

PHYSICS SEMINAR

Peeling the Onion: Calibrating Astronomical Images for Science and Photography

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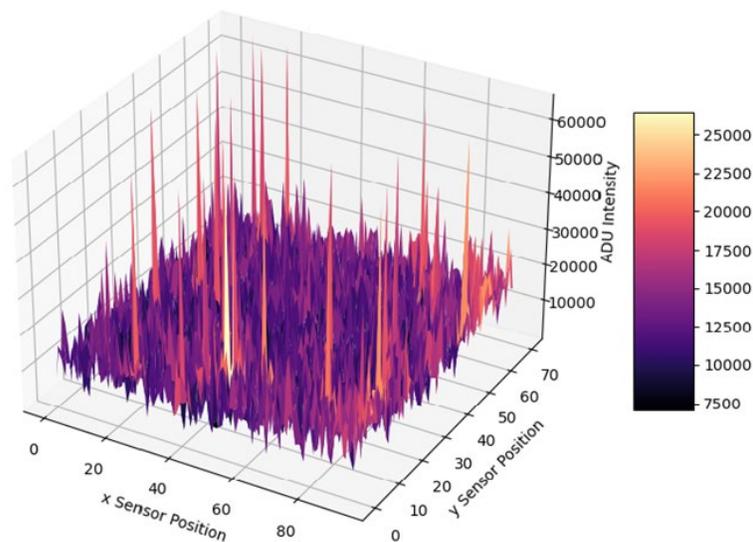
Thursday, February 26, 2026

12:30 – 1:30 p.m.

WS 160

When capturing astronomical images—whether for rigorous science or aesthetic astrophotography—the primary challenge is isolating the signal from the noise. Extraneous signals from electronics and the environment wrap around the celestial data like the layers of an onion. To reveal the true signal, an imager must peel these layers away using a systematic calibration workflow. We will examine the roles of bias, dark-current, and flat-field frames, focusing on the order of operations and the underlying mathematics of the calibration process. Through the direct application of these techniques to a sample data set, we will characterize noise profiles across different camera sensors and demonstrate how to achieve scientific-grade results.

3D Dark Current Topology: ZWO ASI1600 300s Dark



Refreshments!