

Feldspars, Amphiboles, and Sheet Silicates

This lab will take two lab periods to complete. As in lab 1, follow the directions for each sample and continue to fill out your matrix.

Hand Samples:

503 – Tremolite – Notice the typical amphibole cleavage and light color.

848 – Hornblende – Compare to sample 503. What are the similarities? What are the differences?

67 – Granite – This granite contains microcline, quartz, biotite, and another mafic. What is it?

6035 – Lepidolite – Notice the similar habit to biotite and muscovite but different color.

1756 – A beautiful sample of microcline.

1782 – Muscovite crystals after corundum.

#2-3 – Hornblende crystals- Notice the cleavage and color.

#2-6 – Hornblende porphyry.

#2-4 – Muscovite crystals

B VIII 38 – Anthophyllite crystal.

#2-8 – Potassium Feldspar. Notice the exsolution lamellae and cleavage angles. What are the lamellae composed of?

89-13a – Serpentinite – This rock is an example of a completely serpentized peridotite.

89-13b – Serpentinized peridotite – This sample came from just a few feet away from the previous sample. Notice the difference between the two.

89-17 – Antigorite – From the same rock type as the previous samples.

Unknown Hand Samples:

IL-033 – Identify the porphyritic grains

892 – Identify as many minerals in this sample as possible.

1776 – Identify the black mineral.

#2-1 – Identify the black mineral.

#2-2 – Identify the mineral in the vein on this sample.

1772 – Identify as many minerals in this sample as possible.

#2-7 – Identify this mineral.

Thin Sections:

Il-007 – This section contains minor amounts of biotite and muscovite. Try to differentiate between the two. Some of the biotite has been altered to chlorite.

5766 – This sample contains serpentine – the grey fibrous mineral, and a vein of muscovite.

47 – Identify the minerals in this section.

5765 – Identify the major mineral present in this sample.

IU28 – This section contains a few phenocrysts of hornblende. One shows a basal section with typical amphibole cleavage – find a grain and sketch it. Identify the other phenocrysts present.

NE 82 (2 sections)- These sections contain Riebeckite and Kspar. Notice the strong pleochroism in the riebeckite and the cloudy nature of the kspar.

SC 34 – Plagioclase – Find several grains and determine the An content.

SC 1 – This section contains quartz as well as several other minerals. Identify them.

SC 6 – Identify the phenocrysts.

SC 5 – Identify all the phases.

IL- 016 – Identify all the phases present. One of the phases present is plagioclase – determine the An content by the method of your choice.

Il-023 – This section contains myrmeckite. Find an example and sketch it.

SC 43 – Find two examples of Granophyric texture and sketch them.

IU-10 – Perthitic texture is rampant throughout this section. Sketch an example.

89-13a – Identify the fibrous mineral in this section.

89-13b – Identify the fibrous mineral and high birefringance mineral in this section.

89-17 – Antigorite.