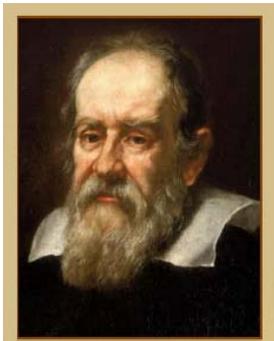




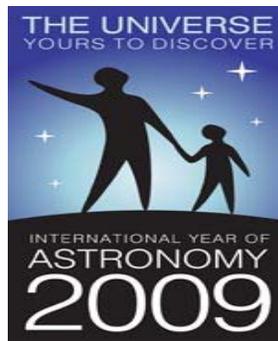
International Year of Astronomy, 2009

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International Year of Astronomy: 2009, and Remember the Contributions, Relevance of Dr. H.J.Bhabha, Dr. J.C.Boss, Charles Darwin on his birth Centenary.

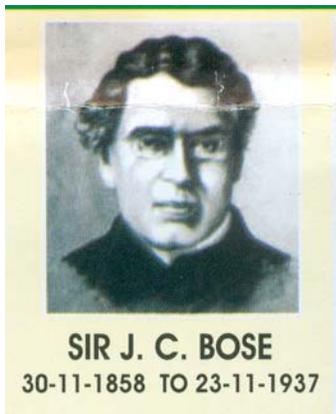


Galileo



Aryabhat

Inspiration & Join Hands to Make Society Prosper in Science and Technology



(150 Years)



(100 Years)



**Charles Darwin
(200 Years)**

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Abstract

This article is a popular presentation of the important points on the life and work of Dr. J. C. Bose, Dr. H. J. Bhabha and aim, objectives, Vision of International Year of Astronomy (IYA). The idea is to inspire the younger generation in Basic Scientific Research field and create a conducive atmosphere of Science education and Research in Society. I observed the significance of scientific spirit, when I visited the Colleges/University Departments/ Institutions as Master Resource Person of International Year of Physics-2005 & International Year of Astronomy-2009, how the scientific discoveries are helpful for mankind.

During Total Solar Eclipse on 22 July 2009, the temperature, light intensity, animal /bird behavior was found different as compared to normal other day. The Joint campaign was organized by Vigyan Prasara club member, DST, Govt. of India and Science for Society, Bihar at Patna. India witness the longest solar eclipse (TSE) of this century on 22 July 2009. This eclipse was visible from many cities of India including Patna, Allahabad, Varanasi, Darjeeling, Surat, Indore and Dibrugarh. At Patna, we could not see the initial sequence of the eclipse before totality due to sudden rain but could witness the sequence of the eclipse after totality.

Overview

The international year of astronomy (IYA)-2009 is being celebrated worldwide. United Nations, its 62nd General assembly on 20th Dec., 2006 took the resolution to celebrate 2009 as the International Year of Astronomy. **The vision of IYA** is to help citizen of the world to rediscover their place in the universe through the day and night sky observation and thereby generate a sense of wonder and discovery. We, in India the IYA focus to remember

- ✓ 400th year of Galilean Telescope, which was used first for Astronomical observation
- ✓ 100 Year of, Since Samanta Chandrashekhar of Orissa made celestial observation through simple hand-made instruments.
- i. 300 years of Swai Jai Singh's efforts of constructing a chain of massive observation (e.g Jantar Mantar, Delhi)
- ii. 1600 years of since Aryabhata (Patliputra based Mathematician) gave explanation of Lunar and solar eclipses and busted the Rahu-Ketu mythical frame work of the Jyotish-Vidya.

Aim and Objectives of IYA

- Aware the Astronomy is one of the oldest Basic Sciences & it has contributed and still contributes fundamentally to the evolution of other Sciences and applications in a wide range of fields.
- Recognizing that Astronomical observations have profound implications for the development of Science, Philosophy, culture and the general concept of the Universe.
- Noting that, although there is a general interest in Astronomy, It is often difficult for the general public to gain access to information and knowledge of the subject
- Conscious that each society has developed legends, myths and tradition, concerning the sky, the planets and the Stars which form part of its cultural heritage.
- Expressing its support to the declaration of 2009 as the International Year of Astronomy, with a view to highlighting the importance of Astronomical Sciences and their contributions to the Knowledge and Sustainable development.



Eclipse Scene at Patna

Observation on 22 July 2009: Largest Celestial drama of this Century

1. All the animals and birds get confused. Dogs stops barking/lie down/ sleep. Cows and Buffaloes give very less milk
2. Fishes in water stops feeding to their child/ leaves their shelters etc.



3. Light intensity varies from 0 – 18,000 lux. While normal day light have light intensity of 15000- 18000 Lux.
4. Temperature changes by 3-7 degree Celsius. (At Patna 27 degree Celsius to 29.8 degree Celsius in 6 minute)
5. Shadow band was observed on the open floor, white paper.

Frontiers of Astronomy (Space Scientist)



DR. VIKRAM SARABHAI
12-08-1919- TO 31-12-1971



SUNITA WILLIAMS
19-09-1965



APJ ABDUL KALAM
15-10-1931



KALPANA CHAWLA
-07-61 TO 1-02-2003



RAKESH SHARMA
13-01-1949

Dr. Jagadish Chandra Bose: Modern India's First Physicist .(150 Year)

He was the pioneer of experimental science in India. J.C. Boss was born in Mymensingh (Now in Bangladesh) on Nov. 30, 1858 and started his education in a Pathsala Bengali medium school. He studied with the children of peasant's, fishermen and labours. In their company young Jagdish imbibed a love for nature. Bose came in contact with Father Eugene Lafont (1837-1908) at St. Xavier's College, founded by Belgian Jesuits, who played an important role in developing a tradition of modern science in Kolkata. In 1880, he sailed for England for studying higher education and again he left London for Cambridge, where he took admission in Christ's college to study **Natural science**. In 1894, on his 35th

birthday, Bose decided to pursue scientific research and not to be confined with teaching assignment alone and his first research on electric radiation.

Bose was the first to produce millimeter-length radiowaves and study their properties. The Institute of Electrical and Electronics Engineers is one of the their publications wrote "Our investigative research into the origin and first major use of solid state detector devices led to the discovery that the first transatlantic wireless signal in Marconi's world famous experiment was received by morconi using the iron-mercery-in coherer with a telephone detector invented by Sir J.C. Bose in 1898. He was the first to show that semi-conductor rectifiers cold detect radio waves.

In May 1895, Bose read his first research paper before the Asiatic society of Bengal. In the same year his paper titled "On the Determination of the indices of Refraction of Sulphur for the Electric Ray" was communicated to the Royal Society of London by Lord Rayleigh. The paper was read before the Royal Society in December, 1895 and it was accepted for publication in the Society's proceedings. The University of London awarded him Doctorate of Science (D.Sc.) in 1896 without any examination. Many in India though that Bose had given a fresh scientific impetus to the age-old wisdom of the East which believed in the basic unity of all life. Swami Vivekananda, who was then in Paris, went to hear Bose at the Congress (In 1990, Bose read his paper "On the Similarity responses of Inorganic and Living Matter" before the Paris International Congress of Physicists"). Rabindranath Tagore sent his appreciation in the form of a poem.

Bose retired from educational service as senior professor of Physics in 1915. The Bose Institute established on 23rd Nov., 1917 and he become its lifetime director. In 1903, Bose was honored with Commander of the order of the Indian empire at Delhi by the British Government. He received in 1912 the commander of the star of Indian at the coronation of the British Emperor.

Bose died on 23 Nov., 1937 at Giridih in Jharkhand (then in Bihar). Every citizen should inspire his scientific effort.

Dr. Homi Jahangir Bhabha: Founder of India's atomic energy programme. (100 year)

H.J. Bhabha is mostly known as the chief architect of Indian's nuclear programme and his contribution to India's development goes for beyond the sphere of atomic energy. He was born on 30 October, 1909 in a wealthy family of Mumbai. He took the mechanical engineering in 1930. His father and Uncle Sir Dorab J. Tata wanted Bhabha to become an engineer with the view that ultimately he would join the Tata Iron and Steel Company at Jamshedpur. In 1928, Bhabha in a



letter to his father wrote: **“I seriously say to you that business or job as an engineer is not thing for me, it is totally foreign to my nature and radically opposed to my temperament and opinions. Physics is my life, I know I shall do great things here. Therefore, when Bhabha passed the mechanical Tripos at Cambridge with first class, his father allowed his son to fulfill his wishes. Bhabha joined the Cavendish laboratory, from where he obtained his Ph.D. in theoretical Physics and many sensational discoveries were made. His first research paper published in 1933 won him the Isaac Newton Studentship in 1934, which he held for three years and mostly worked in Cambridge except for a short time when he worked with Niels Bohr at Copenhagen.** At Cambridge Bhabha’s work centered around cosmic rays. It was Bhabha who suggested the term ‘meson’ now used for a class of elementary particles, whose mass intermediate between that of the electron and the proton.

In 1940, Bhabha joined the I.I.Sc. Bangalore where a readership in theoretical physics was specially created for him. C.V. Raman was then the Director of the Institute. Bhabha sent a proposal in March, 1944 to the Sir Dorab J. Tata Trust for establishing a vigorous school of research in fundamental Physics and finally, the institute named TIFR was established in 1945 in 140 square meters of hired space in an existing building.

The first step towards organizing research in atomic energy was the creation of a board of Research on atomic energy that was constituted as a part of CSIR with Bhabha as its Chairman.

Bhabha possessed sensitive and trained artistic gift of the highest order. The environment in which he grew certainly helped him to develop all these fine qualities. He loved music and dancing. In 1943 he was awarded the **Adams price by the Cambridge University for his work on cosmic rays** and Hopkins price of the Cambridge Philosophical Society. He was awarded the title of **Padma Bhushan by the government of India** in 1991. According to J.R.D. Tata, Bhabha “Scientist, Engineer, Teacher, Master-builder and administrator steeped in humanities, in art and music, homi was a truly complete man.”

Charles Darwin: (200 Year)

This Year further marks bicentenary of Charles Darwin (Feb 12, 1809- April 19, 1882) as well as the sesqui-centennial celebration of the publication of this landmark book “On the origin of species” by means of natural selection (1959). As the Biologist Dobzhansky has aptly put “ Nothing in Biology makes sense except in the light of evolution”.

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