

# SCIENCE CENTRE NEWS LETTER

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## SCIENCE CENTRE

Volume 10, Issue 1

### WHAT'S NEW IN SCIENCE?

**ISRO to get two new launch pads in two States and Chandrayaan-4 getting ready.**

The Indian Space Research Organisation (ISRO) is set to expand its capabilities with two new launch pads (the area on which rocket stands for launching, consisting a platform with a supporting structure), as confirmed by ISRO Chairman V. Narayanan.

One launch pad will be constructed at Sriharikota, Andhra Pradesh and the other launch pad at Kulasekarapattinam, Tamil Nadu. These facilities are expected to be operational within two years, supporting ISRO's growing launch profile and enhancing Indian's Space exploration capabilities.

Chairman Narayanan also announced ambitious plans for Chandrayaan-4, Slated for 2028 launch. Unlike its predecessor, Chandrayaan-3, which weighed 4000kg, Chandrayaan-4 will weigh 9200kg and involve two modules

docked in Space. Its primary goal is to land on the Moon and retrieve samples, making a significant leap in India's lunar exploration efforts.



Author :- Pramod Madhav

Main Source:-<https://www.indiatoday.in/science/story/isro-to-get-two-new-launchpads-in-two-states-chandrayaan-4-getting-ready-2691114-2025-03-09>

### SCIENTIST OF THE MONTH

**Dr. Harish Chandra Verma**

Dr. Harish Chandra Verma was born on 3 April 1952 in Darbhanga , Bihar. He did B.Sc (Bachelor of Science) in Physics from Patna Science College in 1975. He did M.Sc (Master of Science) in Physics in 1977 and Ph.D (Doctor of Philosophy) in Experimental Nuclear Physics in 1981 from IIT (Indian Institute of Technology), Kanpur.

Dr. Harish Chandra Verma has dedicated himself in training young minds in the field of Physics. He has immensely contributed to popularising

Physics education among Indian students and teachers by conducting lectures and experimental demonstrations.

Dr. Harish Chandra Verma joined IIT Kanpur in 1994 as an assistant professor. Here he pursued research in Experimental Nuclear Physics. He has published 139 research papers.

Dr. Harish Chandra Verma received Maulana Abul Kalam Azad Shiksha Purashkar in 2017 and Padma Shri Award in 2021.



Main Source: [https://en.wikipedia.org/wiki/H.\\_C.\\_Verma](https://en.wikipedia.org/wiki/H._C._Verma)



### Timings

Tuesday to Sunday  
& Public Holidays  
9.30 am to 4.30 pm

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## SCIENCE FACTS April 2025

1 April 1826	:	Samuel Morey Patents the internal combustion engine.
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 1920	:	American Biochemist Edmond H. Fischer 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.
8 April 1911	:	American Chemist Melvin Calvin (Discoverer of Calvin Cycle) was born.
10 April 1927	:	American Scientist Marshall Warren Nirenberg was born
11 April 1905	:	Albert Einstein revealed Special Theory of Relativity (special relativity)
12 April	:	International Day of Human Space Flight (UN)
12 April 1955	:	The Polio Vaccine, developed by Dr. Jonas Salk was declared safe and effective.
12 April 1961	:	First Russian Astronaut Yuri Gagarin traveled into Space.
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.
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)

U.N. – United Nations

WHO – World Health Organization

UNESCO – United Nations Educational Scientific & Cultural Organization



## SCIENTIFIC QUESTION

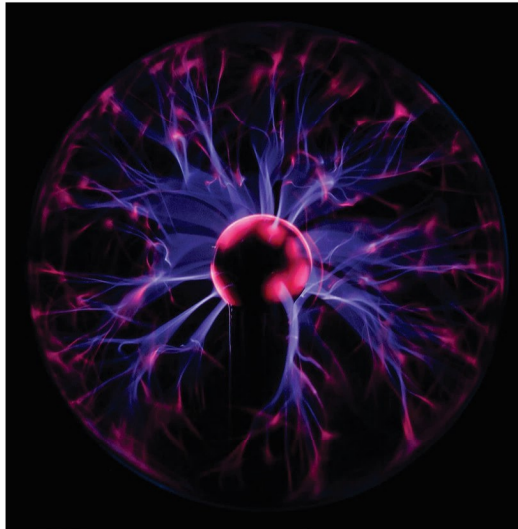
### What is Plasma?

This might be a surprise, but you can see Plasma. Or, technically, you can see the energy (light) given off by a Plasma. The sun and all stars are composed of Plasma. This strange "4th state of matter" is actually the most common form of matter in the universe. A Plasma is a collection of atoms (think of a container filled with a gas) which has absorbed enough energy to cause the electron to become separated from their nuclei. These electrically charged particles are called ions. When this happens, the Plasma no longer acts like a gas. This "charged particle soup" now has electrical properties, and creates a magnetic field (because of the electrical field). The excited charged particles radiate light and other forms of electromagnetic radiation.

#### **what can cause a container of gas to act this way?**

It takes energy to ionize the gas and create the Plasma. We can make it happen on Earth in neon lamps and other devices by using electrical energy. In a star, it

works something like this. Large clouds of gas in space are thought to have "condensed" into more dense blobs due to gravitational attraction within the gas. As the blobs grow more dense, the gravitational pull is stronger. Eventually, the atoms of gas are forced into



such tight spaces that they can't exist as atoms, and become ionized (the electrons are stripped away), forming a Plasma. It doesn't stop there in a star. All this motion causes friction and heating. The heat helps ionize more atoms, causing more Plasma to form. Deep in the core of this hot blob of Plasma the nuclei of the atoms are

squeezed more tightly together by gravity. Then at some point, those nuclei (Proton and Neutron ) can join together in the process called nuclear fusion. When fusion takes place, it releases large amounts of energy. This energy keeps heating the Plasma, giving rise to more fusion, etc. So the sun is a great "Plasma/fusion furnace."

Main Source:-

[https://education.jlab.org/qa/Plasma\\_02.html#:~:text=matter%20known%3F\)-,How%20do%20you%20know%20Plasma%20is%20real%20if%20you%20can,stars%20are%20composed%20of%20Plasma.](https://education.jlab.org/qa/Plasma_02.html#:~:text=matter%20known%3F)-,How%20do%20you%20know%20Plasma%20is%20real%20if%20you%20can,stars%20are%20composed%20of%20Plasma.)

## KNOW THE ENTERING INTO SPACE GALLERY EXHIBIT

### Space Tools – Brush Scribe Lens

The brush – Scribe lens was made to observe and mark hand sized specimens of lunar rocks. It was used on Apollo 12 and 14 mission.

This exhibit is situated at “Entering Space Gallery” between Fun Science Gallery and Power of Play Gallery at First floor of Science Centre.

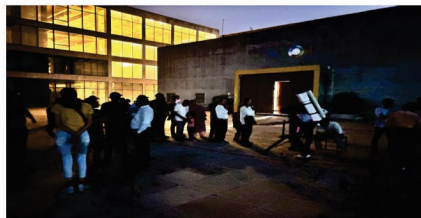




## NIGHT SKY OBSERVATION

### Moon Gazing

Science Centre Surat had organized an event to view 'Moon' through the telescope at Science Centre on 08/03/2025 from 6:45 pm to 8:15 pm. In this program, Moon was shown through Refractor telescope to visitors. Total 288 visitors have participated in this event.



## SCIENCE FAIR-2024

Surat Municipal Corporation had organized “Science Fair-2024” at Art Gallery, Science Centre Surat on 16<sup>th</sup> and 17<sup>th</sup> August 2024 for the students of std. 8 to 12. Delhi Public School had participated in Science Fair with their project on “Aqua Gravity Solar Storage” under the subtheme of “Indigenous Technologies for Renewable Energy Sources”.

The aim of the project was to generating re-newable energy through Solar Panel.

- Gravity Potential Battery: It stores energy by lifting a mass to a higher elevation and releases it by allowing the mass to fall, converting gravitational potential energy into electrical energy.

#### Advantages:

1. Efficiently stores energy for long periods without significant losses.
2. Reduces reliance on Chemical batteries and minimizes environmental impacts.
3. Cheaper to build and maintain compared to traditional energy storage solutions.

- Solar Tracking: Solar Tracking systems adjust the orientation of Solar Panels to follow the Sun's path, maximizing sunlight exposure and energy generation throughout the day.

#### Advantages:

1. Enhances energy capture by upto 20% compared to fixed system.
2. Allows fewer Solar Panels to achieve the same energy output as fixed system.
3. Improve energy collection during early morning and late afternoon when the Sun is lower in the Sky.

