

# Dynamos, Magnetic Activity and Doppler Tomography: Young stars with HRMOS

*Tuesday, October 19, 2021 11:20 AM (25 minutes)*

In their youth, low-mass (0.1-1.5 Msun) stars are rapidly rotating, magnetically active and may be accreting gas from a circumstellar disk. As they age, planets form and possibly migrate, disks disperse and stars spin down, becoming less magnetically active. The magnetic field, generated by a rotation-driven dynamo process, plays a key role in all of these events; the stressing and twisting of buoyant magnetic fields by differential rotation and turbulence leads to manifestations such as starspots, chromospheric and coronal heating and prominences; the magnetic field can couple to the stellar wind or surrounding accretion disk to regulate and lose angular momentum, which in turn feeds back into the dynamo. HRMOS offers a unique opportunity to provide long-term monitoring and Doppler imaging of the surface and coronal magnetic activity, prominences and starspot patterns of large samples of stars in open clusters at a variety of well-determined ages. I will describe some of the science goals and the technical requirements of such a project.

## Type

invited talk

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