



Presents

## Science & Technology Affairs July 2019

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### Science and Technology Affairs July 2019

#### Experimental antiviral drug for Nipah virus

- In a new study, researchers from the National Institutes of Health, U.S., have shown that Remdesivir was able to treat four African green monkeys which were given a lethal dose of Nipah virus. Remdesivir is a broad-spectrum antiviral drug which is currently in phase 2 clinical trial for the treatment of Ebola.

#### Himalayan knotweed latest threat to Nilgiris ecosystem

- One of the most recent invader knotweed native to the Himalayas has begun taking root in the upper slopes of the Nilgiris, potentially threatening biodiversity along streams and rivers. The species has begun spreading along many streams and rivulets in the district

#### China first to share satellite data with India on floods in Assam

- India received satellite data on its flood-hit regions from eight nations and China was the first to provide it as part of a multi-lateral mechanism for sharing space-based information for countries affected by natural or man-made disasters, the government said.

#### Brain-eating amoeba in North Carolina

- *Naegleria fowleri*, a single-celled organism known as the “brain-eating amoeba.” The amoeba is typically found in warm freshwater, and the majority of cases in the United States have occurred in Florida and Texas.

**Scientists develop method to convert Jute fibre into low-cost bio-degradable cellulose sheets:**

- Scientists in Bangladesh have developed a method to convert Jute fibre into low-cost bio-degradable cellulose sheets named 'Sonali' which can be used as wrapping material and carrying bag. The Eco-friendly jute poly bags made up of Sonali can be used in garments and food packaging work and they are not harmful for human health

**5.2 Space Science****France President announces creation of a new space force command**

- French President Emmanuel Macron announced the creation of a new national military space force command that will eventually be part of his country's air force. He called the renewed military focus on space a “true national security issue”.

**Russia sends telescope into space**

- Russia launched a space telescope from the cosmodrome in Baikonur, Kazakhstan, in a joint project with Germany. Since 2011, Russia has been the only country capable sending teams to the International Space Station (ISS). The next launch to the ISS is scheduled for July 20 and will carry an Italian and US astronauts together with a Russian cosmonaut.

**NASA tests launch-abort system for its moon mission**

- NASA carried out a successful test of a launch-abort system for the Orion capsule designed to take U.S. astronauts to the Moon. The three-minute exercise at Cape Canaveral in Florida aimed to test in almost real-life conditions the evacuation of astronauts from the capsule in the event of an explosion or rocket booster failure.

**Department of Space gets 15% boost in Union Budget 2019-20**

- Department of Space bags its highest budget share. The Budget 2019 has set aside Rs.12,473.26 crore about 15.6% higher amount than what was allocated for the 2018-19 fiscal. The newly formed Human Space Flight Centre - which spearheads the crewed Gaganyaan mission of 2022 - is part of this head.

**Total Solar Eclipse in South America**

- In the region of Coquimbo in Chile darkness descended during a total eclipse of the sun. The Moon's great shadow, or umbra, then passed over the Andes and across to Argentina. The rest of Chile, as well as Peru, Ecuador, Paraguay, Bolivia, Uruguay, and parts of Colombia, Brazil, Venezuela and Panama, witnessed a partial eclipse.

**DRDO gets clearance for missile test facility in Andhra Pradesh**

- The Ministry of Environment, Forest and Climate Change (MoEFCC) has granted environment and Coastal Regulatory Zone clearances for setting up Missile Testing Launch Facility on the Bay of Bengal coast and Technical Facility at Gullalamoda village in Krishna district. With this, all necessary clearances to begin the construction work have been obtained by the Defence Research and Development Organisation (DRDO).

**Gaganyaan National Advisory Council**

- The Gaganyaan project is on track to be realized by the 75th Independence day (2022) or earlier. The design and configuration of major subsystems are finalised. The qualification tests pertaining to human rating of flight systems has commenced and Cryogenic Engine tests are in progress. The crew training plan is finalised and the crew selection process has commenced. A Gaganyaan National Advisory Council has been created with members from different institutions and industries.

**Neutrino Observatory**

- The Government of India has approved a project to build the India-based Neutrino Observatory (INO) at Pottipuram in the Theni District of Tamil Nadu. Briefly, the project aims to set up a 51000 ton Iron Calorimeter (ICAL) detector to observe naturally occurring atmospheric neutrinos in a cavern at the end of an approximately 2 km long tunnel in a mountain. This will help to reduce the noise from cosmic rays that is ever present over-ground and which would outnumber the rare neutrino interactions even in a detector as large as ICAL.

**Japan's Hayabusa2 probe makes touchdown on asteroid**

- Japan's Hayabusa2 probe made a "perfect" touchdown on a distant asteroid, collecting samples from beneath the surface of Ryugu in an unprecedented mission that could shed light on the origins of the solar system. Ryugu, which means "Dragon Palace" in Japanese, refers to a castle at the bottom of the ocean in an ancient Japanese tale.

**ISRO calls off Chandrayaan 2 launch**

- India's ambitious second Lunar mission, Chandrayaan 2 suffered a jolt in the early hours of July 15 after a technical snag forced the Indian Space Research Organisation to call off the launch for the time being. ISRO aimed to touch down on the South Pole of the moon where no country had gone before.
- A technical snag was observed in launch vehicle system one hour before the launch. As a measure of abundant precaution, Chandrayaan 2 launch has been called off. Revised launch date will be announced later," ISRO tweeted. President Ram Nath Kovind had flown in to Sriharikota to witness the launch.

**ISRO's commercial arm launched 239 satellites in last 3 years**

- A total of 239 satellites were launched by ISRO's commercial arm Antrix Corporation in the last three years, garnering revenue of Rs. 6,289 crore.

**50th anniversary of first moon landing**

- On July 20, 1969, American astronauts Neil Armstrong and Edwin "Buzz" Aldrin became the first humans ever to land on the Moon aboard the Apollo 11 mission. The Apollo 11 mission occurred eight years after President John F. Kennedy (1917—1963) announced a national goal of landing a man on the moon by the end of the 1960s. Apollo 17, the final manned moon mission, took place in 1972.

**Chandrayaan-2 launch on July 22**

- The Indian Space Research Organisation (ISRO) said that Chandrayaan-2 will be launched on July 22 at 2.43 p.m. The launch was earlier scheduled for July 15 but was called off just an hour before take-off. The mission includes India's first lander and rover, which are slated to land on the Moon on September 6.

**GSLV MkIII-M1 Successfully Launches Chandrayaan-2 spacecraft**

- India's Geosynchronous Satellite Launch Vehicle GSLV MkIII-M1, successfully launched the 3840 kg Chandrayaan-2 spacecraft into an earth orbit. GSLV Mk III is a three-stage launch vehicle developed by ISRO. The vehicle has two solid strap-ons, a core liquid booster and a cryogenic upper stage.
- The mission objective of Chandrayaan-2 is to develop and demonstrate the key technologies for end-to-end lunar mission capability, including soft-landing and roving on the lunar surface. On the science front, this mission aims to further expand our knowledge about the Moon through a detailed study of its topography, mineralogy, surface chemical composition, thermo-physical characteristics and atmosphere leading to a better understanding of the origin and evolution of the Moon.

**NASA prepares to send “first woman and next man” on Moon in 2024**

- The U.S. space agency NASA is preparing to take its next giant leap with the ambitious Artemis programme that could see the “first woman and the next man” walk on the lunar surface. Artemis is named after the twin sister of Apollo who is also the Goddess of the Moon and the hunt. The programme to return astronauts to the lunar surface is planned to launch by 2024, according to the U.S. space agency.

**ISRO’s solar mission Aditya-L1**

- ISRO has planned to launch the mission during the first half of 2020. Aditya-L1 is meant to observe the Sun’s corona. It will image and study the sun from the First Lagrange point also known as L1 Lagrange point.

**Pakistan to launch its first astronaut in 2022**

- Pakistan announced that it will send its first astronaut to space in 2022 using close ally China’s satellite launch facilities. Fawad Chaudhry, Pakistan’s Minister for Science and Technology, said the selection process of the astronaut for the space mission would start from February 2020.

**MIDHANI’s role in Chandrayaan-2**

- The Hyderabad based Mishra Dhatu Nigam Limited (MIDHANI) has played a role in the celebrated Chandrayaan-2 Mission. It developed and supplied materials for Cryogenic Engine (CUS) of GSLV Mk III, a three-stage heavy lift launch vehicle, developed by the Indian Space Research Organisation (ISRO) for launch of the Chandrayaan-2 spacecraft.

**5.3 App/ Web Portal/ Toll Free****ODF-Plus& Swachh Gram Darpan Mobile Application launched**

- Shri Rattanlal Kataria, Minister of State, Ministry of Jal Shakti launched the Solid Liquid Waste Management (SLWM) Dashboard, ODF-Plus Advisory and the ODF-Plus & Swachh Gram Darpan Mobile Application to foster healthy competition between States and districts undertaking ODF-plus activities.

**Dashboard for effective monitoring on Key Initiatives of Defence Production**

- Defence Minister Shri Rajnath Singh launched a Dashboard of Department Defence Production (DDP), Ministry of Defence, to help in effective monitoring of various initiatives and schemes of the department. The dashboard is available for the general public at [www.ddpdashboard.gov.in](http://www.ddpdashboard.gov.in).

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