भारतीय ताराभौतिकी संस्थान

INDIAN INSTITUTE OF ASTROPHYSICS

कोरमंगला **Koramangala,** बेंगलूरु **Bengaluru – 560034.**

स्नातक अध्ययन मंडल **Board of Graduate Studies.**

Ph.D enrollment Seminar

Speaker: Gurwinder Singh

Title: High-Resolution Adaptive Optics system for HCT/JCBT

सार **Abstract**

Adaptive optics (AO) is crucial for enhancing the performance of ground-based telescopes by mitigating atmospheric turbulence. There are compelling scientific and technical reasons to develop AO systems for 2-meter-class telescopes. Over the past decade, low-cost Robo-AO systems utilizing off-the-shelf hardware have been successfully implemented on several telescopes worldwide. My PhD research focuses on the design and development of a Rayleigh Laser Guide Star (LGS) AO system for IIA's telescopes. I am currently working on AO optical design and exploring the feasibility of implementing it on either the Himalayan Chandra Telescope (HCT) or the J.C Bhattacharya Telescope (JCBT). The weight and space constraints on both telescopes will play a key role in guiding the optomechanical design of the AO system. The proposed AO system will incorporate cost-effective hardware, including wavefront sensors, deformable mirrors, high-speed cameras, and UV laser systems. In this talk, I will present a tentative outline of my PhD work, discuss main technical considerations, and highlight the next steps toward developing an AO system tailored for IIA's telescopes.

गुरुवार Thursday 06, फरवरी February 2025

Venue: प्रेक्षागृह Auditorium

Time: 11:00 AM

सभी का स्वागत है All are welcome.