



Current Affairs - October to December 2018

Month Type



- ▶ [37 Current Affairs were found in Last Three Months for Type - Science and Technology.](#)

Science

- ▶ 0.7 m GROWTH-India telescope at Indian Astronomical Observatory in Hanle (Ladakh) made its first observation. GROWTH-India is a part of multi-country collaborative initiative known as Global Relay of Observatories Watching Transients Happen (GROWTH), to observe transient events in Universe.
- ▶ 4 new species of Indian horned frogs discovered from Himalayan regions of Northeast India, by team of researchers that comprised S D Biju, famously known as the 'Frogman of India'.
 - ▶ Scientists have named them as Himalayan horned frog (*Megophrys himalayana*), Garo white-lipped horned frog (*Megophrys oreocrypta*); Yellow spotted white-lipped horned frog (*Megophrys flavipunctata*) and Giant Himalayan horned frog (*Megophrys periosa*).
- ▶ GSAT-29 communication satellite successfully launched by Geosynchronous Satellite Launch Vehicle MarkIII (GSLV MkIII-D2) from Satish Dhawan Space Centre (SDSC) SHAR Sriharikota (Andhra Pradesh).
 - ▶ GSAT-29 satellite weighed 3423-kg.
 - ▶ GSLV Mk III is a three-stage heavy lift launch vehicle developed by the Indian Space Research Organisation (ISRO).
- ▶ A new deep-sea shark species named Pygmy false catshark discovered in northern Indian Ocean, as first such discovery in India since Mangalore hound shark in 2011. Scientific name of species is *Planonassus indicus* – 'planus' meaning flat and 'nassus' meaning nose.
- ▶ As a first such mission, European and Japanese space agencies launched Bepi Colombo spacecraft, for a joint mission to Mercury, planet closest to the sun. Spacecraft will arrive at Mercury in 2025.
 - ▶ It has named after Italian scientist Giuseppe "Bepi" Colombo. During its 5.2 billion miles journey, spacecraft will several fly-bys of Earth, Venus and Mercury, to slow down enough to avoid huge gravitational pull of Sun.
- ▶ As per a study published in journal Royal Society Open Science, Dracula ant possesses fastest animal movement on record, With speeds of up to 90 metres per second / 200 miles per hour.
- ▶ CSIR Indian Institute of Toxicology Research (CSIR-IITR) Lucknow has developed an innovative technology for "Drinking Water Disinfection System" with Trade name "OneerTM", transferred to Bluebird Water Purifiers.
 - ▶ This system will provide safe and clean drinking water at a cost of just 2 Paise / Ltr. Community level model is of 450 LPH capacity which can be scaled up to 5000 to 1 lakh L/day.
 - ▶ Smaller unit of Oneer is particularly suitable for homes, street food vendors, and small establishments.
- ▶ China has built an 'artificial sun' that reaches 6 times temperature of Sun's core of 15 million °C. Scientists from China's Institute of Plasma Physics announced that plasma in their Experimental Advanced Superconducting Tokamak (EAST) also called 'artificial sun', reached 100 million °C, temperature required to perform nuclear fusion on Earth.
- ▶ China launched Chang'e 4, first-ever spacecraft that will attempt landing on far side of Moon, which always shows the same face to Earth as it's close enough to be locked by planet's gravitational field.
- ▶ German firm BigRep produced the world's first fully functioning e-motorbike NERA using a 3D printer. NERA has features like airless tires, embedded electronics, and forkless steering.
- ▶ IIT Hyderabad Researchers developed smartphone-based system to detect adulteration in milk. This could be done by using an indicator paper that changes colour according to acidity which further can be incorporated with algorithms on a smartphone to accurately detect colour change.

12. ▶ India launched its latest communication satellite, GSAT-7A aboard Geosynchronous Satellite Launch Vehicle (GSLV-F11) from Satish Dhawan Space Centre at Sriharikota (Andhra Pradesh).
 - ✎ GSAT-7A is 39th Indian communication satellite of ISRO to provide services to the users in Ku-band over Indian region. It weighs 2250 KG.
 - ✎ GSAT-7A satellite is the heaviest satellite (2250 kgs) with an indigenously developed cryogenic stage that has been launched by GSLV.
13. ▶ India will launch 2 Satellite Indian Data Relay Satellite System (IDRSS) As a part of its proposed manned space mission, to improve data relay and communication links with its remote sensing/earth observation satellites.
 - ✎ IDRSS will reduce the dependence on the ground stations in tracking satellites. Communication and data transfer would be in real time as remote sensing satellites can relay data gathered to IDRSS satellites which in turn can transmit them to the ground.
 - ✎ IDRSS will be like a hub as it can receive commands from the ground stations and in turn relay the same to other satellites.
14. ▶ Indian American Mahum Siddiqi won inaugural “Digital Transformation Hackathon” at Cornell University in USA, for designing a device which can detect actual level of pain of a patient during a diagnosis.
15. ▶ Indian Space Research Organisation (ISRO) issued announcement of opportunity (AO) to international space scientists to propose their scientific payloads to be carried on its mission to Venus planned for 2023.
16. ▶ Indian Space Research Organisation’s (ISRO) Launched its heaviest and most-advanced high throughput communication satellite GSAT-11, from Spaceport in French Guiana (South America), on board Launch vehicle Ariane 5 VA-246. It also carried South Korea’s GEO-KOMPSAT-2A satellite.
 - ✎ The 5,854-kg GSAT-11 will provide high data rate connectivity to users of Indian mainland and islands through 32 user beams in Ku-band and 8 hub beams in Ka-band. It will boost broadband connectivity to rural and inaccessible areas in India.
 - ✎ GSAT-11 was launched from French Guiana as its heaviest satellite of ISRO (5.86 ton) and cannot be carried by ISRO's GSLV Mk – III which has capacity to lift only up to four-ton class payloads.
17. ▶ Indian Space Research Organisation’s (ISRO) Polar Satellite Launch Vehicle (PSLV-C43) launched 31 satellites from Satish Dhawan Space Centre (SDSC) in Sriharikota (Andhra Pradesh).
 - ✎ It Included India’s Hyper-Spectral Imaging Satellite (HysIS) and 30 foreign satellites. HysIS is an earth observation satellite built around ISRO’s Mini Satellite2 (IMS-2) bus weighing about 380kg. The mission life of the satellite is five years. Primary goal of HysIS is to study the earth’s surface in both visible, near infrared and shortwave infrared regions of the electromagnetic spectrum.
 - ✎ Foreign Satellites belonged to Australia (1), Canada (1), Columbia (1), Finland (1), Malaysia (1), Netherlands (1), Spain (1) and USA (23). Satellites from Australia, Columbia, Malaysia and Spain were flown aboard PSLV for the first time.
 - ✎ In December 2018, ISRO has 2 more planned launches - GSAT 11 from French Guiana and GSAT 7A from Sriharikota. Next year, ISRO will have its long expected second mission to moon, Chandrayaan – II. GSAT-11 is being launched from French Guiana as its heaviest satellite of ISRO (5.86 ton) and cannot be carried by GSLV Mk – III which has the capacity to lift only up to four-ton class payloads.
18. ▶ Most-distant object ever observed in our solar system known as 2018 VG18 and nicknamed “Farout,” has been discovered by American scientists. It is the first to be observed at a distance of more than 100 AU (astronomical units) which almost 120AU or 11 billion miles from the sun.
19. ▶ NASA announced that first crewed test flight by a SpaceX rocket to ISS will take place in June 2019. SpaceX will use its Falcon 9 rocket for launch with a Crew Dragon capsule attached on top.
20. ▶ NASA has retired Kepler space telescope after it ran out of fuel needed for further science operations, bringing end of 9.5 year mission of Kepler space telescope in which it had discovered over 2,600 intriguing exoplanets from outside our solar system some.
 - ✎ It was launched in 2009 on 3.5-year mission, but operated for 9 years. It was NASA’s first planet-hunting mission. It was named after German mathematician and astronomer Johannes Kepler.
21. ▶ NASA launched VISIONS-2 (*Visualizing Ion Outflow via Neutral Atom Sensing-2*) rocket to get a closer look at how earth’s atmosphere is leaking into space. It has several applications including predicting which planets might be habitable.
22. ▶ NASA’s (National Aeronautics and Space Administration) Parker Solar Probe, the first mission to touch the Sun, successfully completed a flyby of Venus at a distance of 2,415 km during its first gravity assist from Venus.
 - ✎ Remaining 6 Venus gravity assists will happen during 7-year mission.
 - ✎ Parker Solar Probe was launched on August 12, 2018, on a 7-year journey to study the Sun’s outer atmosphere and its impacts on space weather.
23. ▶ NASA’s InSight spacecraft landed on Mars after 7 months of Launch, 458-million-kilometre journey, and a 6.5-minute intense parachute descent through MARS atmosphere. It marks 8th successful MARS Landing for NASA.

24. ▶ NASA's new Mars lander InSight has set up its first instrument on planet Mars, a quake monitor (seismometer) that will listen for quakes and wobbles. It is first time that a scientific instrument has ever been placed on another planet's surface. InSight will also put a wind cover over the seismometer next month and initiate a new experiment.
25. ▶ National Aeronautics and Space Administration (NASA)'s Voyager 2 probe is on its way outside the influence of the Sun and it could be close to interstellar space. It was launched on August 21, 1977. Voyager 2 could be 2nd space probe to reach interstellar space after Voyager 1 which crossed into interstellar space in 2014.
26. ▶ Scientists at European Southern Observatory (ESO) discovered a galaxy proto-supercluster named "Hyperion", the largest and the most massive structure in early universe known so far. Hyperion was found using data from VIMOS Ultra-Deep Survey done by VIMOS instrument on European Southern Observatory's (ESO) Very Large Telescope in Chile.
 - ✎ Hyperion's mass is estimated to be a million billion times that of our own Sun (nearly 1,048 Jupiters, or 333,000 Earths). v. Hyperion is located in the constellation of Sextans.
27. ▶ Scientists at Institut National de la Recherche Scientifique (Canada) developed a new camera called the T-CUP, touted as world's fastest camera. It can capture 10 trillion frames per second. It can freeze time to see light in extremely slow motion.
28. ▶ Scientists at Rice University (US) developed tiny spheres that can catch and destroy bisphenol A (BPA), a synthetic chemical used to make plastics that often contaminates water. This new material helps in overcoming two significant technological barriers for photocatalytic water treatment.
 - ✎ BPA is used to coat insides of food cans, bottle tops and water supply lines. BPA that seeps into food and drink is considered safe in low doses, but prolonged exposure is suspected of affecting the health of children and contributing to high blood pressure.
29. ▶ Scientists discovered fossilized remains of a piranha-like species believed to be the earliest known example of a flesh-eating fish, found in South Germany. It lived about 150 million years ago.
30. ▶ Scientists from Bombay Natural History Society (BNHS) and IISc Bangalore discovered 2 new species of lizards in Western Ghats. The Lizards are: Montane forest lizard and Spiny-headed forest lizard. They were wrongly identified under genus Calotes for over 150 years.
31. ▶ Scientists from Massachusetts Institute of Technology (US) have built and flown first-ever silent airplane with no moving propellers or jet turbines, called Ion Drive. It weighs about 5 pounds with five-meter wingspan. It was flown at distance of 60 meters, repeated 10 times. It is first-ever plane having no moving parts in propulsion system.
 - ✎ It is powered by ionic wind or electrodynamic thrust, a silent but mighty flow of ions that is produced aboard plane. It can generate enough thrust to propel plane over sustained, steady flight.
32. ▶ USA Scientists claimed to have developed world's first bioelectronic medicine which is implantable, biodegradable wireless device that speeds nerve regeneration and improves healing of damaged nerve.
 - ✎ It is controlled wirelessly by transmitter outside body that acts much like cellphone-charging mat. It operates for about two weeks before naturally absorbing into the body.
 - ✎ During its animal test on rats with injured sciatic nerves, it was found that this bioelectronic medicine device delivers regular pulses of electricity to damaged peripheral nerves in rats after surgical repair process. This results in accelerating regrowth of nerves.
 - ✎ Researchers envision that such transient engineered technologies can replace pharmaceutical treatments for a variety of medical conditions in humans.
33. ▶ USA based MIT (Massachusetts Institute of Technology) scientists have developed a method to mass produce robots the size of a cell named "Synccells" (synthetic cells), to be used to monitor interior of an oil or gas pipeline, or to detect disease in bloodstream. A process called "autoperforation" directs the fracture lines to produce miniscule pockets of a predictable size and shape.
34. ▶ World's first medical imaging scanner "Explorer" that can capture a 3D picture of the whole human body at once in 20-30 seconds, has started functioning. It has been developed by University of California (USA).
35. ▶ World's first robot citizen Sophia has been granted world's first robot visa for a world tour on behalf of her Hong Kong-based developer Hanson Robotics. She was issued electronic visa upon her arrival at Azerbaijan Baku International Airport. Sofia is in Azerbaijan for a tech conference, where she is a keynote speaker.
36. ▶ World's largest supercomputer Spiking Neural Network Architecture (SpiNNaker) machine designed to work in same way as human brain was switched on for first time, built at University of Manchester in UK. It can model more biological neurons in real time than any other machine on planet. It is capable of completing more than 200 million million actions per second, with each of its chips having 100 million transistors.
 - ✎ It is unique as it mimics the massively parallel communication architecture of brain, sending billions of small amounts of information simultaneously to thousands of different destinations. It has massive potential for neurological breakthroughs in science such as pharmaceutical testing.

37. ▶ World's oldest plant virus dating back 1,000 years named Zea mays chrysovirus 1(ZMVCV1) has been discovered at a Native American archeological site. The previous oldest was found about 750 years ago.

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