

## **Searching for Magnetic Activity in Solar-Like Stars Observed by *Kepler***

Lauren Balliet (Clarion University of Pennsylvania, Pennsylvania),  
Space Science Institute, Boulder, CO.

Mentor: Savita Mathur

The exact mechanisms causing solar magnetic activity are not completely understood. In order to determine what is generating the dynamo of the Sun, a broader study needs to be conducted. Studying solar-like stars allows for various perspectives. We selected a sample of 540 pulsating solar-like stars observed by the *Kepler* mission. This sample is interesting because the asteroseismic studies of these stars have provided accurate stellar properties. Magnetic cycles result from the relationship between the rotation, convection and magnetic field. In the first part of my project, I analyzed this data set to determine their rotation periods. To do so, I looked at the autocorrelation and the time-frequency analysis of the light curve. To verify the reliability of the measurements, I performed a visual check of the results. Then from this subsample, I performed an analysis to determine if magnetic cycles are present by computing the magnetic proxy based on photometric data and by doing a time-frequency analysis. We found 15 candidates that are believed to have magnetic cycles present. In addition, we looked at the changes in the amplitudes of acoustic modes. From these results we can provide a sample of well-characterized stars to better understand the dynamo of our Sun.