

# COLLOQUIUM SERIES

## The search for terrestrial worlds

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We are in a golden age of discovery of planets beyond our solar system, with thousands of known exoplanets helping us better understand how planets form, evolve, and where habitable environments might exist. However, the most Earth-like planets—temperate, rocky worlds orbiting Sun-like stars—remain difficult to detect due to their extremely faint signals. Overcoming this challenge requires both highly precise instrumentation and deeper understanding of stellar physics. Our group uses advanced spectrograph systems to develop new calibration techniques at the atomic level and to study stellar and solar spectra with high precision. In this talk, I will highlight our current projects, including testing calibration algorithms, tracking stellar magnetic activity, and investigating spectral distortions in solar observations.