

Advanced Igneous Petrology Lab 1 – pyroxene and olivine

The purpose of this lab is to show you natural assemblages of pyroxenes from a variety of tectonic settings. Below is a list of thin sections and some tasks to complete and things to think about and/or do with each one.

#4 and 82-87 Identify the pyroxenes in these thin sections and summarize the diagnostic features that you used to distinguish between them. Which rock is volcanic, and which is plutonic?

PP-10 and Skaergaard 4388 These thin sections contain inverted pigeonite. Identify it and sketch the relation ship of the exsolved/transformed pyroxenes.

LIQ 73.5 and TMO These samples represent two unusually fresh garnet peridotites. Identify the pyroxenes and summarize the diagnostic features that you used.

B94-4 and 597-89 or 597-90 These samples contain pigeonite. Find it and summarize the diagnostic features that you used.

MM-1a This slide shows a reaction relation between olivine and a pyroxene. What kind of pyroxene is it? Sketch a phase diagram that explains this reaction relation.