

# SCIENCE CENTRE NEWS LETTER

October 2015  
Issue 6



**Published by**  
Milind Torawane  
I.A.S.  
Municipal  
Commissioner

**Editor**  
C. Y. Bhatt  
Dy. Municipal  
Commissioner

**Sub Editor**  
Bhamini Mahida  
Chief Curator  
Divyesh Gameti  
Curator (Science)

**Co-ordinator**  
Dr. Pruthul Desai  
Principal  
P. T. Science College



SCIENCE CENTRE

Volume 1, Issue 6

## WHAT'S NEW IN SCIENCE

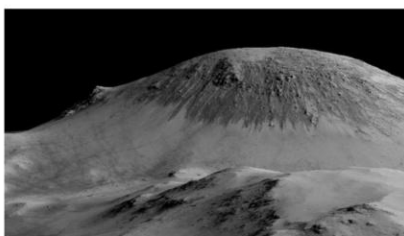
### Nasa scientists find evidence of flowing water on Mars:

NASA Scientists have done research on pictures from Curiosity rover which shows signs of existence of water on Mars. Images taken from the Mars orbit show cliffs, and the steep walls of valleys and craters, streaked with summertime flows that in the most active spots combine to form intricate fan-like patterns. Liquid water runs down canyons and crater walls over the summer months on Mars, according to researchers who say the discovery raises the chances of existence of some form of life.

Researchers says discovery of stains from summertime flows down cliffs and crater walls increases chance of finding life on red planet. Researchers are focused on learning where the water comes from. Porous rocks under the Martian surface might hold frozen water that

melts in the summer months and seeps up to the surface.

Another possibility is that highly concentrated saline aquifers are dotted around beneath the surface, not as pools of water, but as saturated volumes of gritty rock. These could cause



run downhill. The process, known as deliquescence, is seen in the Atacama desert, where the resulting damp patches are the only known place for microbes to live. Nasa scientists may still be celebrating their discovery of liquid water on Mars, but they now face some serious questions about how they can investigate further and look for signs of life on the red planet. The problem is how to find life without contaminating the planet with bugs from Earth.

The rover is not sterile and there is a risk of contaminating the wet areas with earthly bugs, there fore the next rover due to land on the planet is a joint mission named ExoMars from the European and Russian space agencies, set to launch in 2018. The plan is for the rover to drill up to two metres into the Martian soil to look for life past or present.

## SCIENTIST OF THE MONTH

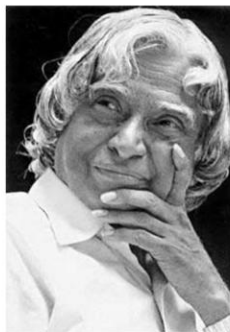
### Dr. Abdul Kalam

Dr. Abdul Kalam, was born on October 15,1931 at the popular pilgrimage centre and island Rameswaram in the southern State of Tamil Nadu. His full name is Avul Pakir Jainulabdeen Abdul Kalam. In sort, he is known as APJ Abdul Kalam.

Abdul, joined the Madras Institute of Technology (MIT), and chose the aviation engineering course. After completing his MIT course, Kalam as a trainee. When he successfully completed his training and graduation in aeronautical engineering.

By the end of 1962 the government had decided to set up a rocket launching centre at Thumbu in Kerela. Kalam was selected along with a team of Scientists to go to us for a six Month's training in rocket engineering at NASA. Six Month's later,

Kalam and his group returned to India. The Country's first rocket "Nike-Apache" was gifted by NASA. The rocket was launched on November 21, 1963. They started designing and launching a series of rockets called 'Rohini'.



As head of ISRO's satellite launch vehicle project (SLV-3), Kalam did a wonderful and successful job. The SLV-3 was launched successfully July 18, 1980 on January 26, 1981. The President conferred a 'Padma Bhushan' on Abdul Kalam.

On September 16, 1985. The 'Trishul Missile' was successfully test fired from the Sriharikota (SHAR) testing range. On the morning of February 25, 1988, at 11:23 hours, the loopercnt indigenou 'Prithvi Missile' was successfully test fired from SHAR.Jadavpur University and the IIT



### Timings

Tuesday to Friday  
9.30 am to 4.30 pm

Saturday - Sunday  
& Public Holidays  
9.30 am to 6.30 pm

### Address

Science Centre  
City Light Road,  
Surat - 395 007

### Contact

0261 - 2255947  
+91 97277 40807

Fax No.  
91-261-2255946

E mail  
sciencecentre@suratmunicipal.org

Web Site  
www.suratmunicipal.gov.in



Mumbai conferred on him honorary doctorate degrees.

The media started calling him 'India's Missile man.' He was awarded the 'Bharat Ratna' in 1997. The youngest Scientist to get the award. Making plans till 2020, he has also published a book 'India-2020'. On July 25, 2002 Kalam was sworn in as the President of India by Justice B. N. Kirpal. Chief Justice of India. Kalam became the eleventh President of our Country. Creator of Missiles in independent India, a great Scientist in the real sense of the term, and last but not least, former President of India, Dr. Abdul Kalam was died on July 27, 2015.

## SCIENCE FACTS OCTOBER 2015

1st Oct	World Habitat day (1st Monday of October)
3rd Oct 1803	Johan Gorrie (Inventor of a Cold Air Process of Refrigeration) was born on this day.
4th Oct	E Day, Electronic Waste Awareness Day
4th Oct 1832	William Griggs (Inventor of Photo Chromo Lithography) was born on this day.
4th Oct 1957	Soviet Union launched first artificial Earth Satellite named "Sputnik-1"
5th Oct	World Teachers Day. (by UNESCO)
5th Oct 1864	Birth of Louis lumiere (Inventor of first Motion Picture Camera)
6th Oct 1893	Birth of Maghnad Saha (Great Indian Astrophysicist)
8th Oct 1917	Rodney Rabert Porter (Discoverer of exact Chemical Structure of an Antibody) was born on this day
10th Oct 1731	Birth of Henry Cavendish (Discoverer of Hydrogen gas)
12th Oct 1860	Birth of Elmer Sperry (Inventor of the Gyro compass)
19th Oct 17 83	The first balloon flight with humans by Scientist Jean Francois Pilatre de Rozier.
19th Oct 1910	Subrahmanyam Chandrasekhar (Nobel Prize winner Astrophysicist of India) was born on this day.
20th Oct 1891	James Chadwick (Discoverer of Neutron) was born on this day.
21th Oct 1833	Alfred Nobel (Inventor of Detonator for Dynamite & Nitro-Glycerine)
22th Oct	World Planting Day.
22th Oct 1896	Birth of Charles Glem King (Discoverer of Vitamin C)
22th Oct 1905	Karl Jansky (Discoverer of Cosmic Radio Wave Emission) was born on this day.
27th Oct 1811	Birth of Issac Singer (Inventor of Home Sewing Machine)
28th Oct 1914	Jonas Salk (Inventor of Polio Vaccine) was born on this day.

Science Quiz Answers : (1) A, (2) B, (3) C, (4) A, (5) C, (6) A

## KNOW THE EXHIBITS AT FUN SCIENCE GALLERY

### Feel the Atmospheric Pressure:

Using your forefinger, try to lift the rods within each transparent tube one by one. You will feel more weight on your fingertip for the longer tube, which suggest that longer is the air column, more is the weight of air and conversely, more is the air

pressure.

Atmospheric pressure is the maximum at sea level and decreases as the altitude increases. The atmospheric pressure at mean sea level is 1.013 kg on every square centimeter.



## SCIENTIFIC QUESTION

### What causes a Heart Attack?

The heart muscles require a constant supply of oxygen-rich blood to nourish it. A heart attack happens if the flow of oxygen-rich blood to a section of heart muscle suddenly becomes blocked and the heart can't get oxygen. Most heart attacks occur as a result of coronary heart disease (CHD). A coronary heart disease (CHD) is a disease in which a waxy substance (Like Calcium, Proteins) called Plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.

When the plaque builds up in the arteries, the condition is called Artherosclerosis. The build-up of plaque occurs over many years. An area of plaque can rupture (break open) inside of an artery. This causes a blood clot to form on the plaque's surface. If the clot becomes large enough, it can mostly or completely block blood flow through a coronary artery.

#### Symptoms of heart attack:

Discomfort, pressure, heaviness or pain in the chest, arm or below the breastbone Discomfort radiating to the back, jaw, throat or arm. Sweating, vomiting or dizziness. Extreme weakness, anxiety or shortness of breath. Rapid or irregular heartbeats.

#### What do you do if heart attack occurs?

After a heart attack, quick treatment to open the blocked artery is essential to lessen the amount of damage. Waiting longer increases the damage to your heart and reduce your chance of survival.

**Diagnose:** Tests to diagnose a heart attack:

**ECG:** (also known as EKG or Electrocardiogram): it can tell how

& after a heart attack to learn how the heart is pumping & what areas are not pumping normally.

**Treatment:** The goals of drugs therapy are to break up or prevent blood clots, prevent platelets from gathering & sticking to the plaque. These medications must be given within one to two hours from the start of your heart attack. Drugs used during a heart attack include:

**Asprin:** To prevent blood clotting.

Thrombolytic therapy (clot busters): To dissolve any blood clots in the heart's arteries

**Angioplasty or stents:** To open up narrowed or blocked arteries.

Bypass surgery: To restore the heart muscle's supply of blood.

#### Precautions after heart attack:

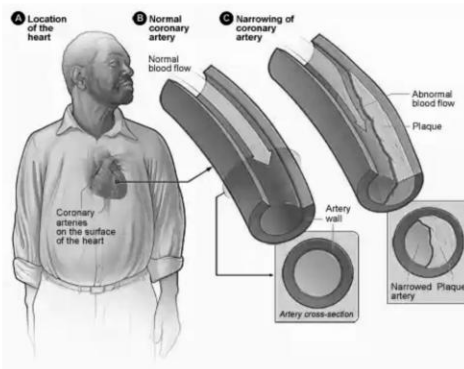
**Take medications:** To prevent future blood clots, prevent plaques by lowering cholesterol.

#### Change Life Style:

like quitting smoking, lowering blood cholesterol, controlling diabetes and high blood pressure.

#### Regular heart check-ups:

To check the progress of recovery.



much damage has occurred to your heart muscle and where it has occurred. In addition, heart rate and rhythm can be monitored.

**Blood Tests:** Blood may be drawn to measure levels of cardiac enzymes that indicate heart muscle damage.

**Echocardiography:** it is an imaging test that can be used during

## SCIENCE QUIZ

- What is the brightest star in the night sky?  
a) The Morning Star, b) Sirius c) The North Star d) Polaris
- What celestial objects can be seen with the unaided eye during the daytime?  
a) The Sun, Moon and Jupiter, b) The Sun, Moon and Saturn, c) The Sun, Moon and Mars  
d) The Sun, Moon and Venus
- When the Moon is Full:  
a) It rises when the Sun sets, b) It sets when the Sun sets, c) It rises when the Sun rises  
d) Both answers b) and c) above
- About how many light years across is the Milky Way? Is it:  
a) 1,000, b) 10,000, c) 100,000, d) 1,000,000
- Which of the following planets has the lowest density?  
w) Mercury, x) Venus, y) Saturn, z) Mars
- What causes the gas tail of a comet to always point away from the sun?  
w) solar wind, x) air pressure, y) centrifugal force, z) gravity

## EXHIBITION AT SCIENCE CENTRE SURAT:

Science Centre Surat has organised 'Ganesh Exhibition' at Kid Space, Science centre from 15th September to 30th September 2015. In this exhibition 225 statues and 250



photographs of Lord Ganesha were displayed. Statues were made of different materials like copper & bronze, stone, fiber, wood, glass, conch & shell, crystal etc.

## 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	
<b>Science Centre + Planetarium + Museum + Diamond Gallery</b>		<b>Planetarium</b>	
Above 18 Years	Rs. 100	<b>Tuesday to Friday</b>	<b>Saturday, Sunday &amp; Public Holidays</b>
3 Years to 18 Years	Rs. 65		
<b>Science Centre + Museum + Diamond Gallery</b>		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
<b>Science Centre + Planetarium + Museum + Diamond Gallery + 3D Show</b>		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
<b>Planetarium</b>		03:30 to 04:20	Gujarati
Above 18 Years	Rs. 50		04:30 to 05:20
3 Years to 18 Years	Rs. 40		05:30 to 06:20
<b>3D Show</b>			
Above 18 Years	Rs. 60		
3 Years to 18 Years	Rs. 40		