



National Science Day 2023

Why in News?

In 1986, the **Government of India**, designated **February 28** as [National Science Day](#) to commemorate the announcement of the discovery of the **“Raman Effect”**.

- This year’s edition is being celebrated under the theme of **“Global Science for Global Wellbeing”**, in light of [India’s G20 presidency](#).

What is the Raman Effect?

- **Physicist CV Raman** won the [Nobel Prize](#) in 1930 for his discovery of the Raman Effect.
- It refers to the **inelastic scattering of light by matter**, resulting in a shift in the frequency of the scattered light.
 - In simpler words, it is a **change in the wavelength of light** that occurs when a light beam is deflected by molecules.
- The Raman effect forms the **basis for [Raman spectroscopy](#)** which is used by chemists and physicists to gain information about materials.
 - **Spectroscopy** is the study of the interaction between matter and **electromagnetic radiation**.

What are the Other Indian Nobel Laureates in the Field of Science?

Nobel Laureate	Subject	Topic	Year
Har Gobind Khurana	Medicine	Elucidation of the genetic code and its function in protein synthesis.	1968
Subrahmanyan Chandrasekhar	Physics	Physical processes of importance to the structure and evolution of stars.	1983
Venkatraman Ramakrishnan	Chemistry	Structure and function of the ribosome.	2009

What were the Major Contribution of India in the Field of Science?

- **Mathematics:** India has made significant contributions to the field of mathematics, including the concept of **zero, decimal system, algebra, and trigonometry**.
 - Indian mathematicians such as **Aryabhata, Brahmagupta** (provide the formula for the area of a cyclic quadrilateral), and [Ramanujan](#) have made pioneering contributions to the field.
- **Astronomy:** Ancient Indian astronomer Aryabhata made significant contributions to the field of astronomy, including the **determination of the Earth's circumference, the discovery of the lunar nodes**, and the development of the **heliocentric model of the solar system**.

- The **Jyotisa Vedanga**, the first Vedic text to mention astronomical data, records events going back as far as 4000 BCE.
- **Medicine:** [Ayurveda](#), the traditional system of medicine in India, is one of the oldest medical systems in the world.
 - Ancient Indian texts such as the **Charaka Samhita and the Sushruta Samhita** provide detailed descriptions of various medical conditions and their treatments.
- **Technology:** India has a long history of technological innovation, including the development of metallurgy, shipbuilding, and textile production.
 - The ancient city of **Mohenjo-Daro**, which existed in the [Indus Valley Civilization](#) over **4,500 years ago**, had a sophisticated **sewage and drainage system**.
- **Space Exploration:** India has made significant progress in space exploration in recent years, including the successful launch of the [Mars Orbiter Mission in 2014](#) and the [Chandrayaan](#) mission and [Gaganyaan](#), India's first human space mission, is **set to launch in 2024**.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered off by science-based technologies? **(2020)**

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