1 Background

Wisniewski et al. [1] presented results from optical spectroscopy of two σ Ori E type stars discovered during the SDSS-III/APOGEE survey. σ Ori E stars are a rare group of B stars with strong, variable magnetic fields, and weak, broad emission in the hydrogen lines. The emission is explained via the Rigidly Rotating Magnetosphere model, whereby the stellar winds are trapped a few stellar radii away at the intersections of the magnetic and rotational equators. The emission lines arise from these gaseous accumulations, which are forced to co-rotate at the rotational velocity of the stellar surface.

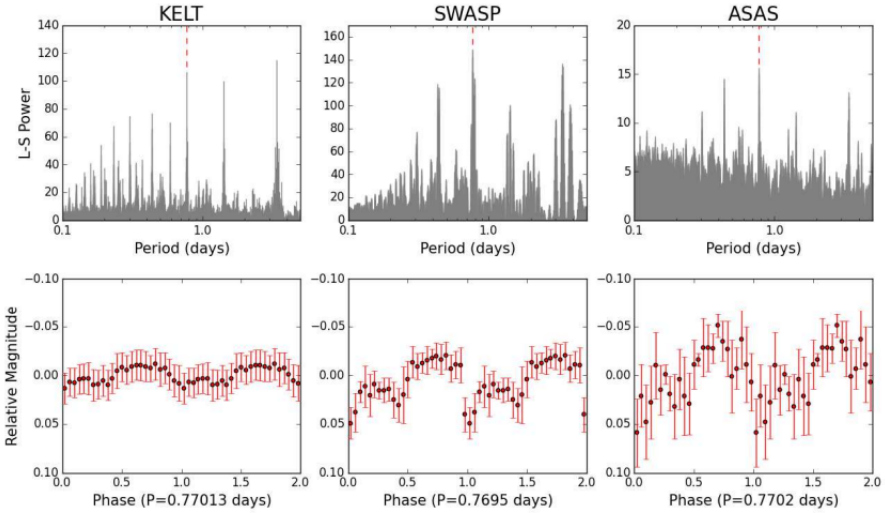

Figure 1: Phase-fold lightcurves for HD 345439.

Perhaps the key result of this paper is the tentative establishment of a photometric period for the variability associated with HD 345439. Figure 1 shows optical lightcurves for HD 345439, folded by the estimated period of ∼0.77 days.

References

[1] J. P. Wisniewski, S. D. Chojnowski, J. R. A. Davenport, J. Bartz, J. Pepper, D. G. Whelan, S. S. Eikenberry, J. R. Lomax, S. R. Majewski, N. D. Richardson, and M. Skrutskie. Characterizing the Rigidly Rotating Magnetosphere Stars HD 345439 and HD 23478. *ArXiv e-prints*, August 2015.