Searching for Tertiary Companions to Eclipsing Binary Systems in the LMC MICHAEL MALMROSE[1], STACY PALEN[2], Weber State University — We use a new method to search for possible tertiary companions to EB's in the MaCHO database. By binning the light-curve data and averaging the magnitude, we derive an average light curve by linear interpolation. This curve is directly compared to the observed data. The O-C phase is determined by subtracting the phase of a data point from the phase when the average curve has the same magnitude. This is done for both the primary and secondary eclipses. The O-C data are then plotted as a function of time. We use a Lomb periodogram to search the O-C data for high power signatures in a range of frequencies, yielding periods of possible tertiary companions. We phase-fold the O-C data obtained from both red and blue filters. We currently observe the signature sinusoidal variations of a tertiary companion in two systems for both wavelengths. We suspect that these two objects are stellar in nature.

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