**Monitoring the Closest Stars in K2 Fields 6 and 7**

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The fundamentals of stellar astronomy are built upon studies of nearby  
  
stars. Because of their proximity and brightness, they provide us  
  
with the most reliable answers to questions about stellar populations,  
  
multiplicity, structure, and evolution.   
  
These nearby stars have accurate optical/infrared photometry in  
  
addition to accurate parallaxes, so we know their precise locations on  
  
the HR diagram. Using the combination of available parallaxes and  
  
photometry, we will answer a fundamental question in stellar  
  
astronomy: What stellar parameters of K and M dwarfs cause the main  
  
sequence (MS) to be up to three full magnitudes in width? In order to  
  
answer this question, we need to understand their multiplicity,  
  
metallicities/ages, variability characteristics, radii, and rotation  
  
rates.   
  
The RECONS team has inititated programs to understand the  
  
relation between the MS width and different stellar parameters  
  
discussed above. Because of the limited precision on the ground based  
  
observations to measure rotation periods, we propose to utilize the K2  
  
mission to observe the sample of the nearest K and M dwarfs within 25  
  
pc to accurately determine their rotation rates. In K2 fields 6 and  
  
7, we will observe seven nearby systems, including two K and five M  
  
dwarfs. Of particular interest is the GJ0729 (M3.5V), which at 2.96  
  
pc is the 9th closest system to the Sun. We expect to have the most  
  
complete characterization of a set of the nearest K and M stars in all  
  
K2 fields that has ever been accomplished,