaded 1:1 mock-up of SARASMK2 with glass cockpit, Cabin interiors including toilet, Cargo compartments and other cabin safety features. SARAS-Mk II is a 19 Seat Light Transport Aircraft with multirole capabilities like Passenger transport, Troop transport, VIP transport and Casevac (Air Ambulance). The aircraft is exclusively designed for operations from short runways, hot and high airfields, and semi-prepared runways for connecting Tier 1 & Tier 2 cities / towns. SARAS-MkII is one of the unique aircraft where operational benefits are maximized through the Pressurized Cabin, Digital antiskid braking, Autopilot with Cat-II landing, two lever engine operation, Lightweight materials etc. by keeping cost minimum. Aircraft has capability to fly up to 29000 ft at max speed of 500 kmph with range of 778 km and will be ideal candidate for promoting regional air connectivity under UDAN (UdeDesh ka Nagrik) scheme.

Shri Jitendra Jadhav Director CSIR-NAL stated that the design is carried out with extensive use of digital tools like 3D platforms, virtual reality, advanced CATIA, Digital Mock Up (DMU) and PLM (Project Life Cycle Management) techniques to reduce efforts in design and

manufacturing. He further stated that, the flight test efforts are reduced by realizing high fidelity simulator's & test facilities where most test points can be demonstrated on the ground.

NAL demonstrated functional sub scale model of High Altitude Platforms (HAP) as a futuristic path breaking technology. HAP is a solar-powered UAV capable of day & night operation at a height of 20 km for more than 90 days. HAP will be a game-changer to work as a pseudo satellite for telecommunication applications in the 5G & 6G spectrum with advantages like low data latency, high bandwidth, the flexibility of launch and low cost. HAP will be used for variety of applications like broadband communication, surveillance, earth observation, climate research etc.

The deep technology innovations like intermediate modulus grade carbon fibre, carbon prepreg, special coatings for aerospace applications, Cf-SiC composites, Just-In-time Pre-preg, thermoplastic composites, ARINC 818 IP core, etc., for various aerospace applications towards self-reliance are demonstrated.

In an interaction with the press at Wings India 2022, Dr Shekhar C Mande, Secretary, DSIR & Director General, CSIR said "New Generation aircraft called the HANSA-NG has been developed by incorporating the state-of-the-art technologies and New Generation Design features. It offers advanced digital display systems using certified instruments, two primary flight displays with built in redundant power supply. The indigenous HANSA-NG will benefit Indian Flying Clubs as well as other customer applications like bird reconnaissance at airfields, cadet training, coastal surveillance, and hobby flying. As a result of this, CSIR-NAL received firm commitments for 10 Nos from M/s Belagavi Aviation Pvt Ltd during Wings India 2022. M/s Blue ray aviation has also shown interest in acquiring 3 nos of the aircraft during the Wings India. We thank Indian Air Force Test Pilot Wg. Cdr. Dilip Reddy for his brilliant flight demonstration during the flying display sessions". The delivery of aircraft is scheduled from July 2022 with private / public industry participation.

He mentioned that "Multi-copter drones developed by NAL are being demonstrated in Wings India which are configured for Precision Agriculture, Geo exploration studies and for last mile delivery / medicine/vaccine delivery. The uniqueness of these UAVs are their higher payload capacity and longer endurance which are essential requirements for last-mile delivery, floriculture mapping, geophysical exploration studies (Underground minerals and water exploration), precision agriculture and pesticide spraying to remote places. NAL had demonstrated these capabilities to Govt. authorities all over India. Agreements were signed on Technology Transfer of these multi-copters (Quad, Hexa, Octa) to M/s Sciencetech Industries Pvt Ltd, Indore, M/s Magic Myna, Coimbatore and M/s C I Network Technologies Pvt Ltd, Ahmedabad during Wings India on 24th March 2022". These MSME's will start production in next three months' time @ rate of 100 – 200 drones per month.

DG-CSIR also stated that Armed Forces have already committed 15 Nos of SARAS MK-II for initial induction. The aircraft will be complied to FAR 23 standards and will be certified by DGCA and CEMILAC for Civil and Military use. The first flight is likely to be in June 2024 and the production will be from 2026-27 onwards. The SARAS MK-II will be a game-changer to boost air connectivity under the UDAN scheme. I am glad to state that M/s ICATT Air Ambulance Service has given two Nos of LoI for SARAS MK-II aircraft for medical version offlying ICU & Operation Theatre. SARAS MK-II will be an ideal platform for ultra-critical flying services which ICATT is a pioneer and is the largest air ambulance service in Asia.

He further stated that the development of HAP is progressing on fast track and the functional subscale model prototype is being demonstrated at Wings India 2022. The subscale model will fly by Aug 2022 to evaluate the aerodynamics, stability control and avionics & autopilot performance. The flight test data will be used to optimize final design and Proof-of-Concept (PoC) of full-scale HAP will be demonstrated at a height of 20km with 2hrs endurance by March 2024. Thereafter the full scale engineering will be taken up by NAL along with industries.

While congratulating the NAL team, he said that NAL is moving rapidly towards the commercialization of aircraft and aerospace technologies for common man use to make India self-reliant under *Atmanirbhar* Bharat mission of government.

<http://www.indiandefensenews.in/2022/03/csir-nals-multi-copter-drones-hansa-ng.html>



Tue, 29 Mar 2022

Indian army snipers get Sako TRG-42 rifles: all you need to know

The Indian Army has inducted the Sako .338 TRG-42 sniper rifles from Finland for troops deployed along the Line of Control (LoC) in Jammu and Kashmir, according to a PTI report. Most of the special forces across the world use .338 Sako TRG 42 sniping rifle and Indian Army has procured it.

"The latest sniper rifles have been inducted into the army. They are using it now," an official told PTI. The official further said that the Sako .338 TRG-42 sniper rifles have a better range, firepower, and telescopic sights than those possessed by the adversary. Amid a change in operational dynamics along the LoC, the move is to make the snipers more lethal, the report added.

The Sako rifles have reportedly replaced the .338 Lapua Magnum Scorpio TGT by Beretta, and the .50 Calibre M95 by Barrett, which were inducted in the Indian army in 2019 and 2020. These rifles – made in Italy and America – had replaced the ageing Russian Dragunov, the mainstay of Indian troops. First procured in the 1990s, the Dragunovs have slowly fallen behind contemporary sniper rifles which offer improved sights and mounts, increased accuracy, and a strike range of over 1 kilometre.

The Sako TRG-42 sniper rifle is a bolt-action sniper rifle designed and developed by the Finnish gun maker SAKO. The rifle is designed to fire powerful .338 Lapua Magnum-sized cartridges. and weighs at 6.55 kgs without ammunition. It has an effective range of 1,500 metres, the official said. The rifle is considered one of the most accurate and trustworthy weapons globally.

Sniping, A Bigger Challenge for Indian Troops

The official added that sniping has been a bigger challenge for the soldiers patrolling forward areas along the LoC and the International Border (IB) in Jammu and Kashmir. Between 2018 and

2019, there was a sudden increase in the number of sniping incidents along the LoC and IB prompting armed forces to induct better sniper rifles and train its snipers against such attacks.

The Indian Army has sanctioned a team of 10 snipers, selected from the Army's units and regimental centres for the job.

<http://www.indiandefensenews.in/2022/03/indian-army-snipers-get-sako-trg-42.html>

THE ECONOMIC TIMES

Mon, 28 Mar 2022

IAF unveils new initiative for refuelling its convoys

The Indian Air Force on Monday unveiled a new initiative with the Indian Oil Corporation Ltd under which its convoys will be to refuel at fuel stations of the state-run energy major. The defence ministry said a 'Fleet Card - Fuel on Move' has been rolled out to facilitate the refuelling of convoys belonging to the IAF. Under the existing system, the IAF procures fuel from various agencies and distributes it within the Air Force establishments. The IAF convoys have to go to Air Force stations for refuelling. With the advent of the Fleet Cards, the IAF will be able to utilise the vast network of retail fuel distributors.

"The IAF in collaboration with Indian Oil Corporation Limited (IOCL) has taken a leap forward in fuel supply chain management by introducing a 'Fleet Card - Fuel on Move' for its varied fleet of vehicles," the defence ministry said in a statement.

<https://economictimes.indiatimes.com/news/defence/iaf-unveils-new-initiative-for-refuelling-its-convoys/articleshow/90502994.cms>

Science & Technology News

SPACE.com

Tue, 29 Mar 2022

SpaceX's Ax-1 astronaut mission to the space station delayed to April 6

The first all-private crewed mission to the International Space Station won't launch this weekend after all.

Axiom Space's Ax-1 mission had been targeting a Sunday (April 3) liftoff from NASA's Kennedy Space Center (KSC) in Florida. But on Monday (March 28), NASA officially approved

Friday (April 1) through Sunday for the crucial "wet dress rehearsal" of its Artemis 1 moon mission, a practice session that's also taking place at KSC. So Ax-1 is getting pushed a few days.

"NASA, Axiom and SpaceX are now looking at no earlier than April 6 for the launch of Axiom Mission 1 (Ax-1), the first private astronaut mission to the International Space Station, pending range approval," NASA officials wrote in an update on Monday afternoon.

Ax-1 will use a SpaceX Falcon 9 rocket and Dragon capsule to send four people to the space station for an eight-day stay. Three of them are paying customers; the fourth is Axiom employee Michael López-Alegría, a former NASA astronaut who's commanding the mission.

SpaceX has another astronaut launch coming up from KSC as well — that of the Crew-4 mission, which will send three NASA astronauts and one European spaceflyer to the orbiting lab for a lengthy stint. NASA and SpaceX had been targeting April 19 for Crew-4's liftoff, and that remains the case despite the Ax-1 delay, agency officials said in today's update.

The Artemis 1 wet dress rehearsal is a series of tests that will simulate the activities and procedures leading up to launch, including fueling of the mission's huge Space Launch System (SLS) rocket. (That's what the "wet" refers to.)

Artemis 1, the first-ever flight of the SLS, will send NASA's Orion capsule on an uncrewed mission around the moon. Launch is tentatively expected in May or June; NASA will set an official target date after analyzing the results of the wet dress rehearsal and other tests.

<https://www.space.com/axiom-spacex-ax-1-mission-delay>



Mon, 28 Mar 2022

NASA issues warning of a solar storm on March 28. here's what it means

The National Aeronautics Space Agency, NASA, has issued a warning that a solar storm is expected to directly hit the planet sometime on Monday, March 28. Electromagnetic eruptions from the surface of the sun due to which a large number of particles flow, this phenomenon is called solar storm. NASA has warned that there is a risk of a strong solar storm colliding with the Earth's atmosphere in the UK. However, there is a difference of opinion between NASA and the US National Oceanic and Atmospheric Administration regarding the timing of the collision of the solar storm with Earth. NASA, predicting the collision, stated that the storm will hit at 6 am on March 28, whereas NOAA of America has estimated this incident 18 hours ago. In the areas of the UK, a bright glow can be seen during the hit. When solar winds enter the Earth's magnetic field or atmosphere, it causes the atmosphere to fluoresce, which is commonly called Aurora Polaris. In the northern hemisphere, it is also known as Northern Light.

Dr Tamitha Skov, who is popularly known as the “space weather woman”, has predicted high-frequency radio issues and reception wherever it is time of day on any side of Earth when the storm hits.

Dr Skov also mentioned that the impact of this collision may also extend to mid-latitudes. When asked whether people could see the bright light hitting the sky in a solar storm, Dr Skov said, “It could be seen in rural areas of New York.” Auroras can be seen in New Zealand and Tasmania in the South Pole as the storm will hit here in the evening. Due to sufficient darkness, the possibility of seeing light can be created in these areas.

<https://www.news18.com/news/buzz/nasa-issues-warning-of-a-solar-storm-on-march-28-heres-what-it-means-4916153.html>

