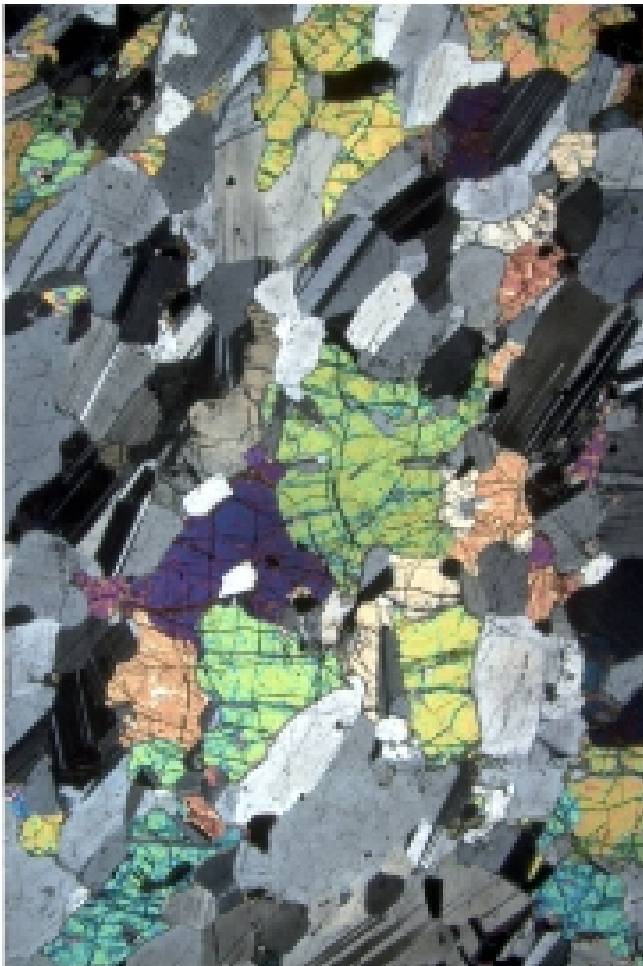


Optical Microscopy

- Study of how light passes through thin sections – rock cut and polished to about 0.3 mm thickness
- Use properties of light absorption and propagation through a mineral → affected by atomic arrangement and composition
- Learn the properties of light associated with techniques governing the use of a petrographic microscope

Why use the microscope??



- **Identify minerals (*no guessing!*)**
- **Determine rock type**
- **Determine crystallization sequence**
- **Document deformation history**
- **Observe frozen-in reactions**
- **Constrain P-T history**
- **Note weathering/alteration**
- **Fun, powerful, and cheap!**

Minerals and propagation of light

- Opaque minerals – minerals in which light does not go through → always black even in thin sections. Typically these have molecules with higher atomic density (which includes many ore minerals). How light reflects off of these minerals is used to identify them with a reflected light microscope.
- Nonopaque minerals – minerals in which light does go through → use these properties to identify them with the petrographic microscope