

# Indian Institute of Astrophysics



[The Indian Institute of Astrophysics](#) (IIA), an autonomous research institute funded by the Department of Science & Technology, is devoted to research in Astronomy & Astrophysics, and the Related Physics and Instrumentation.

IIA has a rich history of over two centuries and has to its credit some important discoveries such as those of the Evershed effect, atmosphere on Jupiter's satellite Ganymede, the rings around Uranus and the asteroid Ramanujan.

## **Research Programmes**

Research fields in Astronomy & Astrophysics at IIA range from the studies of the nearby sun and solar system objects to the distant galaxies, quasars and gamma-ray burst sources.



**Solar Corona**

[Sun and the Solar System](#) - Solar activity - sunspots, prominences; Solar Chromosphere and Corona; Comets; Solar Terrestrial relationships

[Stellar Physics](#) - Formation and Evolution of Stars; Planetary Nebulae; Stellar Atmospheres; Star Clusters; Stellar Variability; Novae; Supernovae; Brown Dwarfs, Pulsars

[Extragalactic Astronomy](#) - Star formation in galaxies; Activity in Galaxies; Groups and Clusters of Galaxies; Gamma-ray burst events

[Theoretical Astrophysics and Related Physics](#) - Magnetohydrodynamic and Radiative Processes in Astrophysical Objects; Structure of Neutron Stars; Blackhole Physics; Structure and Dynamics of Galaxies and Star Clusters; General Theory of Relativity; Cosmology; Astroparticle Physics; Atomic and Molecular Physics

[Instrumentation](#) - UV Imaging Telescope for the Indian Astronomy Satellite (ASTROSAT); back-end instruments for the various observing facilities.



**Comet Machholz  
observed from VBO**



**NGC 925 observed with  
the 2m HCT**

## **Facilities**

The Institute's research activities are supported by excellent facilities at its headquarters in Bangalore and its field stations at Kodaikanal, Kavalur, Gauribidanur, Hosakote and Hanle.

[The Solar Observatory](#): located at Kodaikanal consists of a Tower Tunnel Telescope, Spectroheliographs and Ionosondes.



**Solar Tunnel Telescope**

[The Vainu Bappu Observatory\(VBO\)](#) : located at Kavalur has the 2.3m Vainu Bappu Telescope(VBT) and the 1m Zeiss Telescope.

[Gauribidanur Radio Heliograph](#) : located at the Gauribidanur Radio Observatory of Raman Research Institute and IIA.



**2m Himalayan Chandra Telescope**

[The Indian Astronomical Observatory\(IAO\)](#) : located at Hanle, in the Ladakh region, houses the remotely operated 2m Himalayan Chandra Telescope (HCT). This observatory, at an altitude of 4500m is the world's highest ground based facility for optical and near-IR astronomy. A High Altitude Gamma-ray Telescope (HAGAR) is also being set up at IAO, in collaboration with the Tata Institute of Fundamental Research, Mumbai.

[Centre for Research and Education in Science and Technology\(CREST\)](#) : located at Hosakote, hosts the remote controls of the HCT; facility for integration and calibration of space payloads and laboratory for experiments in optical physics.

## **IIA Ph.D. Programme**

The [IIA Ph.D. programme](#) forms a vital component of research and training at the Institute. Graduate students selected under this programme work at IIA, towards a Ph.D. degree. Selection to the Programme that begins in August 2008 is (a) through the Joint Entrance Screening Test (JEST)-2008; (b) candidates who have qualified the UGC-CSIR NET (2008) in Physics, with fellowship; or (c) those who have obtained above 95 percentile in GATE-2008 in Physics. Application details for candidates falling under categories (b) and (c) are available [here](#).

Students with M.Sc (Physics/Mathematics/Astronomy), B.E./M.E. (Electrical/Electronics/Mechanical/Instrumentation) are eligible to apply for this Programme.

Students admitted under this programme are initially offered a Junior Research Fellowship (JRF) and can qualify for a Senior Research Fellowship (SRF) after a period of 2 years. The total tenure of the Fellowship is 5 years.

The stipend of JRF is Rs. 12,000/- p.m. and that of SRF is Rs. 14,000/- p.m. In addition an annual book grant is provided.



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Vainu Bappu Observatory