

The Un/Times

News by the Explorers @ UnSchool

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Our home planet - Earth

By Shlok Ranawade (Age 13 years)

We all know that our home planet is Earth. It is a very unique planet, Earth is the only known to have consistent, stable bodies of liquid water on its surface and it is the densest planet in our solar system and also it is the biggest and the densest rocky planet in our solar system plus it's the only known planet to have life. Earth orbits the sun at a speed of 30 kilometers per second, or 67,000 miles per hour. Earth's liquid outer core generates the magnetic field that shapes the magnetosphere of Earth, deflecting destructive solar winds. The

atmosphere of Earth consists mostly of nitrogen and oxygen. Greenhouse gasses in the atmosphere like carbon dioxide (CO₂) trap a part of the energy from the Sun close to the surface. Earth is about eight light-minutes away from the Sun and orbits it, taking a year (about 365.25 days) to complete one revolution. The Earth rotates around itself in about 23 hours and 56 minutes. The Moon is the Earth's only natural satellite which stabilizes Earth's axis, and gradually slows its rotation.

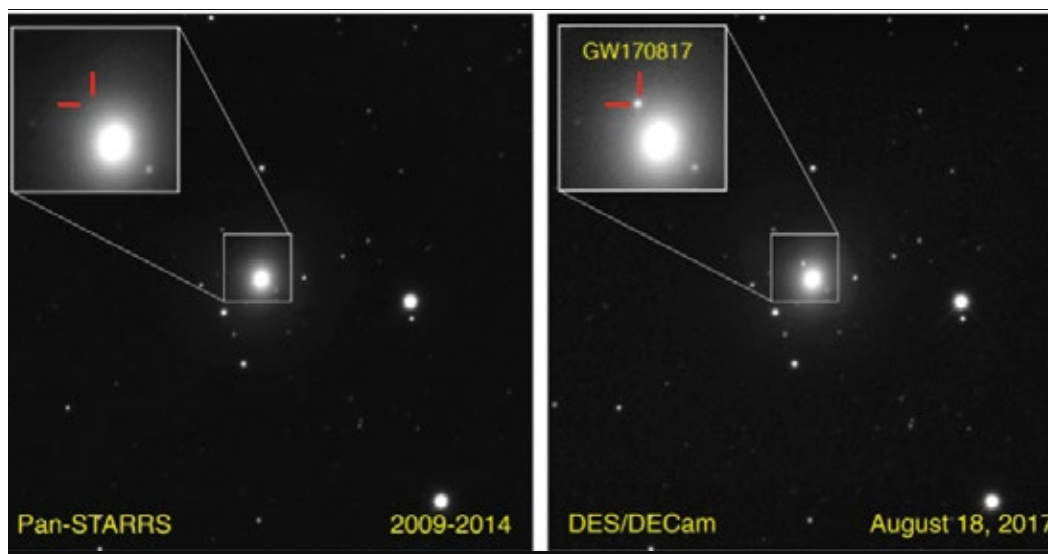


Kilonovas

By ChatGPT/Reyansh Baralay
(Age 3/9 years)

Kilonovas are astronomical events that occur when two neutron stars or a neutron star and a black hole merge together. During the merger, a massive amount of energy is released in the form of gravitational waves and a powerful explosion of light, including gamma rays, X-rays, and visible light. The explosion is called a kilonova, and it is believed to produce heavy elements, such as gold and platinum, through a process called r-process nucleosynthesis.

Kilonovas are important to astrophysicists



because they can help to explain how heavy elements are formed and distributed throughout the universe. They are also valuable for studying the properties of neutron stars and black holes, as well as for testing theories of gravity and the nature of the universe itself. In 2017, the first kilonova was observed by the LIGO and Virgo gravitational wave detectors, and it was a major breakthrough in the field of astrophysics.

Supernova

By Mayank Bhide with help of ChatGPT (Age 9 years)

A supernova is a powerful and luminous explosion that occurs when a massive star exhausts its fuel and collapses under its own gravitational pull. This collapse causes the star's core to heat up and trigger a chain reaction that leads to a massive explosion, releasing an enormous amount of energy and radiation.

There are two types of supernovae: Type I and Type II. Type I supernovae occur when a white dwarf star in a binary system accretes enough material from its companion star to exceed its mass limit and trigger a runaway nuclear fusion reaction. Type II supernovae occur when a massive star's core collapses and triggers a massive explosion.

Supernovae are important events in the universe as they create and disperse heavy elements into the surrounding interstellar medium, which can later form new stars and planets. They are also used as standard candles by astronomers to measure distances to galaxies and to study the expansion of the universe.

The most famous supernova in history is the supernova that occurred in the year 1054, which resulted in the formation of the Crab Nebula. More recently, a supernova known as SN 1987A was observed in the Large Magellanic Cloud, a neighboring galaxy to our Milky Way.



Pulsar

By Aniruddha Iyer (Age 11 years)

Pulsars are rapidly spinning neutron stars, extremely dense stars composed almost entirely of neutrons and having a diameter of only 20 km (12 miles) or less. Pulsar masses range between 1.18 and 1.97 times that of the Sun, but most pulsars have a mass 1.35 times that of the Sun. Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles. These accelerated particles produce very powerful beams of light. The fastest rotating pulsar rotates at 716 times per second.

1) rotation-powered pulsars, where the loss of rotational energy of the star provides the power,
 2) accretion-powered pulsars (accounting for most but not all X-ray pulsars), where the gravitational potential energy of accreted matter is the power source (producing



X-rays that are observable from the Earth),

3) magnetars, where the decay of an extremely strong magnetic field provides electromagnetic power.

A pulsar is formed when a massive star collapses or exhausts its supply of fuel. It blasts out in a giant explosion known as a supernova, the most powerful and violent event in the universe. Without the opposing force of nuclear fusion to balance it, gravity begins to pull the mass of the star inward until it implodes.

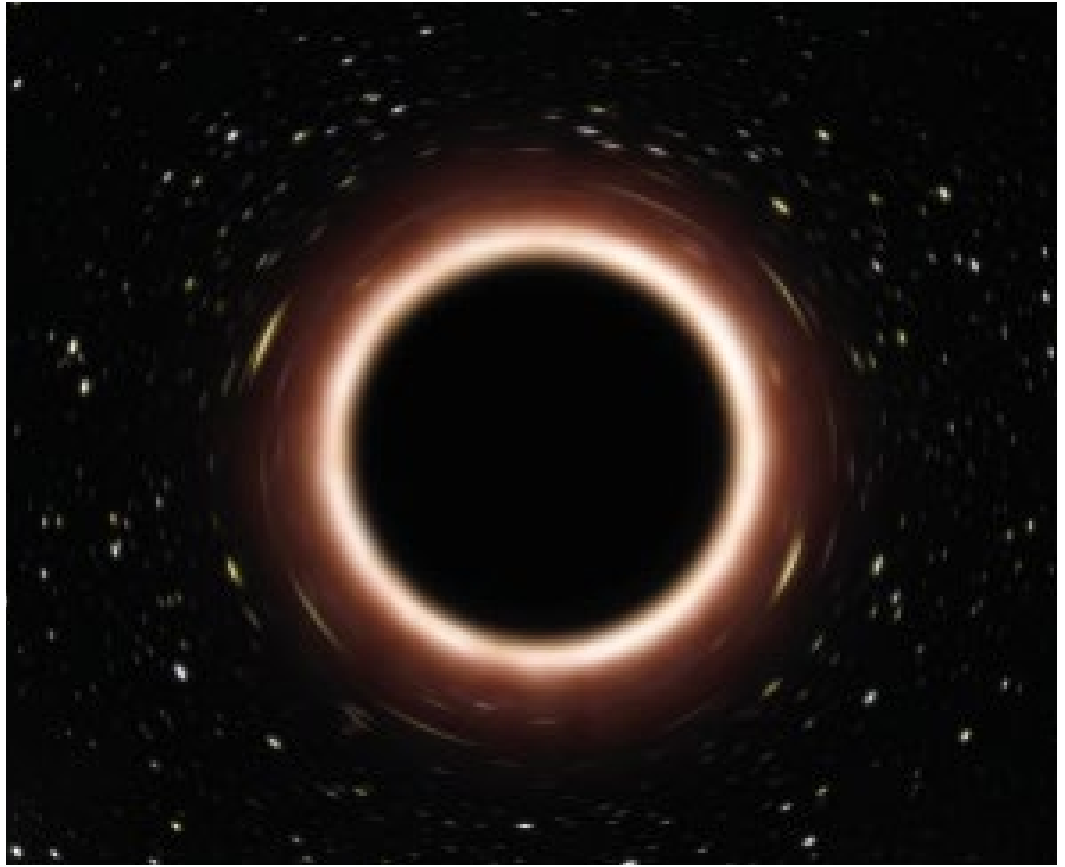
Blackholes

By *Obaid Alizai (Age 10 years)*

A black hole is a region in space where the gravitational pull is so strong that nothing, not even light, can escape from it. Black holes are formed when a massive star runs out of fuel and collapses under its own weight, creating an incredibly dense object with a gravitational field so intense that it warps the fabric of space and time around it.

The boundary around a black hole, beyond which nothing can escape, is called the event horizon. The size of the event horizon is directly proportional to the mass of the black hole. The center of a black hole is called the singularity, where the laws of physics as we know them break down.

Black holes are classified into three main types based on their mass: stellar, intermediate, and supermassive. Stellar black holes are formed from the collapse of a single massive star and have a mass of a few times



that of the sun. Intermediate black holes have a mass of hundreds or thousands of times that of the sun and their origins are not yet fully understood. Supermassive black holes have a mass of millions or billions of times that of the sun and are thought to be at the centers of most galaxies, including our own Milky Way.

Visit to Nehru Science Centre

By *Vaishali Chavre*

UnSchool kids, teachers and parents visited Nehru Science Center on 26th February 2023 as a part of Science Week Celebration.

Nehru Science Centre (NSC) is the huge interactive science center located in Worli, Mumbai. The centre is named after India's first Prime Minister, Jawaharlal Nehru.. The work on making science centre began in 1977 and On 11 November 1985 it was opened to the public. The Centre has more than 500 hands-on and interactive science exhibits on kinematics, energy, sound,, light , mechanics, history , mathematics, transport, etc. installed in the science park and different galleries. It is the largest

Science Centre in the country, spreaded over 8 acres (32,000 m2) of science park with varieties of plants, trees and shrubs. More than 500 hands-on and interactive science exhibits on energy, sound, kinematics, mechanics, transport, etc. are installed in the park. More than 500 hands-on and interactive science exhibits are based on various aspects of science and technology, and there is a collection of some historical artifacts of science and technology. The 3D Science Show is also organized at the center. Different models of railway engines working on electricity, steam engine, and tram are displayed. The Centre also had many interesting shows of short duration.



Motion Simulator Ride: A Simulator is a machine designed to provide a realistic imitation of thrilling experience to the visitors on a 65" led monitor.

Science Odyssey Film: Where kids saw an exciting Large Format Science Film titled "Journey To Space", at the Science Odyssey facility of the Centre, a huge auditorium with a screen extending from walls to ceiling .

3-D Science Show: Where kids experienced near realistic visuals that appeared to come out from the static screen right in front of their eyes.

Our Technology Heritage Gallery: Displayed information on Early Mathematical Foundations that included information about Circle and its diameter, Hands on activity on finding Area of a circle ,Pythagoras Theorem, Square root and Cube root etc.

Hall of Aviation and Space: Exhibited detailed information about History of Indian as well as World Aviation, Technological progress in the field of aviation and space industry.

Hall of Evolution: The exhibit that explains the concept of evolution of the

solar system, earth, life both on earth and in the ocean, various evolution theories put forth by scientists, evolution and developmental stages of Man and extinction of dinosaurs etc. It also displayed the glimpses of stone age tools which portray the history of human civilization.

It is a must visit place located in Worli. It has many activities and science experiments to learn and enjoy and for fulfilling the curiosity and knowledge of science .

A Saturday evening with Sudha Murthy

By Advvika Auti (Age 8 years)

Author Sudha Murthy visited the crossword book store in Aundh, near where I stay on the 11th of March. My mother told me about her online session and I was taken aback and asked if she was still alive. I clearly thought otherwise. My mother informed me that she was.

During her talk at the bookstore, Sudha Murthy said – parents think that by giving their child more and more things their child will be able to be great, but even if your child has a simple life, he/she can be great. There is more to her story. They were four siblings in the house including Sudha Murthy herself, but there were additionally 12 more kids since all her cousins came over to study at their house. She also said that she had 75 first cousins. And here I personally don't even have one.

So where was I, ah yes, I was saying and despite so many boys and girls in so many numbers, they were all treated equally in the household. All of them would have to have roti sabji, daal rice on a daily basis and nobody would get a special treat. Only special days like Navaratri, Ganesh Chaturthi would see special treat being cooked at

home. Until 10th standard Sudha Murthy confessed that she was not studious, but after the age of 15, I understood the importance of studies and hard work. I took admission in an engineering college, something that was unthought of when I was growing up. I was the only girl in the college she said. So, this made me a mission to always top the class. She stood first and got gold medals during her studies. She received a gold medal from the Chief Minister of Karnataka, Devaraj Urs, for securing the highest score in BE in all the Universities of Engineering in Karnataka. She also got the first rank in MTech in all the branches of engineering. Sudha Murthy's mother she said was an important part of her growing up. She would make her write 15 lines daily and threaten to not give her food if she did not finish the act. When she grew up her mother gave her the reason why she was so strict with her. Her mother told her that she had recognized her talent when she was very young and wanted to harness it.

Other than being a good student, Mrs Murthy was also interested in exploring nature. She also loved to help her grand-



mother. Her grandfather would tell them stories and asked them to imagine the characters that he would mention in them. Most of the stories that were told were mythological in nature. Her idols or heros' since she was very young were different at different stages in life. First her grandfather, then her father followed by her husband being her true idols.

Her first book was published when she was 18. She is an inspirational writer and a great orator too. I was very happy to meet Mrs Murthy that day.

KIDS CORNER *(A world of Puzzles, Jokes, and much more..)*

Interesting Quiz On Celestial Bodies

By Arham A. Bhatewara (Age 9 years)

1. Which of the following is not a celestial body?

- a. Galaxies
- b. Supernovae
- c. Satellites
- d. Asteroids

2. Between which planets can you find the Asteroids Belt?

- a. Mars; Jupiter
- b. Jupiter; Saturn
- c. Earth; Mars
- d. Uranus; Neptune

3. Which of the following things can escape the gravitational field of a black hole?

- a. Meteorite
- b. Light
- c. Electrons
- d. None of the above

4. Which of the following is not a dwarf planet?

- a. Pluto
- b. Eris
- c. Orcus
- d. Ceres

5. The Halley's Comet last was seen from Earth in 1986. When will it be seen from earth again?

- a. 2025
- b. 2061
- c. 2084
- d. 2104

6. What would not happen if you got sucked into a black hole?

- a. Everything would go dark.
- b. Your body would stretch into a long thin shape like a spaghetti noodle

- c. You would be crushed by the gravitational forces to an infinitely small point of zero size and infinite density.
- d. Time would pass faster as you got closer to the center of the black hole

7. If you wanted to mail a letter to an alien pen pal, what would be the correct sequence of your address?

- a. Unschool, Baner, Pune, Maharashtra, India, Asia, Earth, Solar System, Milky Way Galaxy
- b. Unschool, Baner, Pune, Maharashtra, India, Asia, Milky Way Galaxy, Solar System, Earth
- c. Unschool, Pune, Maharashtra, India, Asia, Baner, Solar System, Milky Way Galaxy, Earth
- d. Milky Way Galaxy, Unschool, Baner, Pune, Maharashtra, India, Asia, Earth, Solar System.

8. Which of the following best describes a supernova?

- a. A type of candy that explodes in your mouth
- b. A giant space explosion that happens when a star runs out of fuel
- c. A rare type of flower that only grows on planets with rings
- d. A type of superhero who has the power of exploding stars

9. What is the Big Bang?

- a. A giant explosion that occurred in space billions of years ago
- b. A term used to describe the sound of thunder in space
- c. A scientific experiment to study the formation of stars.
- d. A theory that explains the origin of the universe

10. Which of the following is the primary force that determines the orbit of a celestial body?

- a. Magnetic fields
- b. Gravity
- c. Radiation
- d. Electric fields

ANSWERS

1. C, 2. A, 3. D, 4. C, 5. B, 6. D, 7. A, 8. B, 9. D, 10. B

POEM

By Advvika Auti (Age 8 years)

**Red is an Apple,
Red is a Temple,
Red is a Chilly,
and the Red clown Silly**

WORD SEARCH*By Himani Bhaktani (Age 14 years)***Celestial Bodies**

U	A	N	S	N	E	M	I	F	L	A	R	E	R
S	N	O	N	K	U	N	F	S	O	R	P	S	T
R	K	O	L	N	E	P	T	U	N	E	A	T	M
S	R	M	M	H	I	S	S	R	C	V	S	A	K
S	S	A	U	E	T	E	K	C	O	R	O	R	Y
A	P	R	S	A	R	S	U	N	S	J	L	S	S
R	A	S	T	S	R	A	R	A	A	U	A	E	E
P	C	N	M	A	R	E	Y	E	T	P	R	N	A
L	E	S	S	A	P	C	P	O	U	I	S	Y	R
A	E	A	S	U	P	A	A	A	R	T	Y	A	T
N	T	S	S	I	T	P	A	S	N	E	S	T	H
E	A	M	I	L	K	Y	W	A	Y	R	T	Y	E
T	E	M	A	R	K	R	T	N	U	S	E	L	T
S	F	E	M	S	A	U	S	R	S	K	M	A	R

MILKYWAY
PLANETS
JUPITER
SUPERNOVA
STARS
SPACE
EARTH
ROCKET
FLARE
NEPTUNE
MOON
SOLARSYSTEM
SUN
SATURN
MARS

Play this puzzle online at : <https://thewordsearch.com/puzzle/5382198/>

Drawings by our little artists

By Sagarika Iyer (Age 9 years)



By Vivaansh Lad (Age 7 years)



By Anish Korke (Age 7 years)



By Samaira Pradhan (Age 7 years)

