Plate 33 Crystallization: Geocrystallization Crossed polarizer photomicrographs of (A) a glassy basalt, (B) a gabbro, (C) an andesite, (D) a diorite, (E) a rhyolite and (F) a granite. Each of these photographs was taken at the same magnification (horizontal field is 10mm across). The bulk composition of the magma forming the basalt and gabbro are broadly similar, as is the bulk composition for the andesite and diorite and the rhyolite and granite. The clearly observable differences in texture result from differences in crystal growth and nucleation rates. (A) Basalt showing large crystals (phenocrysts) of plagioclase feldspar (grey), Ca-rich pyroxene (purple, at centre) and olivine (yellow, top left) in a finer grained groundmass of these minerals. (B) Gabbro showing crystals of Ca-rich pyroxene (red-orange) enclosing plagioclase (grey-white with multiple twinning) and olivine (blue, green and red grains right of centre). (C) Andesite showing phenocrysts of plagioclase (grey-white with multiple twinning) and pyroxene (yellow-orange-red) set in a fine-grained glassy groundmass. (D) Diorite showing a rock comprised of plagioclase feldspar (grey-white multiply twinned crystals), pyroxene, amphibole (green) and interstitial quartz (yellow-grey). Note how the amphibole crystals form a jacket or coating on the pyroxene (centre). (E) Rhyolite showing perlite cracking in glassy groundmass and phenocrysts of quartz and plagioclase (twinned). Note the corroded and resorbed grain boundaries of the phenocrysts. (F) Granite showing interlocking crystals of plagioclase (twinned), alkali feldspar (turbid, dusty appearance), quartz (clear) and biotite (speckly orange).