

2019—2020 ASTROPHYSICS SEMINAR SERIES**Imaging and Surveying Spotted Stars**

For stars with convective outer layers, stellar magnetism manifests as dark starspots--localized regions of stifled convection. Starspots affect measurements of fundamental stellar parameters, including temperature and radius, which lead to inaccurate estimates of age and mass. Additionally, starspots have been shown to mimic and obscure detections of planets. By imaging stellar surfaces, we begin to disentangle the signatures of stellar magnetism. The imaging efforts discussed here feature aperture synthesis imaging using interferometric data collected with the Michigan Infrared Combiner (MIRC) at Georgia State University's Center for High Angular Resolution Astronomy (CHARA) Array with sub-milliarcsecond resolution. We characterize active RS CVn binary systems and detect magnetic structures across the surface of the giant primary stars and compare the results to simultaneous Doppler and light curve inversion imaging. The observed global regions of suppressed convection likely affect stellar parameter estimates by altering the structure of the photosphere. New extensions of this study will survey spotted stars in order to understand how stellar magnetism affects stellar parameters, impacts the evidence of companions and their characterization, accounts for long-term changes in the flux of active stars, and differs from the Sun for stars with large convective envelopes.

**Monday, October 7th**

3:30 - 4:30 p.m.

725 Commonwealth Ave | Room 502

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