



### Current Affairs - August to October 2018

Month  Type



- ▶ 64 Current Affairs were found in **Last Three Months** for Type - **Science and Technology**.

#### Science

- ▶ NASA confirmed that there are frozen water deposits in darkest and coolest parts of Moon's Polar Regions, using data from India's Chandrayaan-I spacecraft.
  - ▶ Chandrayaan-I spacecraft was launched in 2008 by the Indian Space Research Organisation (ISRO).
  - ▶ At the southern pole of moon, most of ice is concentrated at lunar craters, while northern pole's ice is more widely and lightly spread.
  - ▶ Most of the newfound water ice lies in shadows of craters near poles, where warmest temperatures never reach above minus 156 degrees Celsius (-250 degrees Fahrenheit).
- ▶ A new Clot buster, PEGylated Streptokinase - a Novel Biological Entity developed by CSIR (Council of Scientific & Industrial Research) has been developed, to revolutionize treatment of ischemic strokes, a condition caused by a dysfunction in the supply of blood to the brain. Prevalence of stroke is much higher in India than West and about 87% of all strokes are ischemic strokes.
  - ▶ CSIR-IMTECH and Epygen Biotech Mumbai signed an agreement to develop PEGylated Streptokinase for treatment of Ischemic Stroke.
  - ▶ PEGylated Streptokinase (novel recombinant protein Thrombolytic molecule) is engineered for enhanced proteolytic stability and extended plasma half-life, with reduced immuno-reactivity which would have significant clinical advantages.
- ▶ A swimming pool type research reactor *Apsara-upgraded* became operational in Trombay campus of Bhabha Atomic Research Centre.
  - ▶ *Apsara*, first research reactor in Asia became operational in Trombay campus of Bhabha Atomic Research Centre in August 1956. After providing more than five decades of dedicated service to the researchers, the reactor was shut down in 2009.
  - ▶ The Upgraded version uses plate type dispersion fuel elements made of Low Enriched Uranium (LEU). By virtue of higher neutron flux, this reactor will increase indigenous production of radio-isotopes for medical application by 50 % and would also be extensively used for research in nuclear physics, material science and radiation shielding.
- ▶ According to a new study by BirdLife International, 8 avian species was declared "extinct" in this decade. It was carried out to analyse 51 Critically Endangered birds six statistical methods to assign to the IUCN Red List Category to determine which of them qualify as 'potentially extinct' and 'extinct'. 5 of 8 extinctions were from the South American mainland due to deforestation resulting in habitat loss.
- ▶ Aditya-L1, India's first mission to study solar corona, will be launched in 2019-2020, by Polar Satellite Launch Vehicle (PSLV-XL).
  - ▶ Aditya - L1 will be inserted in a halo orbit around the Lagrangian point 1 (L1), 1.5 million km from Earth. Solar corona is outer layers of the Sun.
  - ▶ Lagrangian point where attraction by Sun and Earth becomes equal. This point does not experience gravitational force. It will observe Sun's Photosphere and Chromosphere and will also conduct additional experiments.
  - ▶ It will have 6 additional payloads -
    - ▶ Visible Emission Line Coronagraph (VELC)– to study the diagnostic parameters of solar corona and dynamics and origin of Coronal Mass Ejections.
    - ▶ Solar Ultraviolet Imaging Telescope (SUIT)– to image the Solar Photosphere and Chromosphere in near Ultraviolet (200-400 nm) and measure solar irradiance variations.
    - ▶ Aditya Solar wind Particle Experiment (ASPEX) – to study the variation of solar wind properties and its distribution and spectral characteristics.
    - ▶ Plasma Analyser Package for Aditya (PAPA)– to understand the composition of solar wind and its energy distribution.

- ✎ Solar Low Energy X-ray Spectrometer (SoLEXS)– to monitor the X-ray flares to study the heating mechanism of solar corona.
  - ✎ High Energy L1 Orbiting X-ray Spectrometer (HELIOS)– to observe the dynamic events in the solar corona and estimate the energy used to accelerate the particles during eruptive events.
  - ✎ Magnetometer– to measure the magnitude and nature of the Interplanetary Magnetic Field.
6. ▶ American Pharmaceutical Company Abbott will introduce a high-sensitive troponin-I blood test in India, that can predict chances of a heart attack or other cardiac event months to years in advance.
    - ✎ Troponin-I test provides better predictive information for determining a person’s chances of developing future heart disease when added to current standard of care.
  7. ▶ 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.
  8. ▶ Australian researchers have announced that they have developed a new technique to detect early-stage cancer tumour cells in the blood through malaria protein VAR2CSA. In this, VAR2CSA sticks to cancer cells and helps detect more number of cancer cells than before.
  9. ▶ CSIR Indian Institute of Toxicology Research (CSIR-IITR) Lucknow has developed an innovative technology for “Drinking Water Disinfection System” with Trade name “Oneer™”, 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.
  10. ▶ Facebook has developed an artificial intelligence (AI) system ‘Rosetta’ which can detect text from over a billion images like memes and videos in real time. It detects rectangular regions in images that contain text and then uses a neural network to recognise and transcribe what’s written.
  11. ▶ Germany rolled out world’s first hydrogen-powered passenger train, manufactured by French TGV-maker Alstom. These locomotives named *iLint trains* emit zero emissions, offering greener and quieter alternative to diesel on non-electrified railway lines.
    - ✎ Hydrogen trains are equipped with fuel cells that produce electricity by combining hydrogen with oxygen. This conversion process only emits steam and water, thus producing zero emissions.
    - ✎ Excess energy produced is stored in ion-lithium batteries on board train. Hydrogen fuel cells have advantages over batteries. Instead of recharging, they can easily be refueled like gas or diesel engine.
    - ✎ These trains can run for around 1,000 km on a single tank of hydrogen, similar to the range of diesel trains.
  12. ▶ Google developed a new Artificial Intelligence (AI) technology to combat online spreading of contents involving child sexual abuse, using deep neural networks for image processing to help discover and detect child sexual abuse material (CSAM) online. Quick identification of new images will lead to quicker identification of children, who are being sexually abused and will help protect them from further abuse.
  13. ▶ ISRO postponed Chandrayaan-2, India’s second mission to moon to January 3, 2019, as 2nd time the mission is postponed. Chandrayaan 2 is advanced version of Chandrayaan-1 mission (launched in 2008) which only involved orbiting around moon.
    - ✎ Chandrayaan-2 involves an orbiter, lander and rover. In this, ISRO will for first time attempt to land rover on moon’s south-pole. It involves soft-landing on lunar surface and rover that will walk and analysis content on moon’s surface. It will be launched on board of Geosynchronous Satellite Launch Vehicle Mk III (GSLV-F10).
    - ✎ Soft-landing on moon surface will be most complex part. Only US, Russia and China have been able to soft-land spacecraft on lunar surface.
    - ✎ Space Commission also approved ISRO’s proposal of naming Chandrayaan-2 lander ‘Vikram’ after Vikram Sarabhai, father of Indian space programme.
  14. ▶ ISRO will set up a satellite ground control station at the North Pole for a “14-orbit coverage” to efficiently download data from India’s Earth-observing satellites. ISRO already has two ground stations, IMAGES at Telangana Shadnagar built in 2011, and AGEOS in Antarctica.
    - ✎ Also, ISRO announced to conduct 19 missions, including 10 satellites and nine launch vehicles, in next seven months between September and March. It will include the launch of India’s second moon mission Chandrayaan-2 in Jan 2019.
  15. ▶ India and France have signed agreement to collaborate for ISRO’s first human space mission Gaganyaan to be launched in 2022. The announcement was made 6th edition of Bengaluru Space Expo (touted to be largest space conference in Asia and held in Bengaluru).
    - ✎ ISRO and French space agency CNES will form working group to exchange expertise in fields of astronaut life support, radiation protection, space debris protection and personal hygiene systems among others.

- ✎ During same event, ISRO displayed a space suit developed for Gaganyaan Mission 2022. It is an orange-coloured prototype space suit developed at Vikram Sarabhai Space Centre in Thiruvananthapuram. It can hold one oxygen cylinder, allowing an astronaut to breathe in space for 60 minutes.
  - ✎ ISRO also displayed a crew model and crew escape model, with thermal shield and temperature inside maintained at 25 degree Celsius.
  - ✎ Gaganyaan Mission astronauts will be living for five to seven days in a 400-km orbit from the Earth's surface as they would conduct micro-gravity experiments.
  - ✎ Theme for Bengaluru Space Expo 2018 was *Creating dynamism in Indian space ecosystem*.
16. ▶ India's Ranjit Srivastava (Ranchi) has developed Rashmi, India's first humanoid robot, which can speak Hindi, Bhojpuri, Marathi and English. Rashmi uses linguistic interpretation (LI), artificial intelligence (AI), visual data and facial recognition systems.
  17. ▶ Indian Council for Agricultural Research (ICAR) discovered an invasive agricultural pest Fall Armyworm (*Spodoptera frugiperda*) in Karnataka. A major maize pest in North America, *Fall Armyworm* arrived in Africa in 2016. The pest feeds on around 100 different crops, such as vegetables, rice, and sugarcane and it spreads in no time. Karnataka finding is the first report of the pest in Asia.
  18. ▶ Indian Space Research Organisation (ISRO) successfully launched its PSLV-C42 rocket carrying two British Earth observation satellites - NovaSAR and S1-4, intended to improve UK's disaster management capabilities.
  19. ▶ Indian Space Research Organisation (ISRO)'s heaviest satellite so far - GSAT-11 (weighing over 5700 kg), will take off a spaceport in French Guiana on 30 November. GSAT-11 is capable of providing high bandwidth connectivity with up to 14 GB per second data transfer speed.
    - ✎ ISRO will also launch incubators across India to support startups working on building newer solutions in rocketry, communication satellites and applications based on remote sensing data.
  20. ▶ Indian Space Research Organization (ISRO) unveiled details of its first indigenous human space mission dubbed as Gaganyaan to be launched in 2022, announced by PM Narendra Modi during his 72nd Independence Day speech.
    - ✎ Indian Space Research Organisation (ISRO) will outsource production of the Polar Satellite Launch Vehicles (PSLV) and Small Satellite Launch Vehicles (SSLVs) to private Industries.
    - ✎ 3 Indian astronauts will be taken to space on board Gaganyaan spacecraft by 2022, as first human space mission to be indigenously developed by ISRO.
    - ✎ India will become fourth nation in the world to send astronaut into space after US, Russia and China.
    - ✎ Rakesh Sharma was first Indian to travel to space, as part of the Soviet Union's Soyuz T-11 expedition, launched on April 2, 1984, of the Intercosmos programme.
    - ✎ Cost of Gaganyaan mission will be less than Rs 10,000 crore. Prior to actual launch, ISRO will launch two unmanned Gaganyaan missions (first in 30 months' time and then 36 months).
    - ✎ GSLV Mk-III launch vehicle will be used to launch Gaganyaan as it has necessary payload capability for mission.
    - ✎ ISRO also announced to outsource production of the Polar Satellite Launch Vehicles (PSLV) and Small Satellite Launch Vehicles (SSLVs) to private Industries.
  21. ▶ India's Mars mission Mangalyaan, successfully completed four years around Mars, despite being designed to last only six months. ISRO inserted Mangalyaan into Mars' orbit in its first attempt on September 24, 2014.
    - ✎ Also, ASTROSAT, India's first multi-wavelength space observatory will complete 3 years in Earth's orbit (Launched on September 28, 2015). ASTROSAT has helped scientists confirm the presence of younger stars in globular clusters, earlier believed to contain only old stars.
  22. ▶ India's biggest cyclotron facility named Cyclone-30 became operational at Department of Atomic Energy (DAE)'s Kolkata-based Variable Energy Cyclotron Centre (VECC).
    - ✎ Cyclotron is used to produce radioisotopes for diagnostic and therapeutic use for cancer care. Radiations from these isotopes are used to destroy cancer cells.
    - ✎ Cyclone-30 will produce radioisotopes vital for diagnosis and treatment of cancer. It will be only cyclotron facility in country to produce Germanium 68 radioisotopes, used in diagnosis of breast cancer.
    - ✎ It will also produce Palladium 103 isotopes, which is used for the treatment of prostate cancer. In its future stages, it will also produce Iodine 123 isotopes, which can help detect thyroid cancer.
  23. ▶ India's first captive-born Humboldt Penguin named Freedom Baby died barely a week after it was born at Veermata Jijabai Bhosale Udyan and Zoo (Byculla zoo) (Maharashtra). It was named Freedom Baby as it was born on Independence Day. It was the first Humboldt Penguin to born in captivity in India.



33. ▶ NASA's Focusing Optics X-ray Solar Imager (FOXSI) took its third flight from the White Sands Missile Range in White Sands, New Mexico.
- ✎ It is first instrument built specially to image high-energy X-rays from Sun, that will capture nanoflares (miniature explosions invisible to naked eye).
  - ✎ First FOXSI flight was in 2012, during which it successfully viewed a small solar flare in progress, and its second in 2014, when it detected best evidence at the time of X-ray emission from nanoflares.
34. ▶ NASA's Transiting Exoplanet Survey Satellite, known as TESS, has spotted "hot Earth" and "super-Earth" planets in solar systems 49 and 60 light-years away, marking its first discovery since April launch. TESS is designed to build on the work of its predecessor, Kepler space telescope, which discovered over 2,500 confirmed exoplanets in 20 years and is now running out of fuel.
35. ▶ 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.
36. ▶ National Wildlife Genetic Resource Bank inaugurated at Centre for Cellular and Molecular Biology's (CCMB) Laboratory of Conservation of Endangered Species (LaCONES) facility in Hyderabad (Telanagana), as India's first genetic resource bank where genetic material will be stored for posterity which will further the cause of conservation of endangered and protected animals.
- ✎ It is equipped with sophisticated equipment to preserve the genetic resources that could be utilised to virtually resurrect an animal species in case it goes extinct. It will cryopreserve living cell lines, gametes and embryos of endangered wild animal species in India.
37. ▶ Researchers at Shizuoka University (Japan) developed a space elevator, a miniature version on satellites.
- ✎ 2 ultra-small cubic satellites will be used for demonstration, being released from International Space Station (ISS) and container acting like elevator car will be moved on cable connecting satellites using motor. The movement of motorised elevator box will be monitored with cameras in the satellites.
  - ✎ Space elevator is a proposed type of planet-to-space transportation system. It will permit vehicles to travel along cable from planetary surface, such as Earth's, directly into space or orbit, without use of large rockets. The idea of space elevator was first proposed in 1895 by Russian scientist Konstantin Tsiolkovsky.
38. ▶ Researchers at University of Oxford (UK) developed a new technology that can detect patients with the risk of deadly heart attacks, well in advance. It uses a new biomarker named the Fat Attenuation Index (FAI). It analyzes computed tomography (CT) images of fat around arteries to detect the inflamed plaques that can cause heart attacks.
39. ▶ Researchers found that Aspirin which is an affordable and globally available drug could help prevent HIV transmission. They tested the effect of acetylsalicylic acid or aspirin and other anti-inflammatory drugs on HIV target cells. It showed that Aspirin was the most effective as it reduced number of HIV target cells.
40. ▶ Researchers from China's Centre for Excellence in Molecular Plant Sciences created the world's first single-chromosome yeast, while not affecting the majority of its functions. Experiment was conducted on Brewer's yeast having 16 chromosomes and which shares its one-third genome ancestry with humans. Researchers were able to fit nearly all genetic material of Brewer's yeast into just one chromosome.
41. ▶ Researchers from City University of Hong Kong (CityU) developed world's first-ever 4D printing for ceramics that can be used to create complex, shape-changing objects.
- ✎ 4D printing is conventional 3D printing combined with the additional element of time as the fourth dimension, where printed objects can re-shape or self-assemble themselves over time with external stimuli, such as mechanical force, temperature, or a magnetic field.
  - ✎ Existing 3D-printed ceramic precursors, which are usually difficult to deform, also hinder the production of ceramics with complex shapes. To overcome these, researchers developed a novel 'ceramic ink', a mixture of polymers and ceramic nanoparticles.
  - ✎ Applications include Printed ceramic precursors can be used in manufacturing of electronic devices. Ceramic materials have much better performance in transmitting electromagnetic signals than metallic materials.
  - ✎ The artistic nature of ceramics and their capability to form complex shapes also provide the potential for consumers to tailor-make uniquely designed ceramic mobile phone back plates.
42. ▶ Researchers from Indian Institute of Technology (IIT) Madras developed first of family of six industry-standard microprocessors under Project Shakti. The initial batch of 300 chips have been named RISECREEK and have been fabricated at Intel's facility at Oregon, US for free to run Linux operating system.
43. ▶ Researchers from Massachusetts Institute of Technology (USA) developed a wireless 'in-body GPS' system that can track tumours and pinpoint location of ingestible implants inside body. In tests conducted on animals, system called 'ReMix' was found to be able to track implants with centimetre-level accuracy. It could be used to deliver drugs to specific regions in the body, and ease up the healing process.
44. ▶ Researchers from University of Minnesota (USA) found a way to 3D print light receptors on a curved glass surface in a medical technology which could be used to produce a 'bionic eye'.

45. ▶ Researchers from over 20 nations have first time have decoded wheat genome, with highest quality genome sequence generated to date for such wheat variety. Reference genome decoded covers 94% (14.5 Gb) of decoding of Chromosome 2A of wheat genome.
- ✎ It will help to identify genes controlling complex agronomic traits such as yield, grain quality, resistance to diseases and pests as well as tolerance to drought, heat, water logging and salinity.
  - ✎ Availability of high quality reference genome will accelerate breeding of climate-resilient wheat varieties to feed ever-increasing world population and help address global food security in decades to come.
46. ▶ 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.
47. ▶ 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.
48. ▶ 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.
49. ▶ Scientists at University of Texas at San Antonio (UTSA) have set a new Guinness World Record by creating the smallest medical robot – a device measuring just 120 nanometres that could assist in future cancer and Alzheimer’s treatments.
50. ▶ Scientists developed Aerogel, a transparent heat-resistant super-insulating gel using beer waste. It may be used to build greenhouse-like habitats for human colonization on extraterrestrial habitats.
- ✎ Aerogels defining feature is air, as it comprise at least 90% gas by weight. Their thin films are made up of crisscrossing patterns of solid material that trap air inside billions of tiny pores, similar to bubbles in bubble wrap. This trapping capacity makes them good insulators.
  - ✎ It could also be used on buildings on Earth to help make huge savings on energy costs. It enables to harvest sunlight through thermally-insulating material and store energy inside, protecting from big oscillations in temperature.
51. ▶ Scientists discovered a beetle trapped in amber that dates back to 99 million years, in Myanmar. It may help better understand relationship between ancient flowering plants and pollinators.
- ✎ It uncovers earliest definitive fossil evidence of relationship between cycads and insects. Cycads are a group of unusual evergreen gymnosperms that may have been first insect-pollinated plants.
  - ✎ The found beetle preserved in Burmese amber for an estimated 99 million years, is named *Cretoparacucujus cycadophilus*.
52. ▶ Scientists discovered an ancient fossil of Dickinsonia, earliest animal on geological record. Dickinsonia is an oval shaped creature that lived 558 million years ago. It grew up to 1.4 m in length. The fossil was discovered by researchers from Australian National University (ANU) near the White Sea in Russia.
53. ▶ 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.
54. ▶ 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.
55. ▶ Scientists from University of Manchester (England), have developed a non-antibiotic drug that can treat tuberculosis (TB) in humans effectively. Results revealed that compound does not kill bacteria directly, but results in a significant reduction in bacterial burden.
56. ▶ US Scientists Scientists successfully grown oesophageal organoids, a miniature, functional versions of human food pipe using pluripotent stem cells (PSCs) in laboratory. It will help to study birth defects like esophageal atresia, organoids, eosinophilic esophagitis and Barrett’s metaplasia.
- ✎ Oesophagus is long muscular tube part of digestive system that connects mouth to stomach to actively pass food. It is also called as gastro-intestinal tract (GI tract or gullet or food pipe). It is around 25cm long in adults.
57. ▶ US Scientists identified 3 new species of ancient primates that were earlier unknown, and have named them: *Ekwiymakius walshi*, *Gunneltarsius randalli* and *Brantomomys cerutti*. They lived 42 to 46 million years ago.
58. ▶ US scientists created a platinum-gold alloy, named as most wear-resistant metal in world. It is the first alloy in the same class as diamond and sapphire, and has been 100 times more durability than high-strength steel. With platinum-gold coating, several electronic products can be made more cost-effective, long-lasting and dependable.

59. ▶ 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.
60. ▶ USA based MIT (Massachusetts Institute of Technology) scientists have developed a method to mass produce robots the size of a cell named "Syncells" (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.
61. ▶ USA's National Aeronautics and Space Administration (NASA) launched Parker Solar Probe, a \$1.5 billion spacecraft, aimed at looking after several factors of sun which are crucial to protect Earth by unveiling mysteries of dangerous solar storms.
- ✍ It is Humanity's first-ever mission to Touch the Sun. It will fly through Sun's atmosphere as close as 3.8 million miles from its surface, much closer than any spacecraft has come before.
  - ✍ Parker Solar Probe launched aboard a Delta IV-Heavy rocket from Cape Canaveral (USA).
  - ✍ It will use Venus' gravity during seven flybys over nearly seven years to gradually bring its orbit closer to Sun. Earth's average distance to Sun is 93 million miles.
  - ✍ Why won't it Melt -
    - ✍ Parker Solar Probe will provide unprecedented observations of what drives the wide range of particles, energy and heat that course through Sun's Corona, which has temperature of approx 6000 Degrees and sends particles outward into solar system.
    - ✍ Parker Solar Probe has can withstand extreme temperature and fluctuations, with its custom heat shield that helps protect mission it from Sun's intense light emission.
    - ✍ The key Lies in **concept of heat versus temperature** -
      - ✍ High temperatures do not always translate to actually heating another object. In space, temperature can be thousands of degrees without providing significant heat to a given object or feeling hot, as Temperature measures how fast particles are moving, whereas heat measures total amount of energy they transfer.
      - ✍ Particles may be moving fast (high temperature), but if there are very few of them, they won't transfer much energy (low heat). Since space is mostly empty, there are very few particles that can transfer energy to spacecraft.
      - ✍ Sun's Corona has an extremely high temperature but very low density, so spacecraft interacts with fewer hot particles and doesn't receive as much heat.
      - ✍ It Means that while Parker Solar Probe will be travelling through space with temperatures of several million degrees, surface of heat shield that faces the Sun will only get heated to about 1,400 degrees Celsius. Shield uses a Thermal Protection System, (8 feet (2.4 meters) in diameter and 4.5 inches (about 115 mm) thick), allowing the other side of shield, the spacecraft body to be at comfortable 30 C.
  - ✍ Other Facts about mission -
    - ✍ Naming - Eugene Newman Parker is person on whose name the Mission is named. In mid 1950s, he proposed a number of concepts about how stars — including our sun — give off energy. He called this cascade of energy the solar wind.
    - ✍ Cost is approx \$1.5 Billion USD.
    - ✍ In its seven-year mission, Probe will make six more Venus flybys and 24 total passes by Sun, journeying steadily closer to Sun until it makes its closest approach at 3.8 million miles (6.16 million km ). It will be moving at roughly 430000 miles per hour, setting record of being the fastest human-made object ever.
    - ✍ It is expected to transmit its first science observations in December 2018.
62. ▶ University of Chicago (USA) identified a 'zombie' gene that makes elephants nearly immune to cancer. In response to DNA damage, a tumour-suppressing protein wakes up the non-functioning gene called LIF6 to kill cancer-prone cells.
63. ▶ 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.
64. ▶ ZSL (Zoological Society of London) Institute of Zoology conferred title of 'world's largest bird' to Coombe titan (meaning 'big bird' in Malagasy and Greek), believed to have weighed up to 800 kg and 3 metres tall.

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