Quartz – Uniaxial (+), Low (+) Relief, Low Birefringence
Biotite – Light to Dark Brown Pleochroism, Biaxial (-), Small 2V
Muscovite – Biaxial (-), 2V ~ 45, High Birefringence = High int. colors
Serpentine – Fine Grained, Scaly Pattern, Abnormal Birefringence
Calcite – Extreme Birefringence, Good Cleavage, Twins Bisect Acute Angle
Plagioclase – If only Albite twinning
Sanidine – Carlsbad Albite twinning, volcanic, monoclinic
Anorthoclase – 2 sharp cleavages, Very fine tartan twinning, volcanic
Orthoclase – (-) relief, common in granite, may have exsolution lamellae
Microcline – Plutonic, triclinic, tartan twinning, exsolution lamellae
Nepheline – Uniaxial (-)
Garnet – Isotropic, Very high (+) relief, 6-8 sided euhedral shape
Olivine – High (+) relief, high birefringence, no cleavage, large 2V

Accessory Minerals
Epidote – High (+) relief, stained glass appearance
Titanite – High (+) relief, diamond shape, brownish color
Kyonite – Length Slow, Tree bark texture
Sillimanite – Length Slow, Cleavage along diagonal, needle texture
Andalusite – Length fast, cross-pattern, 2 cleavages parallel to crystal faces
Piemontite – Pink to red pleochroism
Cordierite – Biaxial, anhedral blobs, associated with biotite
Staurolite – Honey yellow to brown fleck, spongy appearance, 4-6 sided diamond
Zoisite – High (+) relief, biaxial (+)
Chlorite – Light to dark green, darkest parallel to Low P, Purple-Brown Int. Colors
Chloritoid – Rectangular crystals, Slaty Blue-Green pleochroism

Amphiboles (120)

Orthoamphibole:
Anthophyllite – Gedrite – Vertical Extinction

Clinoamphibole:
Hornblende – Diamond Shape, Orange to Brown pleochroism
Actinolite – Pale green, weak pleochroism
Ferroactinolite – Stronger pleochroism, larger 2V then hornblende
Tremolite – Colorless, exists with chlorite
Glaucophane – Blue to lavender pleochroism
Cummingtonite–Grunerite – weak yellow to green pleochroism

Pyroxene (90)

Ortho:
Enstatite – Vertical Extinction

Clinos:
Augite – Zoning, exsolution, high relief
Augerine – Emerald green pleochroism
Pigeonite – Herringbone pattern, volcanic, small 2V
Piemontite - Microcline – Plutonic, triclinic