

SCIENCE CENTRE NEWS LETTER

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SCIENCE CENTRE

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WHAT'S NEW IN SCIENCE

'Planet Nine' May exist: New evidence for another world in our solar system.

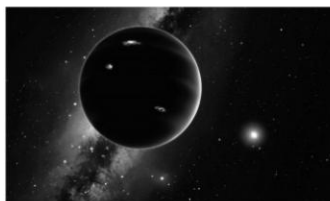
Astronomers have found evidence for a Planet 10 times more massive than Earth in the far outer system, orbiting about 20 times farther from the sun than distant Neptune does.

"This would be a real ninth planet," one of the researchers, Mike Brown of the California Institute of Technology (Caltech) in Pasadena, said in a statement,

Specifically, six Kuiper Belt object (KBOs) cruise around the sun on elliptical paths that all point in the same direction, even though the bodies are moving at different speeds. In addition, the six KBOs' orbits all share the same tilt—roughly 30 degrees downward, relative to the plane of the eight officially recognized planets (Pluto, which was the ninth planet until its

2006 reclassification by the International Astronomical Union).

The new modeling work by Brown and Batygin bolsters an intriguing scenario. Their simulations show that the gravitational influence of a roughly 10-Earth-mass planet in an anti-aligned orbit—one in which the planet's closest approach to the sun is 180 degrees across from that of all the other planets—could explain the KBOs' odd orbits.



planet nine may have formed closer to the sun, and been kicked out to its current location after a gravitational interaction with Jupiter or Saturn, Brown and Batygin said. If planet nine is real, it could fill a notable gap in our solar system, they added.

SCIENTIST OF THE MONTH

Prof. U. R. Rao

Dr. U. R. Rao was born on March 10, 1932, in Admar village in the South Canara district in Karnataka. He is considered as one of the leading space scientists in the world. His father's name was Lakshmi Narayan Rao and his mother's name was Krishnavalli. His full name was Udupi Ramchandra Rao. He completed his school and college education from a place near his village. He joined Varanasi Hindu University for post-graduation and passed in 1953. The same year he went to Ahmadabad and joined the Physical Research Laboratory (PRL) for Ph.D. and began research on cosmic rays under the guidance of Dr. Vikram Sarabhai.

Rao served as associate professor at PRL from 1968 to 1970. In 1972 he was appointed as director of ISRO Satellite Center in Bangalore. During his researches at PRL, he and his colleagues had made important contributions towards understanding the interplanetary medium. The data interpretation of American satellites Pioneer I and Pioneer II became easy due to his researches. He was first to establish the relationship between geomagnetic storms and solar winds with the help of observations made on earth.

He designed and constructed the India's

Aryabhata satellite in 1975. Then the design, development and successful orbit of Bhaskar I and II were carried out in 1979 and 1981. Under Rao's leadership, the first experimental geostationary satellite 'Apple' was put into orbit in June, 1981. Thereafter, the Indian Remote Sensing (IRS) satellites and INSAT satellites for broadcasting and meteorological purposes were designed, developed and sent into orbit. Launch vehicles like ASLV and PSLV were prepared.



For his highly accurate analysis of pioneers 6, 7, 8 and 9, he was awarded the 'Group Achievement Award' by National Aeronautics and Space Administration (NASA) in 1973. The Russian Science Academy honoured him with the 'Medal of Honor' for the successful launch of Aryabhata satellite. He also

awarded the 'Dr. Vikram Sarabhai Research Award' by the Hariom Ashram, 'Dr. Shantiswarup Bhatnagar Prize', The Karnataka government conferred on him the 'State Award', 'National Design Award', 'Padma Bhushan', P. C. Mahalanobis Medal, 'Yuri Gagarin Medal', 'Allen D. Mil Memorial Award', 'Aryabhata Award', 'Bhasin Award'. In 1996 he was presented the 'Dr. Vikram Sarabhai International Award'.



Timings

Tuesday to Friday
9.30 am to 4.30 pm

Saturday - Sunday
& Public Holidays
9.30 am to 6.30 pm

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SCIENCE FACTS MARCH 2016

1 March	Self Injury Awareness Day.
3 March 1838	American Astronomer, George W. Hill (who plotted the Moon's Orbit) was born on this day.
3 March 1847	Mr. Alexander Graham Bell (Inventor of Telephone) was born on this day.
3 March 1969	India's first Rajdhani Express train having speed of 140 km/h traveled for first time between Delhi and Hawrah.
4 March 1754	Benjamin Waterhouse (inventor of Smallpox vaccine) was born on this day.
6 March 1937	Valentina Tereskowa (Lady Astronaut who was the first lady to enter into the space) was born on this day
8 March	International Women's Day (by UN).
8 March 1879	German physicist and chemist, Otto Hahn (Discoverer of radiothorium and actinium) was born on this day
9 March 1934	Uri Gagarin (world's first Astronaut) was born on this day.
10 March 1876	Mr. Alexander Grehambel experimented for the first time to talk on telephone with his assistant Botish on this day.
13 March 1781	Planet "Uranus" was discovered by well-known Astronomer Herschel.
14 March 1879	Sir Albert Einstein (discoverer of Theory of Relativity) was born on this day.
17 March 1787	George Simon Ohm (discoverer of Ohm's Law) was born on this day.
18 March 1858	German engineer, Rudolf Diesel (inventor of diesel motor) was born on this day.
21 March 2016	It is the day when Day and Night time becomes equal.(Vernal Equinox)
21 March	World Down Syndrome Day.
22 March	World Day for Water.
23 March	World Meteorological Day. (WMO)
24 March 1854 .	Start of Telegram era in India by delivering first telegram from Kolkata to Agra
27 March 1845	Wilhelm Corned Rontgen (Noble prize winner & inventor of invisible 'X' rays) was born on this day.
29 March 1967	Making of world's biggest submarine "9 Redoubtable (S611)" by France, which is having weight of 7780 ton and length of 419 feet.
U.N. : United Nation	

Answer : 1)- D 2)- C 3)-C 4)- A 5)- C6)- C 7)- A 8)- D 9)- B

KNOW THE EXHIBITS AT FUN SCIENCE GALLERY

Snake Pendulum

Lift the handle and quickly lower it to set the row of pendulum swinging, keep watching the swinging pattern of the steel balls for a while. Observe that they move in unison like wavy pattern of a Snake's motion for sometimes and then break apart but only to reappear after a while. The Sequence repeats until frictional force stop their motion altogether.

What is the principle behind this?

Each of the pendulums moves back and forth at a slightly different rate determined by its length. In 30 Seconds the largest pendulum makes

15 oscillations, its immediate makes 16, and so on since every pendulum completes an exact number of swing in 30 seconds, they will come back together in 30 second, after 15 seconds, the even numbered pendulum would complete an exact number of swings and would be back where they started from, while the odd numbered pendulums would by then be exactly halfway through and exactly at opposite phase to that when they started. The result is two opposing lines of pendulum that seem to be dancing with each other in interesting patterns.



SCIENTIFIC QUESTION

What is Static Electricity?

Electricity is a type of energy based on the movement of bits of atoms, called electrons.

You shuffle across a carpet, touch a metal doorknob,



you feel a tiny electric shock as a spark jumps from you to the metal. This sort of electricity is called static electricity. It can make your hair stand on end, attract dust to the television set,

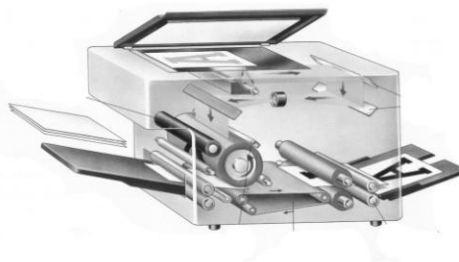
or stick a balloon to a wall. Static electricity builds up when two different nonmetal materials rub together. It can pull things together or push them apart, because opposite charges attract and like charges repel. Static can be destructive, as in lightning strike, or useful, as in photocopiers, paint sprayers, and air ionizers.

Photocopier (Xerox Machine)

photo copier work using static electricity and the attraction of unlike charges. A rotating drum, coated with a material that allows electricity to flow when light shines on it, is positively charged

with static electricity. Light from the white areas of the item to be copied shine on the drum and charge flow away. The black areas keep their positive charge and attract a negatively charged powder, the toner, which is then transferred to the paper.

First photocopier was made by an American Lawyer chester Carlson (1906-1968), in 1938. He called this process Xerography, from the Greek words xeros, "dry" and graphos, "writing".



1) The SI unit of electric current is

(A)MHO(B)Farad(C)Ohm(D)Ampere

2)By which of he following methods does heat transfer not take place?

(A)Radiation (B) Convection (C) Refraction (D)Conduction

3) The wire of an electric bulb is known as the

(A)Heating Element (B)Radiator (C)Filament (D)Luminous wire

4)Metals expand on heating and contract on cooling

(A)True (B)False

5)What is the name of the point where light rays from infinity coverage after passing through a lens?

(A)Infinity (B)Center (C)Focus (D)Parabola

6)What Scientist is well known for his theory of relativity?

(A)Ampere (B) Edwin Hubble (C) Albert Einstein (D) Issac Newton

7) Earth is located in which Galaxy ?

(A) Milky way (B) sun (C) Big bang (D) Orbit

8) what is the first element on the periodic Table ?

(A) Mercury (B) Helium (C) Lithium (D) Hydrogen

9) Bases have a pH level below 7

(A) true (B) false

SCIENCE CENTRE

Science Centre forms the main part of the entire complex; it displays thematic galleries in the field of Science and Technology. The ground floor of Science Centre showcases 3D Theatre and Souvenir Shop. The first floor of Science Centre showcases Fun Science Exhibits and Second floor of Science Centre showcases Diamond Gallery where as Entering into space, Textile Gallery, Power of Play Gallery, Cosmos Gallery and Polar Science Gallery are under development.

3d Show	Tuesday to Friday (Time)	Saturday, Sunday & Holidays (Time)
English	09:15, 11:20, 12:00, 02:40, 04:00	09:15, 11:20, 12:00, 02:40, 04:00
Hindi	10:00, 10:40, 12:40, 01:20, 02:00, 03:20	10:00, 10:40, 12:40, 01:20, 02:00, 03:20, 04:40, 05:20, 06:00
Science Centre + Planetarium + Museum + Diamond Gallery		Planetarium
Above 18 Years	Rs. 100	Tuesday to Friday
3 Years to 18 Years	Rs. 65	Saturday, Sunday & Public Holidays
Science Centre + Museum + Diamond Gallery		09:30 to 10:20 English
Above 18 Years	Rs. 60	10:30 to 11:20 Gujarati
3 Years to 18 Years	Rs. 40	11:30 to 12:20 Gujarati
Science Centre + Planetarium + Museum + Diamond Gallery + 3D Show		12:30 to 01:20 English
Above 18 Years	Rs. 120	01:30 to 02:20 Hindi
3 Years to 18 Years	Rs. 80	02:30 to 03:20 hindi
Planetarium		03:30 to 04:20 Gujarati
Above 18 Years	Rs. 50	04:30 to 05:20 English
3 Years to 18 Years	Rs. 40	05:30 to 06:20 Gujarati
3D Show		
Above 18 Years	Rs. 60	
3 Years to 18 Years	Rs. 40	