



भारतीय ताराभौतिकी संस्थान
INDIAN INSTITUTE OF ASTROPHYSICS
कोरमंगला Koramangala, बेंगलूरु Bengaluru – 560034.

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

STUDENT SEMINAR
(Part of Comprehensive Examination)

Speaker: Mr. Sriram Krishna

शीर्षक Title: A high-resolution study of the hottest Extreme Helium stars

सार Abstract

The extreme helium stars (EHes) and related objects like R Corona Borealis Stars (RCBs) are H-poor supergiants whose origins are not yet understood. Abundances of key elements are required to pin down their origin. We observed high-resolution echelle spectra of the EHe HD 160641 from McDonald observatory and supplemented it with legacy spectra from European Southern Observatory (ESO). We also use ESO legacy spectra to study EHe LS IV +06 2. These are the hottest known stars of this type with an estimated surface temperature of 34,000 K and 32,000 K, respectively. Sharp and narrow absorption lines are observed in LS IV +06 2, and these are used to confirm our line identification in HD 160641. The absorption line spectra of these stars are well-represented by the neutral and ionized Helium lines as well as CNO with alpha- and iron-peak elements. To study the surface composition of these stars we need to construct a grid of model atmospheres using TLUSTY and compute synthetic spectra using radiative transfer code SYNSPEC. I shall present the results of this work, which includes the estimation of elemental abundances; other stellar parameters viz effective temperature, surface gravity and microturbulence; and synthesized spectra of Helium lines. We also studied the variation in radial velocity of the star HD 160641, which indicates pulsations.

मंगलवार Tuesday 24, सितम्बर September 2024

Time: 2:30 PM

Venue: प्रेक्षागृह Auditorium

सभी का स्वागत है All are welcome.