

COMPLETING THE KEPLER SURVEY OF BRIGHT K AND M DWARFS

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Kepler's unique combination of high-precision, high duty-cycle, and large sample size enables investigations that are impossible to do otherwise, and thus Kepler is ushering in a new era in stellar astrophysics. Kepler has observed approximately 197,000 stars in total, of which about 160,000 are continuously being observed. Of those, 63,116 are main sequence K and M stars, and 13,161 are brighter than $K_p=14.5$ mag. However, this sample of K and M stars is incomplete - there are nearly 1000 bright systems in the field of view that Kepler has not, and is not planning to, observe. We propose to complete the Kepler survey of bright (and hence nearby) K and M dwarf stars with this GO proposal. Specifically, we request one Quarter of observations on each of the "missing" 968 stars with $K_p < 14.5$ mag, $\log g > 3.9$, and temperatures $T_{\text{eff}} < 5500$ K (values are taken from the Kepler Input Catalog "KIC"). We will analyze and catalog these targets based on their light curve morphology, and the number of stars is small enough that we can give each system individual attention. This no-risk proposal is a guaranteed success in that it will certainly reveal many new cases of pulsating stars, variable stars, eclipsing binary stars, and potentially more exotic stellar systems. But most importantly, it completes Kepler's reconnaissance of the bright, main sequence, K and M stars.