Subramanyan Chandrashekhar

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- Subrahmanyan Chandrasekhar, **born in 1910 was an American astrophysicist of Indian origin** who spent his professional life in the United States.
- Chandrasekhar was tutored at home until the age of 12.
- He later attended the Hindu High School, Madras and subsequently studied at Presidency College.
- There he wrote his **first paper, "The Compton Scattering and the New Statistics", in 1929**.
- He obtained his bachelor's degree in Physics, in June 1930.
- After getting a **Government of India scholarship in 1930** to pursue graduate studies at the **University of Cambridge,** he was admitted to Trinity College, Cambridge.

His works and achievements:

- At the University of Cambridge, he developed a theoretical **model explaining the structure of white dwarf stars.**
- He showed that the **mass of a white dwarf could not exceed 1.44 times that of the Sun** – popularly known as the **Chandrasekhar limit.**
- Chandrasekhar **revised the models of stellar dynamics** first outlined by Jan Oort and others by considering the effects of fluctuating gravitational fields within the Milky Way on stars rotating about the galactic centre.
- After receiving a **bronze medal for his work on degenerate stars,** in **1933**, he was awarded his **PhD degree at Cambridge.**
- He was elected to a **Prize Fellowship at Trinity College** for the period 1933–1937, becoming **only the second Indian to receive a Trinity Fellowship after Srinivasa**

Ramanujan 16 years earlier.

- He served as **editor of The Astrophysical Journal from 1952 to 1971**.
- He became the **Morton D. Hull Distinguished Service Professor of Theoretical Astrophysics** in 1952.
- In **1953**, he and his wife **took American citizenship.**
- After the Laboratory for Astrophysics and Space Research (LASR) was built by NASA in 1966 at the University, Chandrasekhar occupied one of the four corner offices on the second floor.
- His efforts resulted in the book "**Newton's Principia for the Common Reader",** published in 1995.
- He was an **honorary member of the International Academy of Science.**
- He was on the faculty at Chicago from 1937 until his death in 1995.

Legacy:

- In 1979, NASA named the third of its four "Great Observatories" after Chandrasekhar.
- The **Chandra X-ray Observatory** was launched and deployed by Space Shuttle Columbia on 23 July 1999.
- The **Chandrasekhar number,** an important dimensionless number of magnetohydrodynamics, is named after him.
- The **asteroid 1958 Chandra** is named after him.
- The **Himalayan Chandra Telescope** is named after him.
- After his death, his wife made a gift of his Nobel Prize money to the University of Chicago towards the establishment of the **Subrahmanyan Chandrasekhar Memorial Fellowship.**
- **S. Chandrasekhar Prize of Plasma Physics** is an award given by the Association of Asia Pacific Physical Societies (AAPS) to outstanding plasma physicists, started in the year 2014.
- The **Chandra Astrophysics Institute (CAI)** is a program offered for high school students who are interested in

astrophysics mentored by MIT scientists and sponsored by the Chandra X-ray Observatory.

Honours:

- He was elected a Fellow of the Royal Society (FRS) in 1944.
- Henry Norris Russell Lectureship (1949)
- Bruce Medal (1952)
- Gold Medal of the Royal Astronomical Society (1953)
- Rumford Prize of the American Academy of Arts and Sciences (1957)
- National Medal of Science, USA (1966)
- **Padma Vibhushan (1968)**
- Henry Draper Medal of the National Academy of Sciences (1971)
- He was awarded the **1983 Nobel Prize for Physics with William A. Fowler** for “theoretical studies of the physical processes of importance to the structure and evolution of the stars”.
- Honorary Fellow of the International Academy of Science (1988).