

Planetary Lunch Seminar (PLS)

Open to the EAPS community and beyond

Dr. Amy Steele
Graduate Student
University of Maryland

Tuesday, Nov. 17th
12:30p

<https://mit.zoom.us/j/93780807887>

Constraining the Composition of Planetary Material Around White Dwarf Stars



There is evidence of circumstellar (C-S) material around main sequence (MS), giant, and white dwarf (WD) stars that originates from the small-body population of planetary systems. How (if at all) are the planetesimals around MS and WD stars related? One way to address this question is to begin at the end, with the 30% of WDs that have unexpected heavy elements in their photospheres. This “pollution” likely arises from the accretion of planetesimals that were perturbed by outer planet(s) into the WD’s tidal radius. These planetesimals sublimate, turning into circumstellar (C-S) gas, and accrete onto the WD surface. In this talk, I describe a method for determining the abundances of elements producing C-S absorption features in the spectra

of polluted WDs. This method will provide a key to understanding the instantaneous composition of the material flowing from the planetesimals and will help constrain the radial locations of different gas components.

11/17/20	Amy Steele	Univ. Maryland	Constraining the composition of planetary material around white dwarf stars
11/24/20	No PLS – Thanksgiving week		
12/1/20	Seth Jacobson	MSU	Searching in the asteroid belt for evidence of giant impacts
12/8/20	No PLS – AGU		
12/15/20	Artem Burdanov	MIT	SPECULOOS exoplanet search and its prototype on TRAPPIST

For more information, contact John Biersteker (jo22395@mit.edu)