

Disciplinary group discussion:

Geochemistry

1. How to better constrain heat flux:
 - better constrain K/U through Rb as proxy for K
 - systematic review of anything we can sample lower crustal xenoliths (lithosph mantle), Archean rocks, ...
 - Revisiting data quality ($U \ll K$)
 - Need better ^{40}Ar budget
2. Plumes:
 - Evidence for core-mantle interaction: Hf-W, Pd-Ag, Pt-Os, Nb-Zr, PGE, Fe, Co, Ni, but need better constraints on siderophiles
 - Connecting core signatures with tomography...anomalies from D''?
 - U series: need to figure out what it's telling us about melting dynamics and upwelling
 - Noble gas stuff see next point
3. Understanding partial melting systematics: different compositions (e.g. pxnrite)
 - Relation of isotopes and their majors (also important for slabs) and traces and H₂O
 - > source regions, which will make seismologists happy
 - noble gas partitioning, diffusion
4. Sub Lithospheric Isotope (and) Major Element Research (SLIMER) aka lengthscales of heterogeneities: across and along ridge research to look for lengthscales/variations:
 - mantle xenoliths, melt inclusions, phenocrysts, ophiolites, diamond inclusions
 - Need a comprehensive database: fill in the lines: all analyses on one sample, instead of one datapoint per sample. Need majors published.
 - Other options:
 - a. SMORES: Sampling Mid Ocean Ridges Everywhere Systematically
 - b. TOGA: Trans Oceanic Geochemical Analysis

⚡ Vote for a name for this project ⚡

5. Time evolution models (e.g. He) for initial conditions for convection models