

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा  
A Daily Current Awareness Service

Vol. 44 No. 216 08 Nov 2019



रक्षा विज्ञान पुस्तकालय  
Defence Science Library  
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केन्द्र  
Defence Scientific Information & Documentation Centre  
मैटकॉफ हाऊस, दिल्ली - 110 054  
Metcalf House, Delhi - 110 054

## **Short of fighter planes, Air Force wants HAL to hasten production**

*IAF has 32 squadrons of 16-18 planes each against mandated 42 to fight simultaneous two-front war with Pakistan and China*

*By Ajay Banerjee*

New Delhi: Faced with a depleting jet fleet, the Indian Air Force (IAF) has suggested to the government that it needed a speedier 'make in India' by public sector giant Hindustan Aeronautics Limited.

Over the next 16-18 years, the IAF would require more than 300 jets made by the HAL. At the present pace of 11-12 planes per annum, the HAL would take 25-26 years to make various versions of Tejas, Tejas Mark II (called medium weight fighter) and also the advanced medium combat aircraft (AMCA), a fifth generation state-of-the-art plane. All the three planes are part of the projected 300 jets.

The IAF wanted the HAL to ramp up to make 16 planes per annum and outsource work so that the speed could be increased to 20 planes, said sources.

In case of fighter jets, the HAL is listed to make 123 Tejas planes. Of these, 20 are the initial operational clearance (IOC) version, which have been delivered to the IAF and are not part of the future count. Another 20 jets are to be made as per the final operational clearance (FOC) version with some upgrades. The remaining 83 are the Tejas Mark 1A, which will come with 43 improvements.

The IAF has told the MoD that it would need 170 (ten squadrons) Tejas Mark II (known as MWF) planes, the test flight of which is slated for 2022. Tejas weighs around 6.5 tonne and the MWF is the next class weighing around 17 tonne. The Aeronautical Development Agency and the IAF have designed it to have an engine of 98 Kilonewton (kN) thrust.

The IAF has also said that it will want two squadrons (some 35 in number) of the 25-tonne weight class AMCA to kick-off the project with same 98 kN engine. In 2017, the HAL had experimented with outsourcing and roped in Indian private companies to speed up Tejas production.

IAF Chief Air Chief Marshal Rakesh Kumar Singh Bhadauria has himself been a test pilot at the National Flight Test Centre for testing the LCA and has made it clear that his preference was for indigenous planes.

<https://www.tribuneindia.com/news/short-of-fighter-planes-air-force-wants-hal-to-hasten-production/857753.html>

## **Sarang display team to spread feathers in Nagpur sky with their Advance Dhruv Helicopters**

Sarang Helicopter Display Team - 'The Peacocks' is going to spread its feather on skies of Nagpur to enthrall the people on November 8 and 10. The Team has evolved from the Advanced Light Helicopter (ALH) Evaluation Flight, which was formed at Bengaluru in 2003, to evaluate the indigenous helicopter 'Dhruv', prior to its induction into operational service. True to its name the ALH has been a guiding beacon, standing out like the Pole star in the Indian Aviation sector. Designed and conceived by Hindustan Aeronautics Limited (HAL), the Dhruv is an all-weather, multi-mission capable helicopter. Notably, it features rigid, hinge-less rotors making it highly manoeuvrable and highly suited for military roles.

The evaluation paved way for the formation of an aerobatic display team with an aim to showcase the professionalism of the Indian Air Force and the milestones achieved by the Indian Aviation Industry. In June 2004, the Flight was converted into 151 Helicopter Unit and the fledgling team was rechristened 'Sarang', which in Sanskrit, means Peacock, the National bird of India. The synchronised aerial ballet of four brightly painted metal birds draws comparisons with the graceful Peacock! The Unit moved to Yelahanka and subsequently to Sulur, near Coimbatore in 2009, where it has been based since. It is a matter of pride for Nagpur that Gp Capt Sachin Anand Gadre, who is leading the Sarang team, is from the city.

As "Brand Ambassadors of the Indian Air Force", the Team was tasked with the onerous responsibility to build upon and showcase its display flying capabilities. The Team set the ball rolling with its maiden public display at the Asian Aerospace Airshow in Singapore in February 2004. The Team performed at Chile in June 2004. Sarang Display Team was adjudged the "Third Best Team" among all international participants, in United Arab Emirates during its performance at 'Al Ain' Grand Prix. It performed in the Indo-German Air show at Berlin, in the Air shows at Waddington, Biggin Hill, RAF Linton-on-Ouse in the United Kingdom, Farnborough Air show in 2008, Bahrain International Air show held at Al Sakhir Air Base in January 2016 and the air display at Mauritius in March 2018 on the occasion of their 50th national day. Apart from displays at International venue, Sarangs have been regularly touring the length and breadth of the country. The Team has featured regularly at Aero India Air show in Bengaluru, apart from gracing ceremonial occasions such as Air Force Day celebrations in Hindan, Graduation Parades at Air Force Academy Dundigal and the Fire Power Demonstration in Pokharan, Presidential Fleet Review, Navy Day, World Military Games, Commonwealth Youth games and ceremonial occasions concerning our sister services.

As part of IAF's public awareness campaign, the Team aims to motivate the youth of the country to take up a challenging and fulfilling career in the Indian Armed Forces. The Unit also serves as an instrument to project our national power. Amongst various operational roles the Unit has participated in several operations towards Humanitarian Assistance and Disaster Relief (HADR). The Team was at the forefront of HADR missions in Uttarakhand during the flash floods of 2013, wherein the Unit helicopters rescued close to 1000 people and inducted 12 tonnes of relief material at altitudes in excess of 10,000 feet in inclement weather and hazardous terrain. It has also been involved in providing succour to the people affected by flooding in its area of responsibility from time to time; rescue and relief operations in Chennai, Dindigul, Tirupathi and Nellore are a few worth mentioning. The devastating floods in Kerala in August 2018 tested the mettle of the team yet again.

The team deployed eight helicopters to rescue over 320 civilians and to drop over 77 tonnes of relief material in aid of the people of Kerala. While it is natural to expect daring manoeuvres and precise formation by fixed wing aircraft, it is notably difficult to do the same in helicopters owing to the unstable nature of rotary wing flying. One would find a handful of helicopter display teams across the globe and this makes the Sarang Helicopter Display Team so unique. Manoeuvring in close proximity to three other rotor discs in close proximity of ten metres, there is no room for error.

Therefore only those pilots who are selected after a rigorous selection process, make the cut from a large number of volunteers. The Team flies a 15 minute four helicopter display profile which involves 10-11 different courageous manoeuvres. Synchronised Stall Turn or Dolphin's Leap is the Signature Manoeuvre of the Team. People will experience all these manoeuvres during the air show on Nov 8 and 10. It is the Endeavour of the Team to live up to the Unit motto "Inspire through Excellence" and motivate the youth of the nation to join Indian Air Force.

<http://www.defencenews.in/article/Sarang-Display-Team-to-spread-feathers-in-Nagpur-sky-with-their-Advance-Dhruv-Helicopters-757857>

## यादे / दूसरे विश्व युद्ध में उड़ान भरने वाला लड़ाकू विमान स्पिट फायर विमान 62 साल पश्चात पहुंचा जोधपुर

- **वर्ल्ड टूर पर निकला ये विमान कोलकाता व नागपुर होते हुए जोधपुर पहुंचा**
- **29 देशों के 100 से ज्यादा प्रमुख एयरबेस पर दो पायलट लेकर जा रहे**

**जोधपुर:** सूर्यनगरी के आसमान में गुरुवार दोपहर एक बार फिर द्वितीय विश्व युद्ध में भाग ले चुका रॉयल एयरफोर्स का लड़ाकू विमान सिल्वर स्पिट फायर मंडराया। कुछ ही देर बाद ये विमान आसमां से सीधे 87 साल पुराने जोधपुर एयरबेस पर लैंड हुआ। जोधपुर के लिए एविएशन में ऐतिहासिक लम्हा था, ये विमान 62 साल बाद यहां आया। ये कोलकाता और नागपुर होते हुए जोधपुर आया है। सुपरमरीन स्पिट फायर विमान को जेट युग तक अब तक का सबसे बेहतरीन लड़ाकू विमान माना जाता है और यह रॉयल इंडियन एयरफोर्स का हिस्सा था।

विमान के लैंड करने के बाद जोधपुर एयरफोर्स स्टेशन के एओसी एयर कम्डोर फिलिप थॉमस तथा पूर्व नरेश गजसिंह ने अगवानी की और इंग्लैंड के पायलट स्टीव ब्रुकव मैट जोन्स का स्वागत किया गया। यह विमान 8 नवंबर को जोधपुर से उड़ान भरेगा। वर्ल्ड टूर पर निकला यह विमान 29 देशों में 100 एयरबेस पर जा रहा है। इस दौरान यह 27 हजार मील की दूरी तय करेगा। गत शनिवार को ये म्यानमार होते हुए कोलकाता पहुंचा था। वहां से दो दिन पहले नागपुर पहुंचा। अब दो दिन तक जोधपुर में एयरबेस पर रहेगा। इस यात्रा के दौरान दोनों पायलट्स ने उन सभी देशों के एयरबेस पर जाने की योजना बनाई है जहां द्वितीय विश्व युद्ध के दौरान स्पिट फायर ने उड़ान भरी।

विंटेज हो चुके इस विमान को दुबारा चालू करने व ऑपरेशनल करने में ब्रुक और जोन्स को ढाई साल लगे। इस लड़ाकू विमान के साथ एक चालक दल भी दूसरे विमान में चल रहा है। यह इस ऐतिहासिक यात्रा को कैमरे में कैद कर रहे हैं। फोटो के साथ वीडियो तैयार किया जा रहा है। जब यह विमान जोधपुर में उतरा तो यहां ऐतिहासिक लम्हा बन गया। पूरे एयरफोर्स के पायलट व ग्राउंड स्टाफ इसे देख रोमांचित हो उठा। द्वितीय विश्व युद्ध के दौरान इसने जोधपुर एयरबेस से मित्र राष्ट्रों के लिए कई बार उड़ानें भरी थीं। एयर मार्शल विक्रम सिंह की पुस्तक 'स्पिटफायर इन द सन' के अनुसार, स्वतंत्रता के बाद भारत में लगभग 100 स्पिटफायर पीछे रह गए थे। भारतीय वायुसेना ने 100 से अधिक खरीदे और उन्हें 1957 तक उड़ाया। पूर्वी थिएटर में, बैरकपुर, अलीपुर, अमरदा रोड, बैगाची, डबल मूरिंग्स, कॉक्स बाजार और चटगांव जैसे ठिकानों से स्पिटफायर संचालित होते हैं।

### आज उम्मेद भवन में प्रदर्शनी

सिल्वर स्पिट फायर विमान की उम्मेद भवन में प्रदर्शनी लगेगी। इसमें केंद्रीय जल शक्ति मंत्री गजेंद्रसिंह शेखावत तथा पूर्व नरेश गजसिंह प्रदर्शनी का अवलोकन करेंगे। साथ ही दोनों ही पायलट्स से मुलाकात कर अब तक के सफर के बारे में जानकारी लेंगे। इसके बाद पूर्व नरेश की ओर से पायलट्स को रात्रि भोज दिया जाएगा।

<https://www.bhaskar.com/rajasthan/jodhpur/news/spit-fire-was-iconic-fighter-in-second-world-war-land-in-jodhpur-after-62-year-01681071.html>

## **India-Indonesia joint naval exercise ‘Samudra Shakti’ underway in Bay of Bengal**

New Delhi: Anti-submarine warfare corvette INS Kamorta is jointly exercising with Indonesian warship KRI Usman Harun, a multi-role corvette, in the Bay of Bengal as part of an ongoing bilateral exercise ‘‘Samudra Shakti’’, officials said.

The joint exercises include, manoeuvres, surface warfare exercises, air defence exercises, weapon firing drills, helicopter operations and boarding operations. ‘‘INS Kamorta, an anti-submarine warfare corvette, is jointly exercising with Indonesian warship KRI Usman Harun, a multi-role corvette in the Bay of Bengal as part of the ongoing Indian Navy-Indonesian Navy bilateral exercise ‘‘Samudra Shakti’’ from November 6-7,’’ the Indian Navy said in a statement.

KRI Usman Harun arrived at Visakhapatnam on November 4 to participate in the second edition of Ex ‘‘Samudra Shakti’’.

The harbour phase, which was conducted on November 4-5, included professional interactions in the form of subject matter expert exchanges (SMEE), cross deck visits, simulator drills, planning conferences, sports fixtures and social interactions, officials said.

<https://www.dailypioneer.com/2019/india/india-indonesia-joint-naval-exercise----samudra-shakti----underway-in-bay-of-bengal.html>

*Fri, 08 Nov 2019*

## **Dassault plans centre of excellence at Gujarat technological university**

France's Dassault Systemes is planning to set up a centre of excellence (CoE) in Gujarat which is aimed at providing high end training to engineers.

The proposed centre will come up at Gujarat Technological University (GTU) campus. The proposal was discussed at the GTU board of governors meeting on Tuesday.

“We have received preliminary proposal and have given an in-principle approval for the same. After a meeting with the company officials, the investment size and other details will be explored,” said Navin Sheth, vice-chancellor, GTU. He said that the Gujarat centre would be Dassault Systemes' third such venture in the country after setting up CoEs in Hyderabad and Bangalore. The proposed CoE is expected to come up either at GTU's existing campus in Chandkheda or their new university campus at Lekawada near Gandhinagar that is being built in a sprawling 200 acres area, sources said.

While the land for the CoE will be provided by GTU, the university will not provide any financial assistance. About 90% of the investment will be made by Dassault, 10% investment will be made by Skill Corporation of India, sources added.

The CoE is aimed to strengthen technical education infrastructure to promote industry relevant skill development which will act like a catalyst in inclusive and sustainable industrial development and employment generation for the youth. It will cater to aircraft engineering, space engineering, ship building and automobile engineering. There is an acute shortage of skilled engineers and professionals in the aerospace and defence sectors and the CoE aims to act as a catalyst of growth by making world-class skilled professionals, according to a GTU official. Last month, defence minister Rajnath Singh received the Indian Air Force's first Rafale fighter jet from a series of 36 such aircraft purchased from France.

<http://www.defencenews.in/article/Dassault-plans-centre-of-excellence-at-Gujarat-Technological-University-757847>

## **Gulf countries looking towards India to build their defence industry**

Many Gulf countries especially the United Arab Emirates and Saudi Arabia have outlined their Vision plans for modernizing their economies and are looking at India as an important trading partner in a range of sectors including defence. Military-to-military relations and focus on maritime security is noteworthy, opines an international expert.

“In the defence sector, arms deals between India and the Gulf countries are limited, as India and the Gulf countries themselves are net importers of military systems that are still working to develop their defence industries. It is plausible that as these industries develop, the arms trade between India and the Gulf countries will grow, but it will be some time until this potential can be meaningfully realized,” opines US-based Derek Bisaccio, Military Markets Analyst for Forecast International.

India has secured some arms agreements with the Gulf countries, particularly the UAE, which, as far as the Gulf countries’ industries go, has the most advanced defence industry. “India’s Ordnance Factory Board (OFB) signed a deal with the UAE earlier this year to supply around \$50 million in artillery shells to the Emirati military, which follows another sale of artillery shells to the UAE a few years back. This is a drop in the bucket compared to the total volume of Emirati arms imports, however,” according to Bisaccio.

In his view the Gulf countries have large defence budgets that they can leverage to buy advanced systems from Western suppliers, meaning that the arms market for the Gulf is extremely competitive.

Even though the arms trade between these countries is limited, military-to-military relations have deepened, particularly in the area of maritime security. “The UAE and India held their first joint exercise with India, called Gulf Star 1, in March 2018, following Prime Minister Narendra Modi’s visit to the country earlier that year. Then, Qatar and India conducted a naval drill in March 2018 as well and this was followed by a joint naval drill with Oman in July 2018. The armies of India and Oman have been conducting joint training every two years since 2015,” he adds.

Saudi Arabia and India are to hold their first joint naval drill in 2020. The focus on naval security is noteworthy. “Just in the past year, a number of maritime security incidents have happened in the Persian Gulf and the Gulf of Oman, spurring an increasing focus on naval issues by the Gulf countries. India has deployed warships to the area to ensure the security of Indian shipping vessels after the sabotage of several oil tankers near the Strait of Hormuz.”

Over the last few years, especially since King Salman took over in 2015, the Kingdom has expanded its regional presence dramatically. The operation in Yemen has been a large undertaking and to support it, Saudi Arabia has looked to establish foreign bases, such as in Djibouti. The base deployments reveal a broader Saudi security focus on the Indian Ocean region more widely, rather than just simply the Arabian Peninsula. The Saudi Navy is procuring new warships as it increasingly looks to naval issues as potential threats to its domestic security. “As part of this build-up, it is natural for Saudi Arabia to also look to develop its partnerships with the key players in the Indian Ocean region, one of whom is India. The Kingdom also has long-standing ties to Pakistan, and it appears Saudi Arabia wants to maintain warm ties with both countries,” the expert observes.

To a question on the pending procurement of Carbines from an Emirati company, Bisaccio says, “India is considering buying around 100,000 CAR 816 carbines, which are produced by Caracal International, an Emirati-based firm. The rifles have reportedly been used during the UAE’s campaign in Yemen, which, together with the export agreements, would indicate it is reliable. The sale, if



completed, is positive for the UAE as it looks to turn its defence industry into a hub for arms exports to the wider region. In terms of deals between the UAE and India, this is a small step, but could demonstrate Indian confidence in Emirati products.”

On Kuwait, he says that the government of that country has typically tried to pursue a neutral foreign policy in the region, so that includes outreach to both India and Pakistan. With India, Kuwait has also conducted some joint drills and has hosted Indian warships earlier this year. “The country is part of the Gulf Cooperation Council but also maintains friendly ties to Iran. Unlike Saudi Arabia and the UAE, Kuwait is not seeking to develop an armaments industry, so the scope of defence trade cooperation with foreign countries is limited to the import of arms. On that subject, Kuwait has typically preferred to buy advanced equipment from Western suppliers (the US and European Union countries), without only limited interest in buying from regional suppliers,” he adds.

Moreover, Kuwait has not engaged in the same degree of arms trade politics as some of its neighbours who are more prone to ink large agreements with foreign suppliers for political reasons rather than military necessity.

<http://www.defencenews.in/article/Gulf-countries-looking-towards-India-to-build-their-Defence-Industry-757850>

## **All Fighter Jets in PAF inventory take part in firepower display**

The firing range in Sonmiani reverberated with echoes of sophisticated bombs and aircraft bullets as the Pakistan Air Force (PAF) demonstrated its firepower capability on Wednesday.

According to the information received here, President Dr Arif Alvi was the chief guest on the occasion.

Air Marshal Haseeb Paracha, the deputy chief of the air staff for operations, in his inaugural address briefed the audience on the recently concluded PAF Inter Squadron Armaments Competition and significance of the firepower demonstration.

Speaking on the occasion, Air Chief Marshal Mujahid Anwar Khan said: “The changing dynamics in the region call for greater focus on operational preparedness. Today’s firepower demo is a sequel to our consistent efforts for war readiness.”

He said the nation took pride in the PAF and reposed confidence in its potential for national defence. The PAF was fully prepared to overcome any challenge and keep the enemy at bay, he added.

President Alvi said that Wednesday’s event showed the unparalleled professionalism, incomparable skills and matchless teamwork of “our brave air warriors”.

He said: “Pakistan wishes to maintain peaceful relations with other nations, especially our neighbours. Yet, we are not oblivious to (the need for) safeguarding our national interests and sovereignty.”

He added: “I am confident that the armed forces of Pakistan are ever ready to face any internal or external challenge. The entire world witnessed our response to India’s violation of Pakistan’s airspace in February, when PAF once again proved its mettle in the air battle over Kashmir and re-established deterrence.”

Highlighting the situation in occupied Kashmir, the president said that Pakistan would always stand by the people of Kashmir in their just struggle for self-determination.

The firepower demonstration began with a low-level sonic boom by two Mirages flying over the firing range at supersonic speed. This was followed by a formation flypast of frontline PAF fighter jets, including F-16 Block 52, F-16, JF-17 Thunder, Mirage, F-7PG and F-7P aircraft.

Immediately afterwards, the PAF’s ‘Eyes in the Skies’ SAAB-Erieye and Karakoram Eagle aircraft flew past the venue, dispensing flares.

The PAF pilots then displayed their professional acumen by destroying the given targets with pinpoint accuracy. All fighter platforms held in the inventory of PAF were seen steaming in and hitting the targets.

“The demonstration was a testimony to the hard-hitting punch of the PAF, and a loud and clear message to the enemies of our country that the PAF is a force to reckon with,” said a member of the audience.

After the blazing display of lethal firepower by the PAF fighter aircraft, the indigenously produced JF-17 Thunder displayed some breathtaking aerobatic manoeuvres. The PAF aerobatics team “Sherdils” then appeared on the horizon and mesmerised the audience with their stunning aerial display.

An important activity of the event was a fiery performance by commandos of the Special Services Wing, where they successfully neutralised some “terrorists” in a mock exercise.

When he arrived at the venue, President Alvi was received by Air Chief Marshal Khan. Sindh Governor Imran Ismail, Chairman of the Joint Chiefs of Staff Committee Gen Zubair Mahmood Hayat and other high-ranking civil and defence officials witnessed the demonstration.

<http://www.defencenews.in/article/All-Fighter-Jets-in-PAF-inventory-take-part-in-firepower-display-757855>

*Fri, 08 Nov 2019*

## **Pakistan Navy commissioned 'Made in China' survey vessel ‘BEHR MASAH’**

The research ship, BEHR MASAH, which has been built in China for Pakistan Navy, is outfitted with modern equipment and will be used to explore natural resources in the sea.

Speaking at the ceremony, Naval Chief Admiral Zafar Mahmood Abbasi said commissioning of Behr Massah will prove to be a milestone for the Pakistan Navy in the field of modern hydrography.

While speaking about the Sino-Pak partnership, the Naval Chief said that deep-rooted and ever-growing Pak-China friendship is unparalleled and has always lived up to the expectations and this induction is yet another manifestation of it.

Talking about the situation in Indian Occupied Jammu & Kashmir, the Naval Chief said that innocent people are being kept under lockdown and are being subjugated under state oppression.

He said that Pakistan fully stands behind its Kashmiri brethren and shall support them to the last drop of our blood. We stand fully prepared to give a befitting reply to any act of aggression from the adversary.

Pakistan Navy Survey Vessel BEHR MASAH is a 3000 Ton Survey Ship which is over 80 meters in length and is equipped with state of the art equipment and is fully capable to undertake hydrographic, oceanographic and geographical surveys as well as seafloor mapping from shallow to ocean depths.

With the induction of BEHR MASAH, the hydrographic survey capabilities of Pakistan Navy would come at par with those of the developed maritime nations of the world.

The Commissioning Ceremony was attended by a large number of high ranking officers of Pakistan Navy, government departments and officials from China.

<http://www.defencenews.in/article/Pakistan-Navy-Commissioned-Made-in-China-Survey-Vessel-%e2%80%9cBEHR-MASAH%e2%80%9d-757853>

# ISRO building Satellite ‘Aditya’ which can look at the Sun 24X7

*By Avneet Oberoi*

A colossal development by the Indian Research Organization (ISRO) is their new and upcoming mission to the Sun. This mission named – *Aditya* – will provide some much needed intel on the sun and everything that happens around it. The former Chairman of ISRO, AS Kiran Kumar looks at this mission as an opportunity to help researchers get an even closer look in the happening that take place in the sun’s proximity.

There have been many missions to various planets and ISRO in the past has had many victories in sending satellites and rocket launches across space. Moreover, ISRO has large and much ambitious plans for India in space. In October, ISRO current chairman K Sevan revealed that they were planning to send two separate experimental modules into space that would dock with each other. This was a huge revelation as India with this experiment in 2020 would fall among nations like Russia, China and the US to have their own space dock stations.

This new mission to the Sun – *Aditya* which literally translates to newly risen sun is a feather in the hat for ISRO. AS Kiran, as a former chairman of ISRO gave further insight into this and spoke about this new mission of ISRO at Mangaluru at inaugurating the first Pilikula International Full-Dome Film Festival and Planetarium Conference at Pilikula. He explained that this mission would be executed in such a way in which a satellite will look down at the sun 24X7. He added that by devising specific instruments like a solar chronograph, that would be powerful enough to mimic a solar eclipse will suffice for a situation to carry out research and studies by the scientists.

This intend by ISRO to emulate a faux solar eclipse will be highly beneficial as earlier researchers would wait for a solar eclipse to happen and then plan and set up their facilities accordingly. This in turn will help to observe beyond the Sun’s photo-sphere and help to understand the complex solar phenomenons.

Giving more information and diving into details, AS Kiran revealed that ISRO is aiming to build ways and erect technology into instruments that could invade the Earth’s atmosphere and give a view of all those celestial objects, dangling in space. He expanded that scientists and researchers at ISRO are planning to expand their horizons by going past the current planet groups or missions to Mars, Venus.

Making a mention of the MoM (Mars Orbiter Mission), Kiran Kumar gives an example of how India has excelled and show tremendous progress with the limited resources and the talented capacity that fills up the country.

He appreciated the progress that MoM showed by taking the most number of full disk images than any other satellite has ever had, remarking “We converted many of our limitations into our advantage,”.

Adding more to India’s glory he said that there are many satellites set in place by India that can give readings of the Earth every 15 minutes. And based on the information delivered by the satellites, many weather changes and predictions are made by IMD. Not just for weather and climate, there are satellites, roughly more than 54 in number that provide accurate information on every influential aspect both inside and outside of the country.

<https://www.indianweb2.com/2019/11/08/isro-building-satellite-aditya-which-can-look-at-the-sun-24x7/>

## ISRO warned of a possible cyber attack when Dtrack came calling

*An ISRO official confirmed that an alert was received from the CERT-In, but the space agency was not affected. The alert came around the time of the Chandrayaan-2 mission. The malware, if successfully installed, could have hijacked the email ident..*

Bengaluru: India's space agency received an alert of a possible cyber attack on its systems early this year, which analysts said was through phishing emails targeted at senior officials.

An Indian Space Research Organisation official confirmed that an alert was received from the Computer Emergency Response Team, India (CERT-In), but the space agency was not affected. The alert came around the time of the Chandrayaan-2 mission.

Yash Kadakia, founder of Mumbai based cyber security firm Security Brigade, said that he had evidence of emails with malware sent to the five government agencies, including Isro, from suspected North Korean hackers. "They targeted senior officials with emails that had malware attachments relevant to their subject," Kakadia said.

He suspected that the malware, if successfully installed, could have hijacked the email identity of the recipient and in turn be used to send mails to juniors.

Last month, the Nuclear Power Corporation of India's Kudankulam nuclear plant said there was a cyber attack on its systems.

The malware, identified as Dtrack, was used to breach the domain controllers of the nuclear plant. The malware has the ability to access files and upload the entire data into a remote network outside of India.

<https://economictimes.indiatimes.com/tech/internet/isro-warned-of-a-possible-cyberattack-when-dtrack-came-calling/articleshow/71964232.cms>

## Iran resumes uranium enrichment at Fordow

Tehran: Iran resumed uranium enrichment at its underground Fordow plant south of Tehran on Thursday in a new step back from its commitments under a landmark 2015 nuclear deal.

Engineers began feeding uranium hexafluoride gas into the plant's mothballed enrichment centrifuges in "the first minutes of Thursday", the statement said.

The suspension of uranium enrichment at the long secret plant was one of the restrictions Iran had agreed to on its nuclear programme in return for the lifting of UN sanctions.

Iran's announcement on Wednesday that it would resume enrichment at the Fordow plant from midnight (2030 GMT) had drawn a chorus of concern from the remaining parties to the troubled agreement. Britain, China, France, Germany and Russia have been trying to salvage the hard-won deal since Washington abandoned it in May last year and reimposed crippling unilateral sanctions.

They say Iran's phased suspension of its obligations under the deal since May makes that more difficult.

The resumption of enrichment at Fordow is Iran's fourth move away from the deal. Uranium enrichment is the sensitive process that produces fuel for nuclear power plants but also, in highly extended form, the fissile core for a warhead.

Iran has always denied any military dimension to its nuclear programme.

It has been at pains to emphasise that all of the steps it has taken are transparent and swiftly reversible if the remaining parties to the agreement find a way to get round US sanctions.

<https://www.dailypioneer.com/2019/india/iran-resumes-uranium-enrichment-at-fordow.html>