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SCIENCE CENTRE

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WHAT'S NEW IN SCIENCE?

Meet Avataar: India's first amphibious drone that can fly, dive and spy

Bengaluru -based start up AquaAirX was launched 'Avataar', described as India's first amphibious drone capable of air and underwater missions.

The vehicle is making headlines following its official launch on March 5, 2026. Unlike traditional drones that are restricted to the skies, Avataar is surveillance-class vehicle engineered to operate with equal efficiency both in air and deep underwater. This seamless transition between domains represents a massive leap for Indian Defence and Research Technology.

Gouthami TS, Founder and CEO of AquaAirX, told that building such a machine requires a three layer defence against the Sea. She explained that the drone uses a Carbon fibre body that saltwater cannot rust, paired with specialized coatings that repel salt and gunk from the sensors.

Avataar is designed to handle missions that

were previously thought impossible for a single unit. By combining the agility of a quadcopter, which is an unmanned helicopter with four rotors, with the pressure-resistant build of a submarine, it offers real-time situational awareness across air and sea. For the Indian

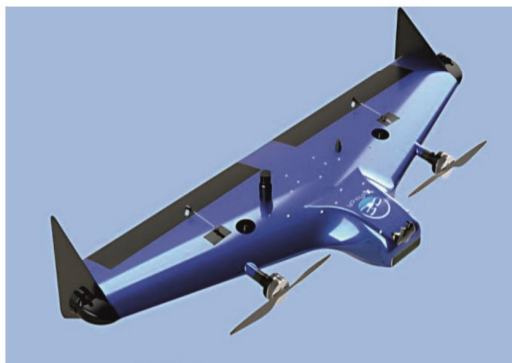
Navy and Coast Guard, this means a single tool can now track a vessel from the clouds and then dive beneath the waves to inspect its hull or search for underwater threats.

Avataar uses a collection of smart tools. Since cameras cannot see well in dark or muddy water. so, it sends out sound pulses that bounce off objects and return to the

drone. By timing these echos, the drone creates a 3D map of its surroundings. It has high-tech speedometer to ensure it does not drift away with ocean currents and communication is handled through sound pulses.

Source:<https://www.indiatoday.in/science/story/amphibious-drone-avataar-aquaairx-air-water-surveillance-price-specifications-india-first-science-news-2878143-03-06>

Author:Radifah Kabir on 6 March 2026



SCIENTIST OF THE MONTH

Dr. Bantval Jayant Baliga

Dr. Bantval Jayant Baliga was born on 28 April 1948 in Jalahali, Bangalore. He received B. Tech in Electrical Engineering from the Indian Institute of Technology, Madras in 1969. He did M. S degree and Ph. D in Electrical Engineering from the Rensseler Polytechnic Institute.

Dr. Bantval is an Indian Electrical Engineer best known for his work in power semi conductor devices and particularly the invention of the insulated gate bipolar transistor (IGBT).

Dr. Bantval was elected as a member into

the National Academy of Engineering for contributions to power semiconductor devices leading to the advent of smart power technology in 1993.

Bantval received IEEE Newell Award in 1991, IEEE Morris N. Liebmann Memorial Award in 1993, IEEE J. J Ebers Award in 1998, IEEE Lamme Medal in 1999, the National Medal of Technology and Innovation in 2011, the IEEE Medal of Honor in 2014, the Global Energy Prize in 2015, the National Inventors Hall of Fame in 2016, the Millennium Technology Prize in



2024.

Main Source:
https://en.wikipedia.org/wiki/B_Jayant_Baliga

SCIENCE FACTS APRIL 2026



Timings

Tuesday to Sunday
& Public Holidays
9.30 am to 4.30 pm

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1 April 1865	:	Austrian -born chemist Richard Adolf Zsigmondy (Made research in colloids) was born.
1 April 1976	:	Jovian - Plutonian gravitational effect is first reported by the Astronomer Patrick Moor
2 April	:	World Autism Awareness Day. (UN)
3 April 1973	:	The first portable cell phone call was made in New York City, United States.
3 April 1984	:	Indian Astronaut Mr.Rakesh Sharma travelled into the Space.
5 April 1929	:	Norwegian Physicist Ivar Giaever (Co-winner of the 1973 Nobel Prize in Physics for their discoveries regarding tunnelling phenomena in solids) was born.
6 April 1911	:	German Biochemist Feodor Felix Konrad Lynen (Made discoveries concerning the mechanism and regulation of cholesterol with Konrad Bloch) was born.
6 April 1949	:	German -born Physicist Horst Ludwig Stormer (Co-winner of the 1998 Nobel Prize in Physics for their discovery of a new form of quantum fluid with fractionally charged excitations) was born.
6 April 1965	:	Launch of Early Bird, the first Communications Satellite to be placed in Geosynchronous Orbit.
7 April 1944	:	Japanese Physicist Makoto Kobayashi (Co-winner of the 2008 Nobel Prize in Physics for the discovery of the origin of the broken symmetry which predicts the existence of the least three families of quarks in nature) was born.
8 April 1911	:	American Chemist Melvin Calvin (Discoverer of Calvin Cycle) was born.
10 April 1927	:	American Scientist Marshall Warren Nirenberg was born
12 April 1955	:	The Polio Vaccine, developed by Dr. Jonas Salk was declared safe and effective.
15 April 1874	:	German Physicist Johannes Stark (Discoverer of the Doppler effect in canal rays and the splitting of spectral lines in electric field) was born.
15 April 1961	:	American molecular biologist Carol W. Greider (Co-winner of the 2009 Nobel Prize in Physiology/ Medicine for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase) was born.
16 April 1728	:	Scottish Chemist Joseph Black (Known for his discoveries of magnesium, latent heat/ specific heat. and carbon dioxide) was born.
18 April 1905	:	American Scientist George H. Hitchings (Co-winner of the 1988 Nobel Prize in Physiology/Medicine for their discoveries of important principles for drug treatment) was born.
20 April 1927	:	Swiss physicist Karl Alexander Muller (Worked for superconductivity in ceramic materials) was born.
22 April	:	International Earth Day.
22 April 1909	:	Italian neurologist Rita Levi-Montalcini (Co-discoverer of nerve growth factor NGF) was born.
23 April 1858	:	German Physicist, Max Planck (who wrote the Planck Constant) was born
25 April	:	World Malaria Day (WHO)
25 April 1935	:	Canadian Physicist James Peebles (Co-winner of the 2019 Nobel Prize in Physics for theoretical discoveries in physical cosmology) was born.
27 April 1959	:	American biologist Andrew Z. Fire (Co-winner of the 2006 Nobel Prize in Physiology/ Medicine for their discovery of RNA interference-gene silencing by double-strand RNA) was born.
27 April 1962	:	Norwegian neuroscientist Edvard I. Moser (Co-winner of the 2014 Nobel Prize in Physiology/ Medicine for their discoveries of cells that constitute a positioning system in the brain) was born.

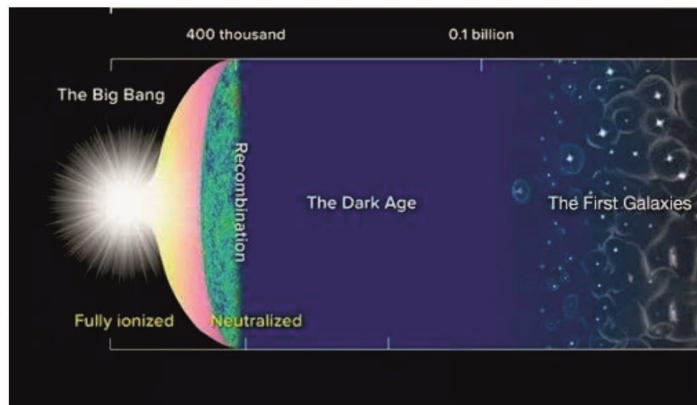
Answers: 1) a, 2) d, 3) c, 4) b, 5) c

SCIENTIFIC QUESTION

What is Big Bang?(part-6)

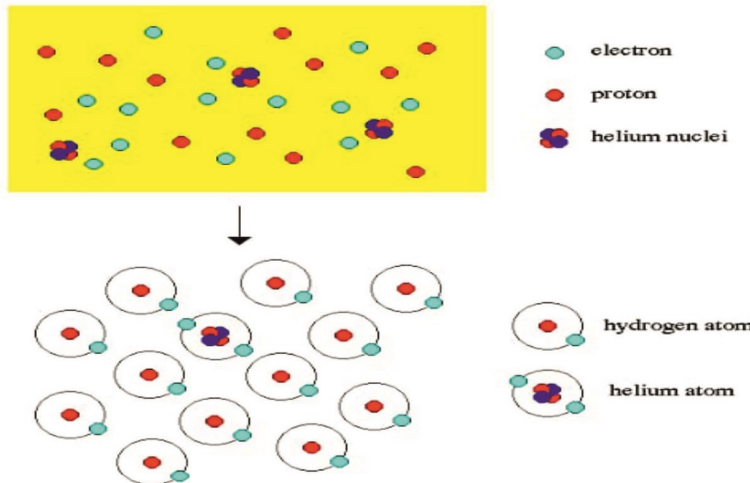
7) Matter Era and Epochs

The matter era-dominated era began roughly 47,000 to 50,000 years after the Big Bang, when the mass-energy density of matter overtook that of radiation. It followed the radiation era allowing gravity to begin forming structure and lasted until dark energy became dominant, billions of years later. The matter era is characterized by the formation of the first atomic structure and the subsequent development of large scale cosmic structure.



Recombination

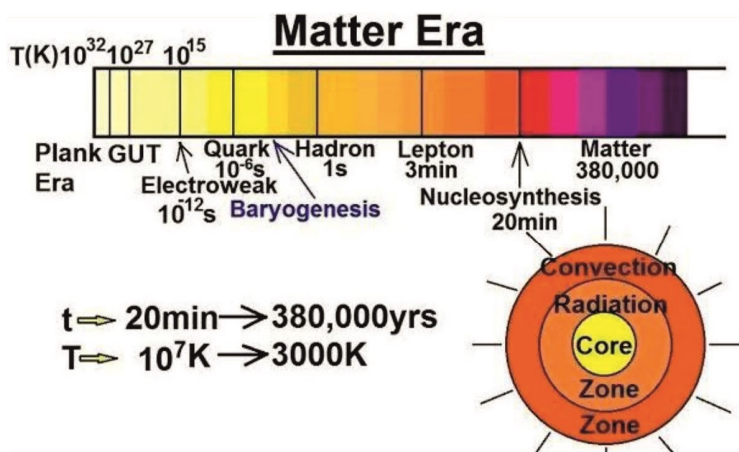
As the Universe expands and cools, protons and electrons combine to form hydrogen (the most abundant element). And helium nuclei combine with electrons to form helium atoms. This process is called recombination.



Recombination:

Time period:
from 2,40,000 to 3,00,000 years

As the temperature of the universe falls to around 3000 degrees (about the same heat as the surface of the Sun) and its density also continues to fall, ionized hydrogen and helium atoms capture electrons (known as recombination) thus neutralizing their electric charge with the electrons now bound to atoms, the universe finally becomes



transparent to light, making this the earliest epoch observable today. It also releases the photons in the universe which have up till this time been interesting with electrons and protons in an opaque photon-baryon fluid (known as "decoupling"), and these photons (the same ones we see in today's cosmic background radiation) can now travel freely. By the end of this period the universe consists of a fog of about 75% hydrogen and 25% helium, with just traces of lithium.

Dark Ages:

Time Period:
From 3,00,000 to 150 million years
The first quasars form from gravitational collapse and the intense radiation they emit reionizes the surrounding universe, the second of two major phase changes of hydrogen gas in the universe (the first being the recombination period). From this point on, most of the universe goes from being neutral back to being composed of ionized plasma.

Main Source and Image:
https://www.physicsoftheuniverse.com/topics_bigbang_timeline.html

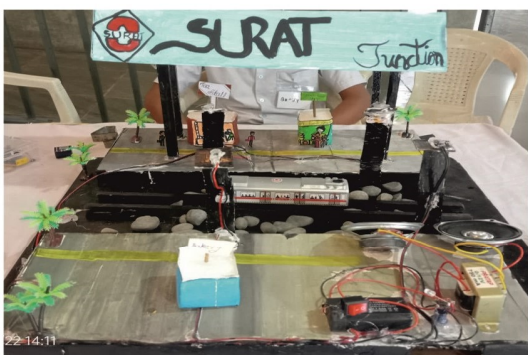
SCIENCE FAIR-2025

Surat Municipal Corporation had organized "Science Fair- 2025" at Art Gallery, Science Centre Stuart on 22nd and 23rd August, 2025 for students of Std. 8 to 12. T & T. V Sarvajanik High School had participated in Science Fair with their project on "Sound Sparks" under the sub theme of "Empowering Youth for Viksit Bharat".

The aim of the project was to design a model that demonstrates how unwanted noise pollution from railway stations, traffic and public places can be converted into useful electrical energy, stored and used for small-scale applications such as lightning and signaling.

Noise pollution is one of the major problem of modern society. Busy public places like railway stations, traffic signals, highways and airports constantly generate a very high level of noise energy between 80-120 decibels. This energy is completely wasted and even harmful to humans. Prolonged exposure leads to stress, headaches, hearing loss and environment disturbance.

But from the scientific point of view, sound is a form of energy. Energy can be transformed into another form by using the correct medium. In this project, microphones or speaker diaphragms are placed in railway station to capture high- intensity sounds from trains,



announcements and crowd noise. the sound vibrations are converted into alternating current (AC) by the coil and magnet mechanism of the speaker.

Since this raw current is unstable and very small, it is passed through a transformer to regulate voltage, then through a bridge rectifier to convert AC into DC, and a capacitor is added to smooth the flow of current. Finally, the energy is stored in a rechargeable battery, which powers LED lights in the project model.

Advantages:

- 1) Utilizes wasted sound pollution
- 2) Provides renewable and eco-friendly energy
- 3) Can reduce electricity bills at public places.

KNOW THE ENTERING INTO SPACE GALLERY EXHIBIT

International Space Laws(Selected)

No country can claim of sovereignty of any celestial body, by means of use or occupation. This exhibit is situated at "Entering Space Gallery" between Fun Science Gallery and Power of Play Gallery at First Floor of Science Centre.



QUIZ

1. Who gave the theory of relativity?
a) Albert Einstein b) John Kepler c) Stephen Hawking d) William Herschel
2. Galileo discovered the four largest moons of which planet?
a) Uranus b) Neptune c) Saturn d) Jupiter
3. Which astronomical unit is used to measure spatial distances?
a) Aeronautical mile b) Kilometer c) Light years d) Mile
4. What is the approximate temperature of the Sun's core?
a) 13,92,000 K b) 15 crore K c) 30,000 K d) 6000 K
5. What is Einstein's mass-energy formula?
a) $E = \Delta mc$ b) $E = \Delta m^2c$ c) $E = \Delta mc^2$ d) $E = 1/2mc^2$

Main Source: Navneet MCQs Science and Technologies. Std 10