

## Pressure Effects on Trace Element Partitioning During Core Formation

**FRIDAY OCT 4**

Zoom: [bit.ly/FORCEseminar](https://bit.ly/FORCEseminar)

**12 PM MST/AZ**

12 pm Pacific, 3 pm Eastern

Pressure effects on metal-silicate partitioning exist between 1 and 10 GPa for select, but not all, trace elements. Distinguishing the effect of pressure from other variables on activity coefficients and partitioning is important for determining whether relatively low-pressure experimental data (1 GPa) can be extrapolated to the higher pressures inferred for planetary bodies such as Mars and Earth (> 10 GPa).

In this study, we investigated the effect of pressure on the activity coefficients of Cu, Mo, Pd, Pt, As, Sb, and Bi in Fe-Si metallic liquids. Experiments on metal-silicate mixtures were conducted at 10 GPa and 2300°C using a 10/5 assembly in the 880-ton multi-anvil press at NASA Johnson Space Center. We compared our results to previously published experiments conducted at 1–4 GPa. From this, we identified a resolvable pressure effect on the metal-silicate partitioning of Bi and Sb, with both elements becoming more siderophile with increasing pressure.



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Dr. Prissel is an experimental petrologist interested in the chemical evolution of planetary interiors and magmas. She earned a PhD from Washington University in St. Louis, completed a postdoctoral fellowship at Carnegie Earth and Planets Laboratory, and then worked at NASA Johnson Space Center as a Research Scientist. She joined Purdue as an Assistant Professor in August 2024 and is actively seeking graduate students interested in experimental petrology to join her research group in Fall 2025.

## **SEMINAR SCHEDULE** \_\_\_\_\_ *Fridays at 12 pm MST/AZ*

**November 8**  
**Steeve Gréaux** Geodynamics  
Research Center, Ehime  
University

**December 6**  
**Felix Marxer** Institute of Earth  
System Sciences, Leibniz  
University Hannover

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