

**2020—2021 ASTROPHYSICS SEMINAR SERIES****The Single-lined Eclipsing Binary Advantage with TESS and Gaia**

For decades, bright stars in double-lined eclipsing binaries (DLEBs) have been the "royal road" to stellar astrophysics: the individual stars' fundamental properties can be measured precisely, accurately, and directly from both stars' spectra and eclipses. However, the advent of high-precision observations from *Gaia* and the Transiting Exoplanet Survey Satellite (TESS) is turning single-lined EBs (SLEBs) into novel laboratories in their own right, even converting their relative disadvantage -- the loss of one star's spectrum -- into an asset.

I will present a few "keystone" TESS SLEBs and show how we can now characterize them in unprecedented detail through combined analyses of their TESS light curves, Gaia parallaxes, RVs, and spectral energy distribution. I will highlight how these SLEBs enhance our understanding of stellar structure and formation across the main sequence, and I will discuss their near-term prospects for studying stellar atmospheres in greater detail.

**Monday, March 1st**

3:30 - 4:30 p.m.

See website for Zoom details

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