Team Members
Objectives

- Continue mapping of the Homer Lake Sequence.
- Cross reference previous mapping with our map.

*previously mapped by:
  - Grout, F. F. (1933).
  - Davidson, D.M. & Burnell, J.R (1977)

- Education
Previous Mapping – Grout 1933

Figure XXIV. — Geologic map of Township 63 North, Range 3 West.

EXPLANATION
For Township Maps.
Plates 6 to 16, Scale 2 inches to 1 mile, in pocket.
Figures 1 to ______, Scale $\frac{2}{3}$ inch to 1 mile, in text.

- Basalt
- Rhyolite
- Ophiolite
- Diabase
- Porphyritic diabase
- Gabbro
- Granophyre
- Late granodiorite, etc.
- Intermediate rock
- Anorthosite and anorthositic gabbro
- Titaniferous magnetite
- Hornfels
- Puckwung conglomerate and interflow sediments
- Rove, argillite facies
- Rove, graywacke facies
- Gunflint formation
- Pokegama quartzite
- Knife Lake group

Figure 37. — Explanation for township maps.
Davidson 1977
Regional Geology

- During the late Precambrian, rifting occurred to create the mid-continent rift.
Basaltic magma either erupted on the surface or cooled below the surface.
The Homer Lake sequence is a smaller intrusion that makes up part of the Duluth complex.
Logistics
Portage - (with 2/3 of our group)
Set up camp
Field Work
More field work
Rocks of the Homer Lake area

1. Foliated oxide gabbro
2. Granophyric oxide gabbro
3. Apatitic foliated oxide gabbro
4. Heterogeneous gabbro
5. Olivine bearing mafic rocks
   - Olivine gabbro
   - Augite troctolite
6. Ferromonzodiorite
7. Ferromonzonite
8. Granophyre
   - Micrographic leucogranite
9. Hornfels basalt
10. Ophitic diabase
11. Anorthositic rocks
12. Interflow sediments
Rock Units

- Axe Lake Sequence
- Basalt and Interflow Sediment
- Homer Lake Sequence
- Diabase
- Leucogranite
Augite troctolite

- Light grey.
- Medium to coarse grained.
- Nonfoliated.
- Subophitic to ophitic.
- Varies from anorthositic augite troctolite to troctolitic anorthosite.
- Grainsize and composition can vary on outcrop scale.
- Anorthosite inclusions ranging from several centimeters to several meters are common.
Olivine oxide gabbro

- Medium grey to tan.
- Medium grained.
- Non-foliated to weakly foliated.
Ferromonzodiorite

- Medium purplish grey to tan.
- Medium to coarse grained.
- Poorly foliated.
- Basalt inclusions are common.
- Locally pegmatitic with prismatic pyroxene.
- ~30% granophyre
Hornfels Basalt

• Light grey
• Fine to medium-fine grained
• Micro-veining is common
• Locally contains porphyroblastic anorthite.
Interflow sediments

• Light grey.
• Fine to medium-fine grained.
• Bedding is irregular with some crossbedding.
• Bedding is dominated by alternating oxide rich and anorthosite rich layers.
Heterogeneous oxide gabbro

- Medium grey to tan.
- Medium to coarse grained.
- Non-foliated to poorly foliated.
- Granophyric textures are common.
- Contains abundant anorthosite inclusions.
- Certain areas also contain interflow sediment and hornfels basalt inclusions.
- Textural and compositional variations occur on the meter scale.
Foliated oxide gabbro

- Light to medium grey.
- Medium to medium-coarse grained.
- Well foliated
- Localized modal layering.
- Commonly contains granophyric dikes, up to 2 m across.
- Ranges in composition from oxide gabbro to granophyric oxide leucogabbro.
Granophyric oxide gabbro

- Medium grey.
- Coarse grained.
- Poorly foliated.
- Locally composition ranges to oxide leucogabbro.
Apatitic foliated oxide gabbro

- Medium grey to tan.
- Medium grained.
- Moderately well foliated.
Ferromonzonite

- Pink to orange.
- Medium-fine to medium grained.
- Non-foliated.
- Locally contains prismatic pyroxene, up to 2 cm long.
- Locally apatitic.
- ~50% granophyre
Micrographic leucogranite

- Salmon pink to red.
- Medium to coarse grained.
- Non-foliated.
- Local prismatic pyroxene.
- Upper portions of the unit contain miarolitic cavities.
Ophitic diabase
• Black to grey.
• Fine to medium-fine grained.
• Occurs as dike trending roughly 235 in SE portion of the map area.
• Width ranges from meters to tens of meters.
Undifferentiated anorthositic rocks

- Light to medium grey.
- Medium to coarse grained.
- Composition ranges between troctolitic anorthosite, gabbroic anorthosite and oxide anorthosite.