

Observational and Computational Astrophysics Lab

1. Apply knowledge of optical telescopes to effectively observe and analyze celestial objects.
2. Demonstrate proficiency in using CCD based photometers and detectors for stellar photometry.
3. Analyze data to estimate the temperatures of stars and study solar limb-darkening effect.
4. Interpret B-V photometry data to determine the effective temperature of stars.
5. Apply principles of calorimetry to determine the solar constant.
6. Analyze Fraunhofer absorption lines to understand solar photosphere.
7. Utilize SN1a data to calculate the deceleration parameter and the Hubble parameter of the universe.
8. Determine the height of lunar mountains using observational data.
9. Conduct night observations using a 14 inch telescope for stellar photometry and spectrometry.
10. Participate in radio data analysis to gain insights into astrophysical phenomena.
11. Demonstrate hands-on experience through visits to observatories and facilities for practical learning.
12. Apply computational methods to study planetary dynamics, chaos, and spherical accretion models.
13. Analyze stellar structure and atmosphere using radiative transfer techniques.
14. Calculate cosmological distances and estimate the age of the universe based on observational data.

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