Breakthrough Listen URAP

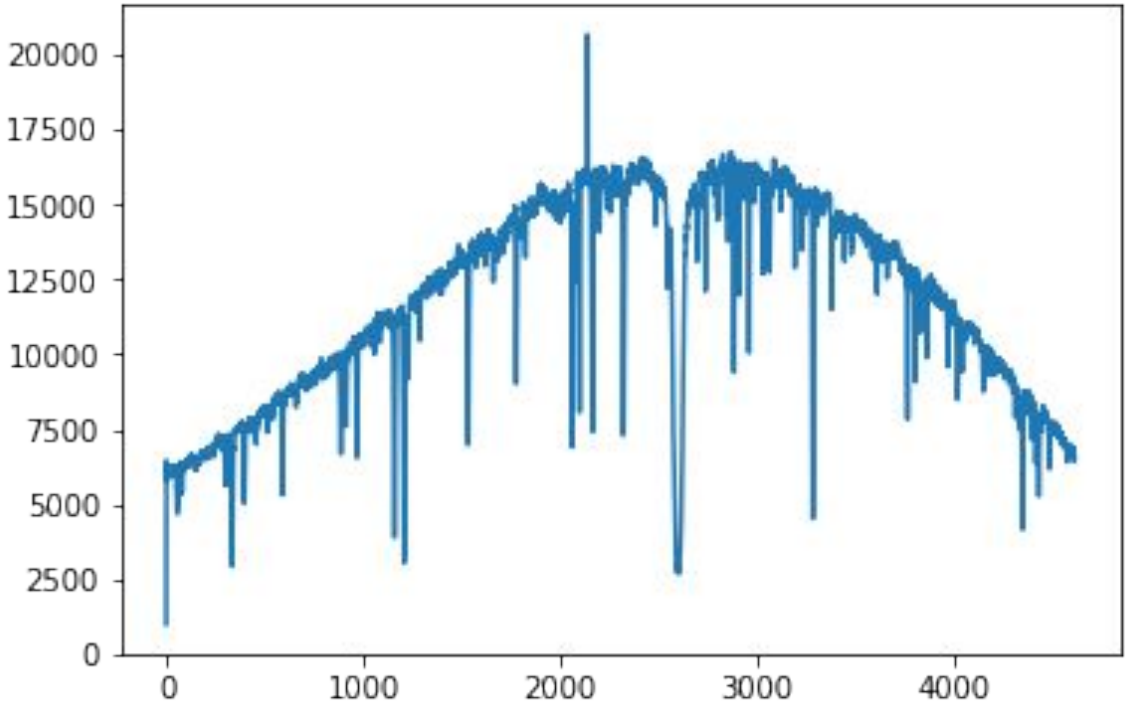
Fall 2019 - Jackie Telson

Aims and Approach

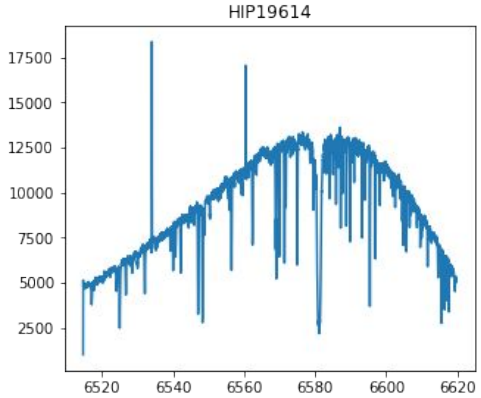
- Problem: need to compute chi squared values for thousands of stars
- Learning about the different steps
- Recreating previous work to fully understand the methods
- Creating a condensed program to compute the best chi squared value for each star in a group of files

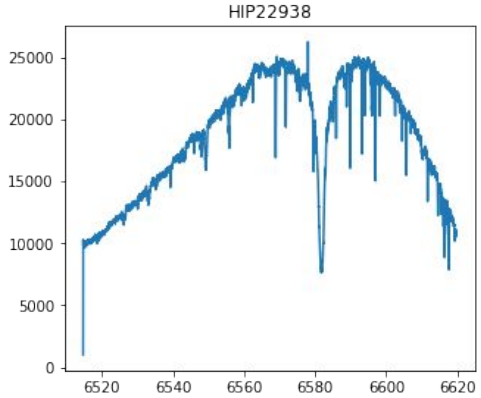
Hydrogen alpha absorption feature

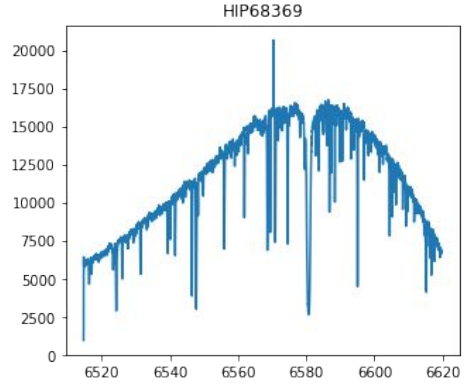
Plot of 53rd order of a fits file from APF

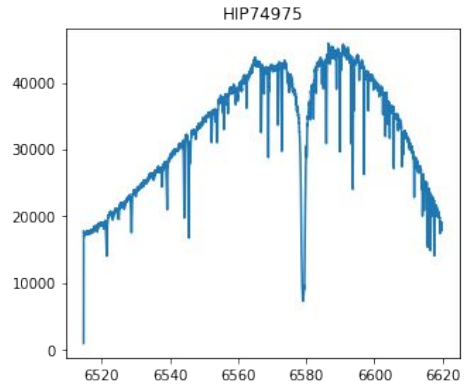


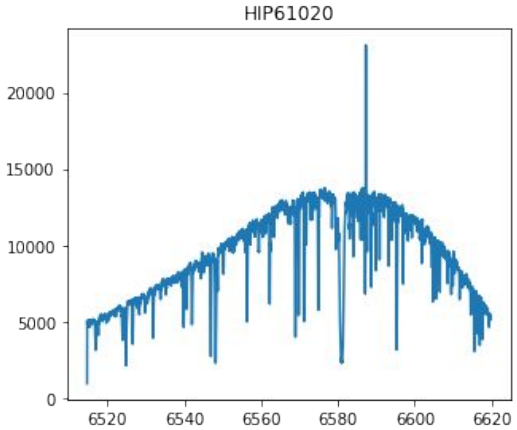
X-axis rescaled to wavelength



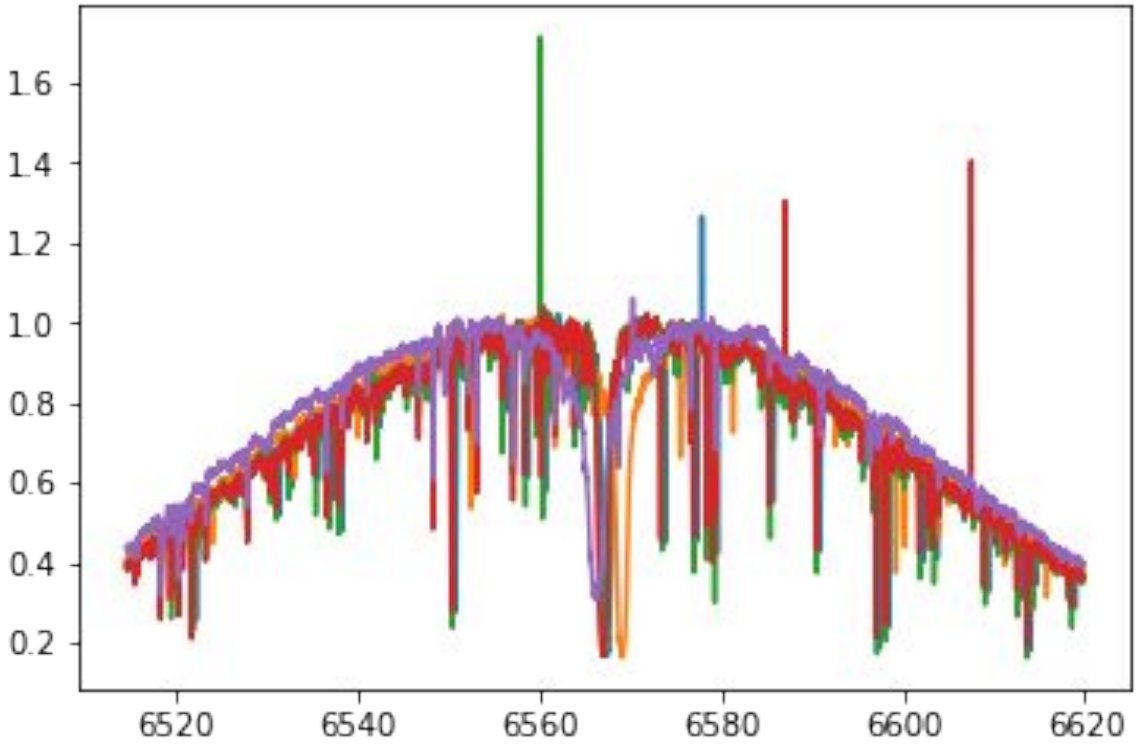






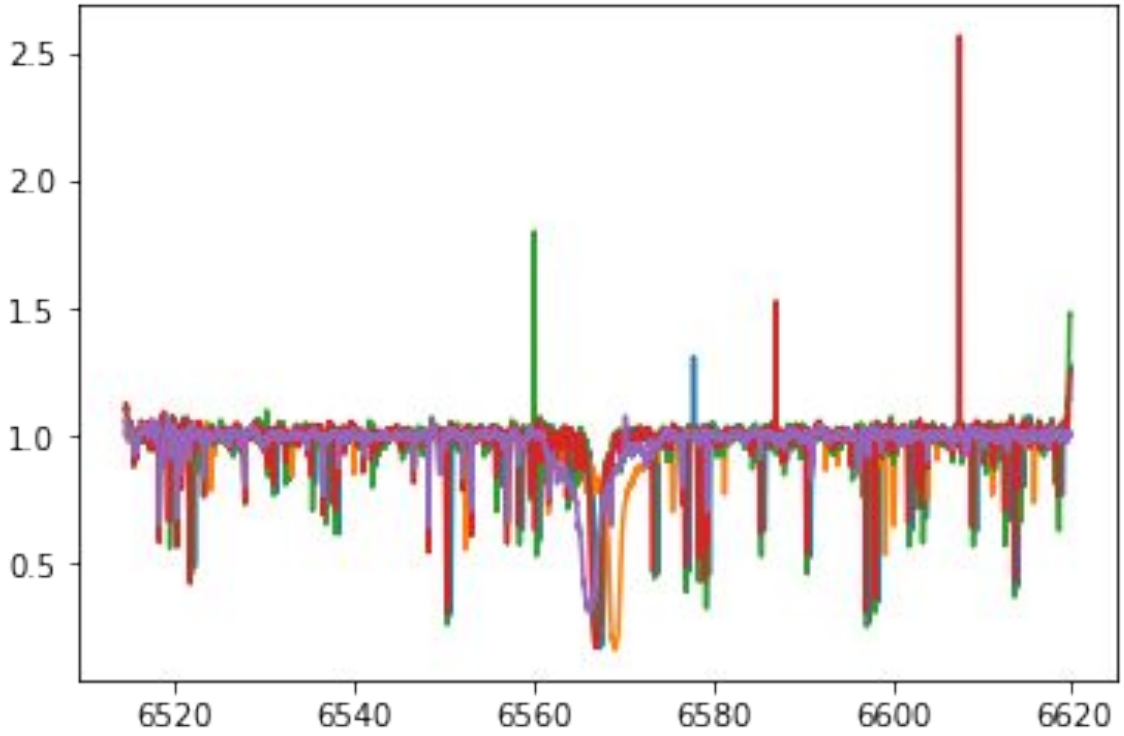


Normalized

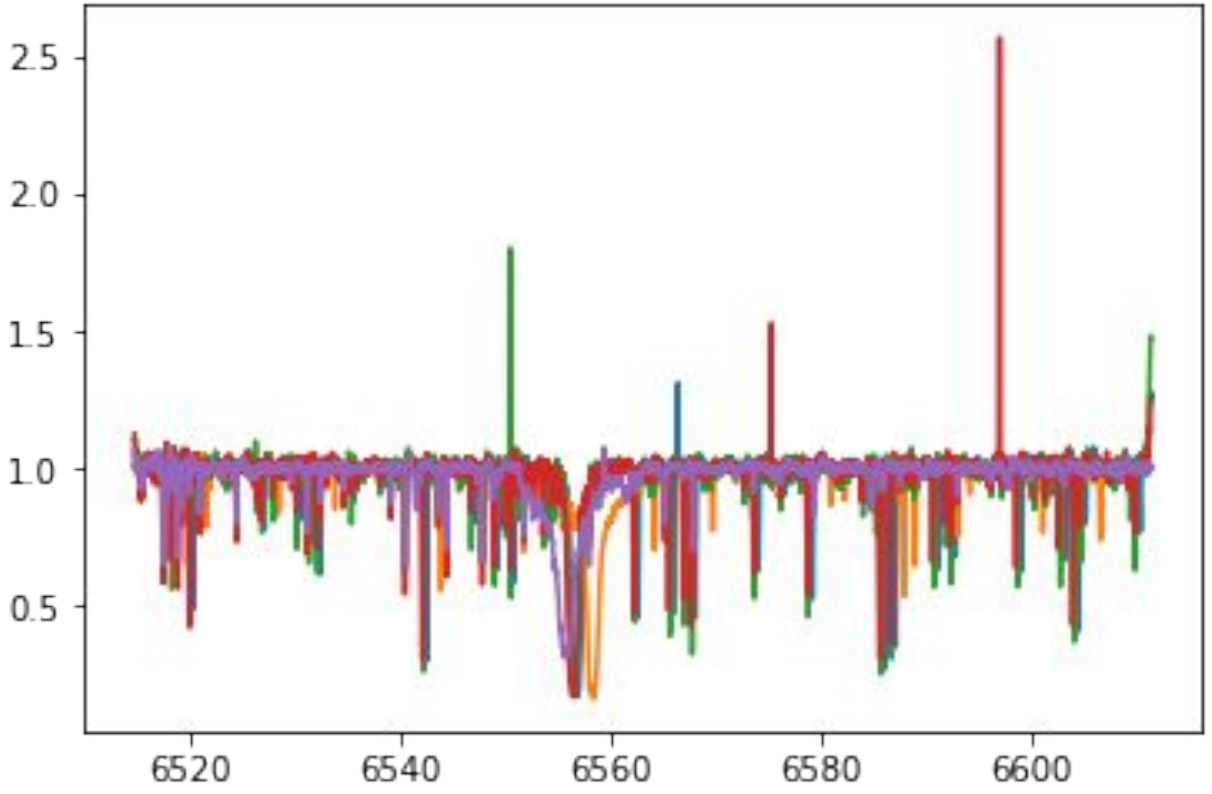


Deblazed

H-alpha spectral line occurs at about 6560 Angstroms

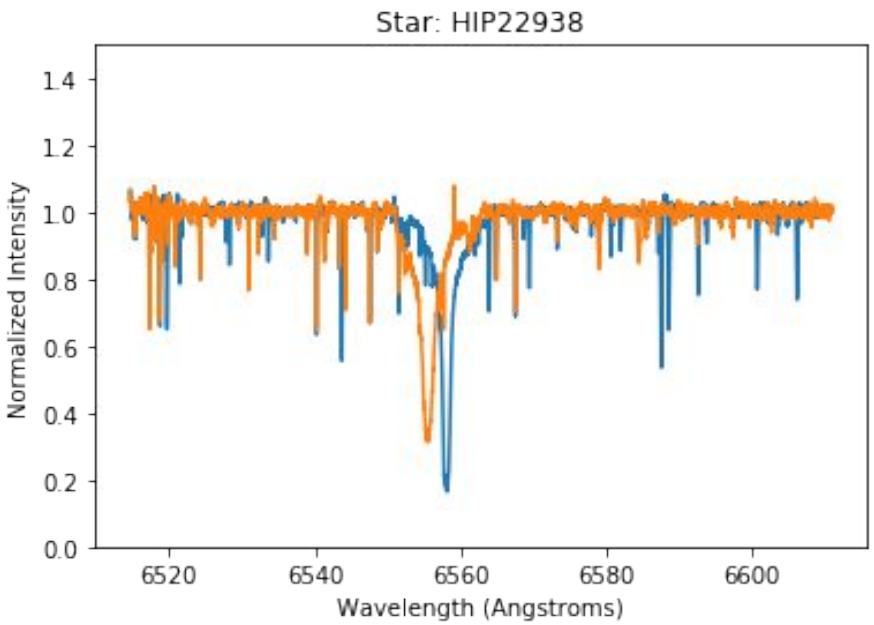


Redshift



Chi Squared

X^2 = 137.25



X^2 = 41.57