

Optical Mineralogy Lab #7A & #7B – Biaxial Minerals

In this lab, you will view various optical characteristics of orthorhombic, monoclinic and triclinic crystals. All minerals that are within these three systems are biaxial, i.e., they have two optic axes. Recall that to get an interference figure: (a) focus at the highest magnification (usually easiest in plan light), (b) add the condenser lens, (c) cross the Nicols and (d) insert the Bertrand lens.

Directions:

PART I

1. For the following minerals: diopside Bxa, biotite Bxa, andalusite Bxa, and muscovite Bxa, (a) describe the interference colors and (b) determine the optic sign (check the book to see if you get the right answer/
2. Interference figure slide for the slide: Wards 44-4205: (a) which minerals have uniaxial optic figures? (b) which minerals have biaxial optic figures? Determine the optic signs for all minerals in this slide.
3. Examine the minerals in the 2V slide from Wards. Check with 7.29 and 7.32 as appropriate to determine whether you agree with the 2v angles noted on the slide.

PART II (Due Following Week)

4. Examine the minerals tremolite, prehnite, augite, olivine and lepidolite. Look for properly oriented grains and determine the optic sign for each of the minerals.