

Mineralogy Lab - GL 211
BIAXIAL MINERALS

1. Examine the cleavage flakes of muscovite (M97, sheets) and biotite (M98, 44-5170) . The interference figures are centered acute bisectrix figures. Determine the sign and $2V$ for each. Draw a sketch of the interference figure at maximum separation of isogyres without and with the gypsum plate inserted.
2. Examine the six minerals in slide M-100. Draw sketches of the interference figures of aragonite, topaz and andalusite. Estimate $2V$.
3. Slide M86 is an optic axis figure for augite. The $2V$ is about 60° . What is the optic sign? Draw a sketch of the interference figure and explain how you determined the sign.

The following thin sections, except M24, are rocks with several minerals in them. Thus, it is first necessary for you to get help to make sure that you identify the mineral in question.

4. Slide M24 and 75BUR-2 have grains of olivine. Find a grain that gives an optic axis figure. Determine the optic sign and $2V$. Use a grain different to find the birefringence of the olivine.
5. Slide HAW 1801-1 contains a green Cr-rich clinopyroxene. Find a grain that gives an optic axis figure. Determine the sign and $2V$ of the grain.
6. Slide OP-112 and P-1071 contain hornblende. Use either thin section to find a grain that yields an optic axis figure. Determine $2V$ and optic sign. What is the pleochroic scheme for the hornblende (use a different grain)?