

GROUND-BASED FOLLOW-UP AND LIGHT CURVE MODELING OF ECLIPSING BINARIES TO DETERMINE LIMB DARKENING EFFECTS FOR THE KEPLER BANDPASS

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We will use NMSU facilities to obtain UBVRI light curves of Algols in the Kepler field of view to ascertain the limb darkening for the broad Kepler bandpass. As we show below, limb darkening strongly affects parameters extracted from exoplanet transits. The Kepler bandpass is very broad, and therefore the derived, mean limb darkening cannot be easily predicted. This is especially true given the fact that limb darkening for normal stars has been shown to be in error by $\pm 10 - 20\%$! We have a current program to derive the limb darkening effects for a sample of Algols with a large range of spectral types. To extrapolate our results to the Kepler bandpass we request observations of 15 Algols in the Kepler field-of-view, and support to observe these Algols using NMSU facilities. In this way we can combine our ongoing program on limb darkening measures for long period Algols, with one specifically tied to Algols observed with Kepler, to quantify the limb darkening in the Kepler bandpass.