



KAMARAJ IAS ACADEMY
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Vainu Bappu Observatory

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Why is in news? Stellar discoveries of the 40-inch telescope at the Vainu Bappu Observatory

The several stellar discoveries of the 40-inch telescope at the Vainu Bappu Observatory in Kavalur, Tamil Nadu, were highlighted at the celebration of its 50 years of operation on 15-16 December.

The telescope set up by Professor Vainu Bappu has played a significant role in astronomy with major discoveries like the **presence of rings around the planet Uranus, a new satellite of Uranus, the presence of an atmosphere around Ganymede which is a satellite of Jupiter.**

Other important research conducted with this telescope includes the discovery and study of many '**Be stars**', **Lithium depletion in giant stars, optical variability in Blazars, the dynamics of the famous supernova SN 1987A** and so on.

The telescope in the observatory under the **Indian Institute of Astrophysics (IIA)**, an institute of the Department of Science and Technology (DST), continues to be relevant because of the backend instruments that engineers and astronomers built over the last 50 years to keep the telescope competitive among its peers.

By the 1960s, it was clear that India needed a high-quality optical observatory to conduct research in modern astronomy, and after an extensive search, Professor Vainu Bappu chose Kavalur as the site for such an observatory.

The skies above Kavalur were excellent, and its southern location would allow it to see most of the northern and southern skies.

A few years after the observatory started operation, Prof. Bappu placed an order for a 40-inch telescope with Carl Zeiss of Jena (then East Germany), which was subsequently installed in 1972.

The telescope, whose mirror has a diameter of 40 inches or 102 cm, was installed in 1972 and started producing important astronomical discoveries soon after. The expertise gained by the engineers also enabled IIA to build the fully indigenous 90-inch (2.34 metre) telescope in the 1980s.

Indian Institute of Astrophysics:

The Indian Institute of Astrophysics is a **premier institute devoted** to research in astronomy, astrophysics and related physics. It traces its origins back to an observatory set up in 1786 at Madras which from the year 1792 began to formally function at its Nungambakkam premises as the Madras Observatory.

In 1899, the observatory moved to Kodaikanal. In the year 1971, the Kodaikanal Observatory became an autonomous society, the Indian Institute of Astrophysics. The headquarters were shifted to Bengaluru into its present campus in **Koramangala in 1975.**

Today, funded by the Department of Science and Technology, the Institute ranks as a premier institution devoted to research and education of astronomy and physics in the country.

The **main observing facilities** of the Institute are located at **Kodaikanal, Kavalur, Gauribidanur and Hanle.**

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The Kodaikanal Observatory has for over a century been the principal centre of activity in observational solar and atmospheric physics.

The **Vainu Bappu Observatory at Kavalur** has been the main optical observatory of the Institute for nighttime astronomy since the late 1960s.

The **Gauribidanur Radio Observatory** has a decametre wave radio telescope array and a **radioheliograph**.

The new high altitude **Indian Astronomical Observatory (IAO) at Hanle** in south-eastern Ladakh has augmented the facilities for nighttime astronomy. Here, a 2 metre Himalayan Chandra Telescope has been installed in 2001. A seven-unit High Altitude Gamma Ray (HAGAR) telescope is in operation at the Hanle site.