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Stella Surface Imaging of LO Pegasi via Light-Curve Inversion[1]
JESSIE MILLER, Ohio Wesleyan University, ANDREA RICHARD, Muskingum University, ROBERT HARMON, Ohio Wesleyan University — The purpose of this research was to map the starspots on LO Pegasi (HIP 106231), a K8 main-sequence star, in order to create an image of the star's photosphere. CCD images of LO Pegasi were taken during May, June, and July 2009 through B, V, R, and I photometric filters using a 0.2-m Meade Instruments LX200 Schmidt-Cassegrain telescope and Santa Barbara Instruments Group ST-8XE CCD camera at Perkins Observatory. Differential aperture photometry was performed on the images so as to create light curves in the form of plots of intensity vs. rotational phase. The lightcurves were processed via the Light-Curve Inversion (LI) algorithm. This algorithm creates a reconstructed image of the star's surface showing the locations of starspots. The locations of the spots visible on the 2009 are at lower latitudes than those deduced from the 2008 light curves. In addition, overall dimming observed of LO Pegasi since 2008 implies that there is a spot on the visible pole. Since a polar spot does not modulate the rotational light curve, it is not reproduced in our images.

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