Sree Narayana Training College, Nedunganda

SCIENCE REMINISCE

Volume : 3

A Science Trip Down The Memory lane 2022

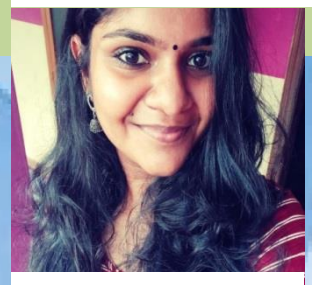
28 February 2023

Bygone Scientific Extravaganza 2022

As 2022 has come to an end, we look back on an era stuffed heavily with ground breaking discoveries. In the past 10 years, scientists around the world had made remarkable progress towards understanding the human body, our planet, and the cosmos that in the decade to come. Through this surrounds scientific discoveries and passing of milestones. We've put our heads. together to identify the trends and milestones that we found especially noteworthy, and that we think will set the stage for more amazing discoveries tabloid, we unveil before you the most significant breakthroughs in 2022.

Editor→ **Dr.VIJI.V**

Sub Editors



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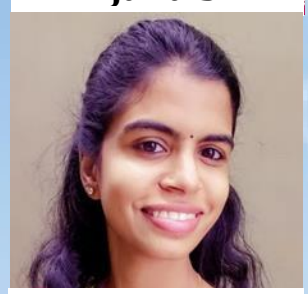

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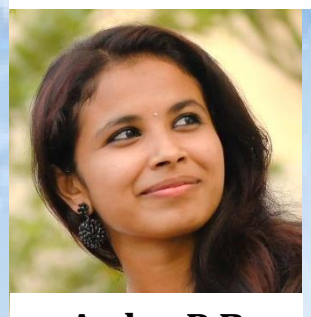

Ardra P B

JANUARY

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KRISHNAPRIYA.S

JANUARY 1

Israel reports, for the first time, a case of flurona, a rare mixture of coronavirus and influenza infections

JANUARY 3

Open Alex, a free online index with metadata about over 200 million scientific documents is launched.

JANUARY 6

Astronomers report the first direct detection of pre-supernova activity in a red supergiant star before a Type II supernova (SN 2020tlf).

JANUARY 10

The first successful xenogeneic heart transplant, from a genetically modified pig to a human patient, is reported in the United States.

JANUARY 11

The first known deformation of an exoplanet is detected by the CHEOPS mission, the planet shaped like ellipsoid.

JANUARY 12

The 14 million year old Local Bubble drives nearby young star formation.

JANUARY13

NASA reports that Earth's global average surface temperature in 2021 was tied with 2018 as the sixth warmest on record.

JANUARY 18

- Europe's first quantum annealer with more than 5,000 qubits is launched in Jülich, Germany
- A study suggests and defines a 'planetary boundary' for novel entities such as plastic- and chemical pollution and finds that it has been crossed.

Europe's first quantum annealer

JANUARY 19

In a first global assessment, scientists report that antibiotic resistance may have contributed to ~4.95 million deaths in 2019.

JANUARY 20

As a part of the Seabed 2030 Project, a major new coral reef off the coast of Tahiti in "pristine".

JANUARY 24

A chip with molecular circuit components in single-molecule (bio)sensors is demonstrated.

JANUARY 25

Detection of the closest MERS-CoV relative in bats to date, NeoCoV, and PDF-2180-CoV that can efficiently use bats' ACE2 for cell-entry.

JANUARY 26

➢ The first laparoscopic surgery performed entirely by a robot is reported.

➢ Development of a technology for searching the planetary collection of nucleic acid sequences.

FEBRUARY

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NAZY NAZAR

FEBRUARY 1

Samsung Surpasses Intel as World's Top Semiconductor Company In 2021.

FEBRUARY 3

Global Centre of Excellence in Affordable and Clean Energy launched in IIT Dharwad.

FEBRUARY 4

IISc. commissions one of India's most powerful supercomputers 'Param Pravega'.

FEBRUARY 8

NASA will retire International Space Station in 2031.

FEBRUARY 16

ISRO decommissioned INSAT-4B through 11 Re-orbiting manoeuvres.

INSAT 4B

FEBRUARY 21

UK's researchers found 180-Million-Year-Old Fossil of 'Sea Dragon'.

FEBRUARY 22

Corona vaccine Corbevax Gets emergency approval for 12-18 age group by DGCI.

FEBRUARY 23

The Government of India has organised a week-long science exhibition titled 'Vigyan Sarvatra Pujyate' from February 22 to 28, 2022.

FEBRUARY 24

Reliance Jio's New Subsea Cable 'India- Asia- Xpress' To Connect Maldives.

FEBRUARY 25

IBM unveiled new Cyber security Hub in Bengaluru to address cyber attack.

MARCH

Compiled by
REVATHY G S

MARCH 1

Development of a solar panel integrated system that, using a hydrogel, cools the panel or produces fresh water to irrigate enclosed crops.

MARCH 2

Development of a system that combines the MOST solar thermal energy storage system with a chip-sized thermoelectric generator.

MARCH 8

Researchers report SARS-CoV-2 variant recombinant viruses that contain elements of Delta and Omicron – Deltacron (also called "Deltamicron").

MARCH 9

Using graphene and molybdenum disulfide, Chinese scientists create a transistor gate.

MARCH 11

Researchers demonstrate electrostatic dust removal from solar panels.

MARCH 12

Biomedical gerontologists demonstrate a mechanism of anti-aging senolytics, in particular of Dasatinib plus Quercetin (D+Q).

MARCH 16

Researchers report that over 80% of the growth of methane emissions during 2010–2019 was caused by tropical terrestrial emissions.

MARCH 23

A far-UVC (ultraviolet light) air purification system is demonstrated which can reduce levels of an airborne pathogen by 98% within minutes.

MARCH 24

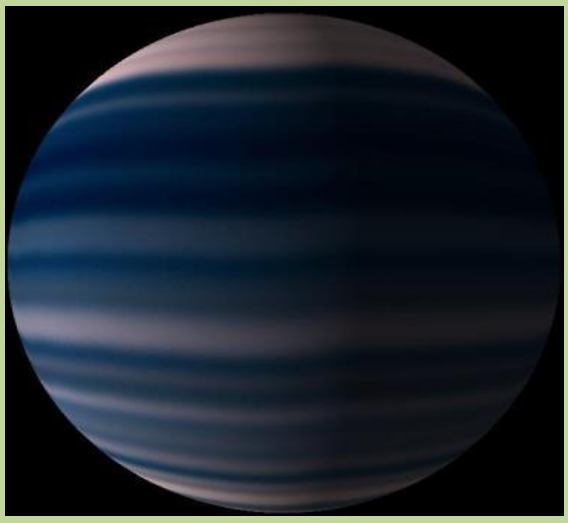
A physical speed limit for electronic computers, optoelectronics, of approximately one petahertz (1015 Hz) is reported.

MARCH 30

WHL0137-LS(Earendel) the farthest individual star ever discovered.

MARCH 31

Astronomers report the discovery of K2-2016-BLG-0005Lb as the most distant exoplanet found by Kepler to date, at 17,000 light years.



K2-2016-BLG-0005Lb

APRIL

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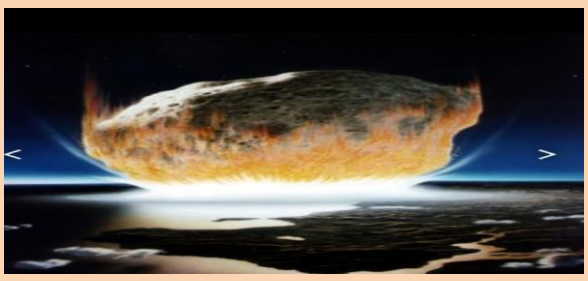
APRIL 5

If "quintessence" is an explanation for dark-energy and current data is true as well, the world may start to end within the next 100 My.



APRIL 6

U.S. Space Command confirms the detection of the first known interstellar meteorite, technically known as CNEOS 2014-01-08.

APRIL 7

Astronomers report the discovery of HD1, considered to be the

earliest and most distant known galaxy yet identified in the observable universe.

APRIL 8

Researchers show air pollution in fast-growing tropical cities caused many deaths, proposing "regulatory action targeting emerging anthropogenic sources".

APRIL 14

GNz7q, a distant starburst galaxy, is reported as being a "missing link" between supermassive black holes and the evolution of quasars.

APRIL 19

NASA publishes its Planetary Science Decadal Survey for 2023-2032. The future mission recommendations include a Uranus orbiter and the Enceladus Orbilander.

APRIL 20

Micronovae, a previously unknown class of thermonuclear explosions on the surface of white dwarfs, are described for the first time.

APRIL 22

The Large Hadron Collider recommences full operations, three years after being shut down for upgrades.

APRIL 26

Scientists report the detection of meteriotic nucleobases and claim that they could serve as "building blocks of DNA and RNA on the early Earth".

APRIL 27

Researchers use software for computer-aided chemical synthesis design by recycling.

MAY

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JEENA NAJEEB

MAY 5

IIT Bombay and IMD signed MOU to develop user-friendly weather forecasting app

MAY 6

ISRO plans mission to Venus by Dec 2024

MAY 11

Green Satellite Propulsion tested by Bellatrix Aerospace

MAY 16

Gaganyaan Mission 2023: S2000 human-rated rocket booster tested successfully

MAY 21

Skyroot Aerospace successfully test fires its rocket engine

China Plans World's First Habitable Planet Search With Space Telescope

MAY 23

Dr. Jitendra Singh, Launches 'BioRRAP' Portal for Biotech Researchers

MAY 26

Param Porul supercomputer inaugurated at NIT Tiruchirappalli

MAY 27

India to introduce made in India TB infection skin test called "c-TB"

MAY 30

Jaisalmer: Adani Green commissions India's first wind-solar hybrid power facility

JUNE

Compiled by

SARGA SUNIL

JUNE 3

The NOAA reports that the global concentration of carbon dioxide in Earth's atmosphere is now 50% greater than in pre-industrial times,

JUNE 8

Observation of the axial Higgs mode, a Higgs boson-like excitation in a charge density wave material, is reported.

Scientists detects various alien technosignatures.

JUNE 9

Researchers report a robotic finger covered in a type of manufactured living human skin

JUNE 10

The core of the globular cluster NGC 3201 is shown to harbor a sub-cluster of nearly a hundred black holes.

JUNE 13

Groups of academics report how global science community could help Ukraine via an action plan, including for helping organizing (re)vitalization of Ukrainian science and reconstruction in the future.

JUNE 15

Astronomers identify J1144 as the fastest-growing black hole of the last nine billion years, consuming matter equivalent to one Earth every second, as well as being the most luminous quasi-stellar object of that period.

JUNE 20

A study suggests global food miles CO_2 emissions are 3.5–7.5 times higher than previously estimated.

JUNE 22

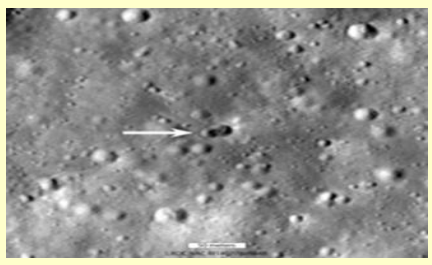
Agilicious, an open-source and open-hardware versatile standardized quadrotor drone, currently tailored toward agility, is released. The world's first quantum computer integrated circuit is demonstrated.

JUNE 23

Researchers report the controlled growth of diverse foods in the dark via solar energy and electrocatalysis-based artificial photosynthesis as a potential way to increase energy efficiency of food production and reduce its environmental impacts.

JUNE 24

NASA publishes images showing an unexpected and unexplained double crater from what is thought to be the first time human space debris.



JUNE 25

A study indicates that the Arctic is warming four times faster than global warming now, substantially faster than current CMIP6 models could project.

JUNE 27

Living review like website adds 11 new CCM solutions to its organized set of mitigation techniques.

JUNE 28

Physicists report that interstellar quantum communication by other civilizations is used for identifying some potential challenges and factors for detecting such.

JUNE 30

Samsung announces the first mass production of computer chips using a 3 nm process.

JULY

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SARANYA P SIVA

JULY 1

Scientists show why climate benefits from nature restoration are "dwarfed by the scale of ongoing fossil fuel emissions.

JULY 4

Scientists report that heatwaves in western Europe are increasing "three-to-four times faster compared to the rest of the northern mid latitudes over the past 42 years"

JULY 5

The LHCb collaboration observes three never-before-seen particles: a new kind of "pentaquark" and the first-ever pair of "tetraquarks", which includes a new type of tetraquark.

JULY 8

Astronomers report the discovery of massive amounts of prebiotic molecules, including precursors for RNA, in the Galactic Center of the Milky Way Galaxy.

JULY 9

Researchers report the development of an efficient, secure and convenient method to separate, purify, store and transport large amounts of hydrogen for energy storage in renewables-based energy systems as powder using ball milling.

JULY 12

NASA releases the first suite of images from the now fully operational James Webb Space Telescope, a day after releasing the Webb's First Deep Field, the image of early universe with the highest resolution

JULY 13

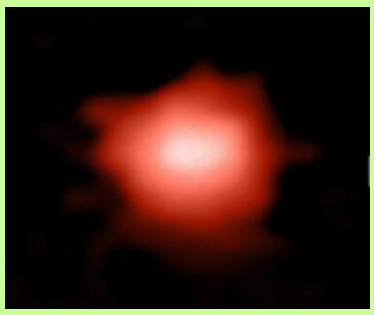
The discovery of fast radio burst FRB 20191221A

JULY 14

NASA presents images of Jupiter and related areas captured, for the first time, and including infrared views, by the telescope

JULY 19

Scientists report what could be the earliest and most distant galaxy ever discovered-GLASS-z12.



JULY 20

Scientists report that SARS-CoV-2 builds tunneling nanotubes from nose cells to gain access to the brain.

JULY 25

Researchers introduce the concept of necrobotics and demonstrate it by repurposing dead spiders as robotic grippers.

JULY 29

In a preprint, scientists from the Galileo Project describe a planned expedition to retrieve small fragments of interstellar meteor CNEOS 2014-01-08.

AUGUST

Compiled by

ARYA DEVI R S

AUGUST 10

ISRO has successfully tested the Low Altitude Escape Motor that will power the Crew Escape System and save Gaganyaan astronauts in case of an emergency.

AUGUST 11

A bioengineered cornea made from pig's skin is shown to restore vision to blind people.

AUGUST 16

Government launched the "Manthan Platform" to meet India's sustainability goals.

AUGUST 17

Researchers report the development of floating artificial leaves for light-driven hydrogen and syngas fuel production.

AUGUST 25

The James Web telescope captured clear photographic evidence of carbon dioxide gas on planet WASP-39b, an exoplanet beyond our solar system.

AUGUST 26

Synthetic embryo grown without sperm, womb.

SEPTEMBER

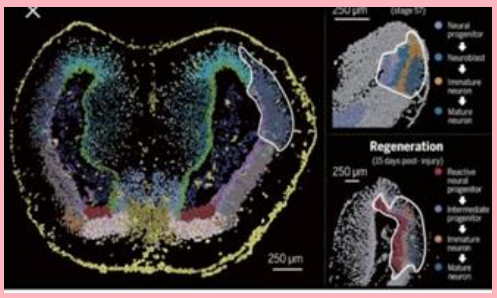
Compiled by
LEKSHMI L

SEPTEMBER 1

The NASA's James Webb Space Telescope takes its first direct images of a planet beyond our Solar System. The exoplanet, HIP 65426 b, is revealed in different bands of infrared light.

SEPTEMBER 2

A first spatiotemporal map reveals key insights about axolotl brain regeneration.



SEPTEMBER 5

Researchers RIKEN in Japan report the development of remote controlled cyborg cockroaches functional if moving to sunlight for recharging.

SEPTEMBER 6

The U.S. Department of Agriculture approves a new purple tomato, genetically modified to alter its colour and enhance its nutritional quality.

SEPTEMBER 7

A new malaria vaccine developed by the University of Oxford is shown to be ~80% effective at preventing the disease.

SEPTEMBER 8

A study adds to the accumulating research indicating post exposure antiviral TIPs could be an effective countermeasure that reduces COVID-19 transmission.

SEPTEMBER 9

News outlets report about a study that describes a way by which geothermal power plants could store their energy within their reservoirs for dispatch to (better) help manage intermittency of solar and wind

SEPTEMBER 19

Scientists reports geochemical modeling results that confidence for for the ocean of Saturn's moon Enceladus being habitable or meeting abiogenesis-requirements.

SEPTEMBER 20

Scientists who reported the earliest known Interstellar objects, CNEOS 2014-01-08,and members of The Galileo Project, report the discovery of an additional candidate Interstellar meteor, CNEOS 2017-03-09,in a preprint using the same fireball catalogue.

SEPTEMBER 26

NASA's DART crashes into the asteroid Dimorphos in a first test of potential planetary defense. Success of path alteration is reported on 11 October.

SEPTEMBER 27

A study finds that drinking two to three cups of ground, instant, or decaffeinated coffee each day is associated with a longer lifespan and lower risk of cardiovascular disease compared with avoiding coffee.

SEPTEMBER 28

A breakthrough in treating Alzheimer's disease is reported by pharmaceutical companies Eisai and Biogen, using a drug called lecanemab, which is designed to remove beta-amyloid proteins from the brain.

SEPTEMBER 30

The discovery of "super neurons" in the entorhinal cortex of people over age 80 who show exceptional episodic memory is reported.

OCTOBER

Compiled by
LEKSHMI SURENDRAN

OCTOBER 1

A new simulation by NASA finds that the Moon likely formed within a matter of hours, as opposed to earlier theories that proposed a much longer period of months or years.

OCTOBER 4

Edmonton Police Service reports the use of DNA phenotyping to generate 3D facial images of crime suspects.

OCTOBER 5

The New York Times summarizes those awarded Nobel Prizes in the Sciences for the year 2022:

- Physiology or Medicine (October 3): Svante Pääbo for discoveries involving genomes of extinct hominins
- Physics (October 4): Alain Aspect, John F. Clauser and Anton Zeilinger for work in quantum technology
- Chemistry (October 5): Carolyn R. Bertozzi, Morten Meldal and K. Barry Sharpless for studies on click chemistry and bioorthogonal chemistry.

OCTOBER 7

News outlets report about a study published on 28 September theorizing that the supercontinent Amasia will form within 300 million years when the Pacific Ocean closes.

OCTOBER 19

A novel type of effective hydrogen storage using readily available salts is reported.

OCTOBER 20

The first data transmission to exceed 1 petabit per second (Pbit/s) using only a single laser and a single optical chip is demonstrated by European researchers.

OCTOBER 21

News outlets report about a novel agricultural robot for viable weed control using lasers or "laserweeding".

OCTOBER 25

A comprehensive annually scheduled study finds climate change is "undermining every dimension of global health monitored" and reports dire conclusions from tracking of impact indicators.

OCTOBER 26

A study concludes that cosmic radiation events in the tree-ring radiocarbon record called "Miyake events", don't appear to be caused by the solar cycle (i.e. solar flares) as thought previously and have extended durations. They occurred every ~1,000 years on average and may threaten global technologies this century.

NOVEMBER

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ADITHYA A J

NOVEMBER 3

Astronomers using the IXPE space observatory report that 4U 0142+61, a magnetar found 13,000 light-years from Earth, has a solid surface with no atmosphere.

NOVEMBER 4

The discovery of Gaia BH1, a binary system containing what is likely the closest known black hole to Earth, is reported by astronomers in the U.S

NOVEMBER 6

The 2022 United Nations Climate Change Conference (COP27) on climate change mitigation takes place in Sharm el-Sheikh, Egypt.

NOVEMBER 9

IBM unveils its 433-qubit 'Osprey' quantum processer, the successor to its Eagle

NOVEMBER 10

A study describes how one may eventually be able to detect (distinguish) wormholes, suggesting they may have never been observed because they appear very similar to black holes.

NOVEMBER 11

The Global Carbon Project reports that carbon emissions in 2022 remain at record levels, with no sign of the decrease that is needed to limit global warming to 1.5 °C.

NOVEMBER 12

Astronomers, using the Hubble Space Telescope, report the discovery of one of the most metal-poor galaxies known. This nearby dwarf galaxy, 20 million light years away and 1,200 light-years across, is named HIPASS J1131–31(nicknamed the "Peekaboo" galaxy).

NOVEMBER 16

•NASA conducts the first uncrewed flight of its Space Launch System (SLS), the largest rocket in history. The on board Orion capsule will orbit the Moon before returning to Earth, as a demonstration of planned human missions.

• A satellite-free GPS-alternative higher-resolution positioning system using existing telecommunications networks is demonstrated, Super GPS.

NOVEMBER 22

•The International Bureau of Weights and Measures announces it will phase out the leap second by 2035.

•Photochemistry is confirmed on an exoplanet for the first time, as the James Webb Space Telescope detects a range of signatures including sulfur dioxide in the atmosphere of WASP-39b.

NOVEMBER 29

Canadian mineralogists discover two new minerals, Elkinstantonite and Elaliite, on the 15-tonne El Ali meteorite that grounded in Somalia.

NOVEMBER 30

An electrolysis system for viable hydrogen production from seawater without requiring a pre-desalination process, which could make it less flexible and more costly, is reported.

DECEMBER

Compiled by
ARYA R. NATH

DECEMBER 1

Using James Webb Space Telescope, clouds likely made of methane, moving across Saturn's moon Titan were viewed.

DECEMBER 5

The construction of largest telescope, Square Kilometer Array was started.

Square kilometer array

DECEMBER 7

Oldest DNA was discovered in Greenland

DECEMBER12

Scientist at the University of California described a new method to break up so called "forever chemicals" by infusing contaminated water with hydrogen, then blasting it with high energy, short wavelength ultraviolet light.

DECEMBER 13

The Newborn Genomes Programme is announced by the UK government. It involves the whole genome sequencing of 100,000 newborns.

Scientists at the National Ignition Facility reported a net energy gain in the development of fusion power.

DECEMBER 15

Astronomers find that a pair of exoplanets orbiting the red dwarf star Kepler-138 are likely to be water worlds.

Scientists in China developed an edible plant based ink derived from food waste which could be used in 3D printing of scaffolds to reduce the cost of cultured meat.

DECEMBER 19

A new world record on solar cell efficiency for a silicon-perovskite tandem solar cell is achieved by converting 32.5% of sunlight into electrical energy.

DECEMBER 20

OpenAI releases Point-E, a machine learning system that can generate 3D models from text prompts.

LAYOUT & DESIGN

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