

## **ABSTRACT**

**THESIS:** Photometric Parallaxes and Subdwarf Identification for M-Type Stars

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Photometric data on the Kron-Cousins photometric system have been obtained for 118 new late K to middle M-type stars with known distances. These data have been used to obtain absolute red magnitudes, to construct a color-magnitude diagram, and to compute a polynomial function for disk dwarf stars in the color range  $1.5 \leq R-I < 2.0$ , which can be used to compute absolute red magnitudes to be used for photometric parallaxes. Such photometric parallaxes allow distance estimations that are essential when modeling the spatial distribution of stars in our Galaxy. This is important for M-type stars, as they make up more than half of the mass of the Milky Way. Intermediate-band CaH observations have also been obtained to distinguish stellar luminosity classes and populations; R-L and R-I colors are used to identify possible subdwarf stars. A total of seven possible new subdwarfs and three previously known subdwarfs have been identified with this method.