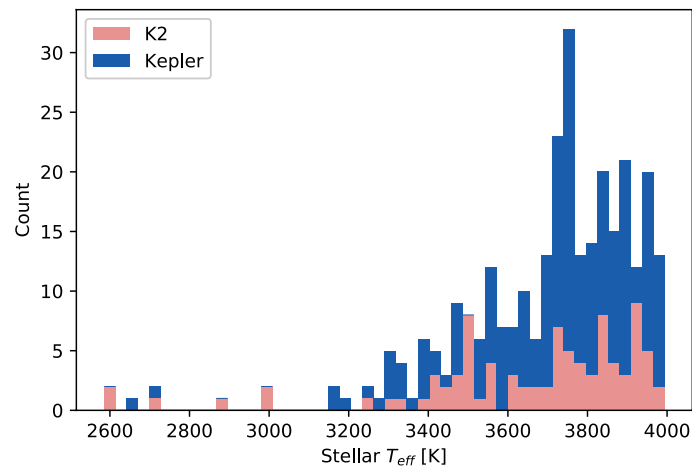


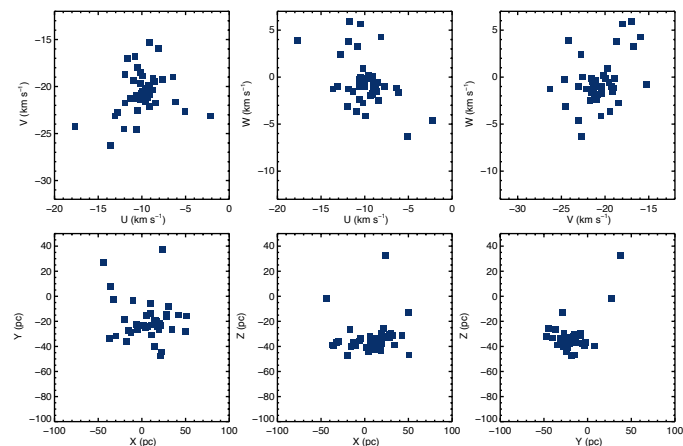
Characterization of Young Red Dwarfs in the Solar Neighborhood

Adina Feinstein (Mentor: Joshua Schlieder)

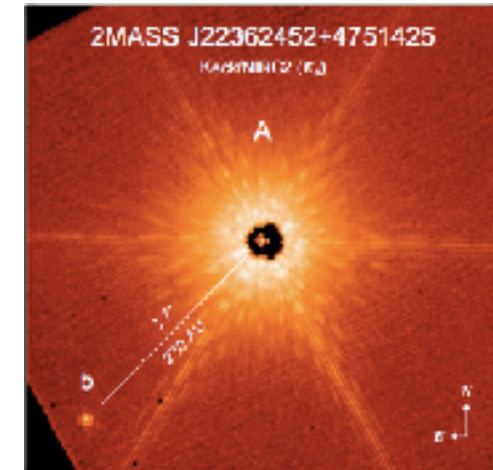
Motivation



All low-mass stars with potential or confirmed planetary companions from Kepler and K2 (NASA Exoplanet Archive).



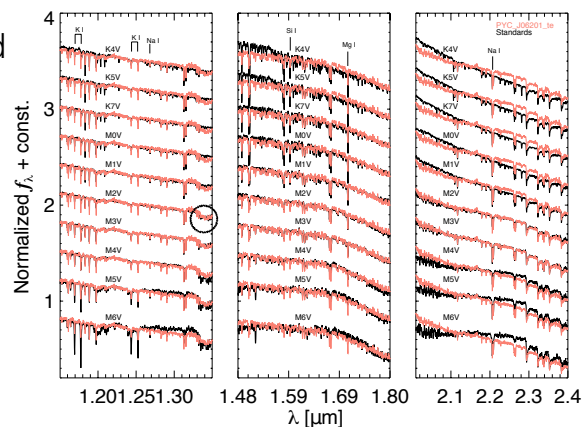
UVWXYZ galactic velocities and positions for known Tuc-Hor moving group members.



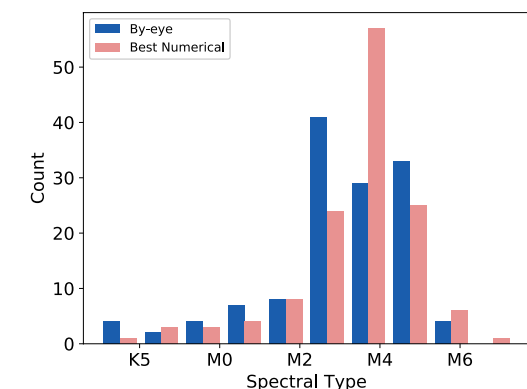
Direct imaging of a planet around 2M2236+4751 A, a K7 candidate member of the AB Doradus moving group (Bowler et al., 2016)

Step 1: Spectral Typing

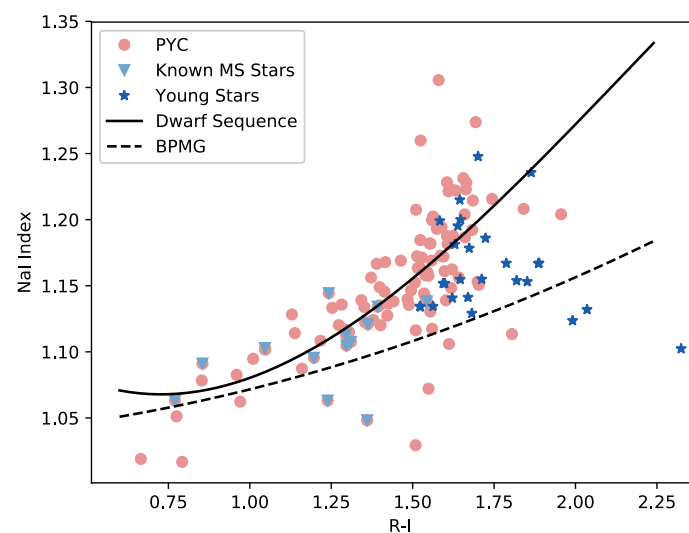
Example of a reduced spectra (right). Spectral types are determined by fitting overall shape in the JHK bands and the strength of the water absorption feature.



Numerical spectral type determined by looking at temperature-sensitive indices identified in previous literature. Distribution of types shown left.

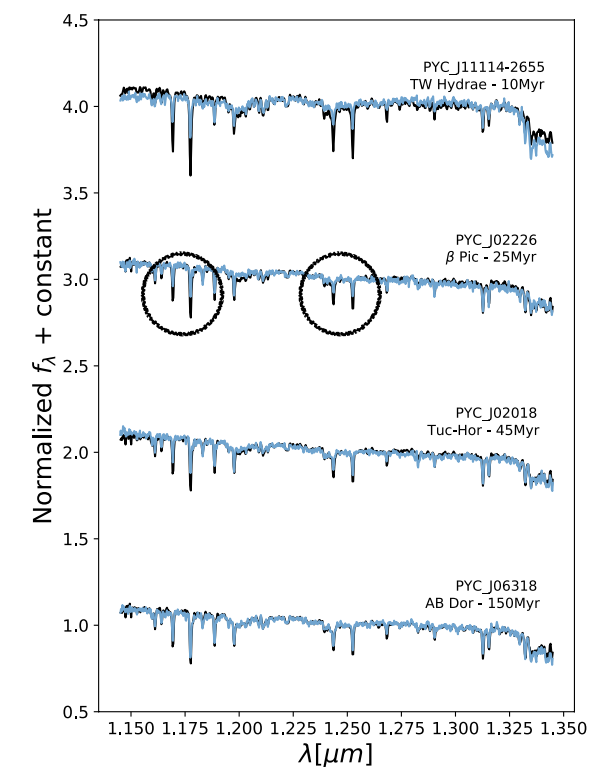


Step 2: Aging



Ages determined by looking at gravity-sensitive spectral indices identified in previous literature.

Step 3: Confirming Youth



Identified 27 potentially young stars in a sample of 119.