

John Linarelli  
Union College

### 2018 Conference Abstract

This project was created to experiment on the effect of high temperature over time on diffusion of key elements in pyrrhotite samples. Experiments at high temperatures were conducted to relate these temperatures and times to quantified diffusion. This was done with the end goal of approximating the closure temperature of these materials. Meteorites from planet cores that collided and shattered are composed of pyrrhotite and other trace metals like lead. Lead diffusion is just one piece of the puzzle, as multiple isotopic systems together will help reconstruct early planetary processes scientifically. A variety of methods were used to prepare samples, while Rutherford Backscattering Spectroscopy was used to measure diffusion. There are no conclusive results to this project as of yet.