

H1H 69-93 608 ✓ 9/2 fs porphyry

The matrix feldspar takes a different etch (white) than the feldspar phenocrysts (creamy). Quartz etches gray. Apparently there is no Kfeldspar.

Under the binocular microscope, the matrix is seen to be quartz-rich. Accessory apatite? (amber-colored) and magnetite were noted.

H1H H010 279

This brecciated sample has quartz and plagioclase but no Kfeldspar according to the etching and lack of staining. Veins are specular hematite and chalcocyanite. Under the binocular microscope apatite(?) prismatic chlorite and tourmaline(?) were noted.

68-27

217 ✓
210

Lots of Kspar which apparently
replaces plagioclase, if the ~~pl~~ unaltered
plagioclase (?) around the large
biotite book is not misleading.
ie the grains could be Kfeldspar
which did not react normally be-
cause they are adjacent to the
biotite). The thin section should
allow this interpretation to be
checked easily. Further evidence
of replacement is offered by plagioclase
grains with blebby ~~areas~~ stained areas
of Kfeldspar.

Biotite is altered to chlorite
Quartz veins with Kfeldspar,
plagioclase and quartz grains

H1H 58-55 476'

although the feldspar is pink, etch and staining suggests it is plagioclase with variable alteration (note deeper etch pits - they took a slight stain + may be sericite).

Under the binocular microscope, chlorite, and epidote. The pink feldspar ^{color} staining is very likely due to disseminated hematite.

H1H 69-102 300 ✓

Lots of Kfeldspar (yellow) but Kspar and plagioclase are both pink.

There is a suggestion (stained cores, unstained rims) that grains of plagioclase have been partially replaced by Kspar.

No quartz was recognized. Is this a dike?
Plagioclase pinkness may be due to "hematitization".

REPORT ON THIN SECTIONS

✓ HIH-69-102-300 Etched and stained for Kfeldspar

<u>Minerals</u>	<u>Comments</u>
Plagioclase (An ₀₇)	brown in plane light as a result of sericite alteration, cores of grains tend to be more altered
Kfeldspar	interstitial, strongly sericitized in cores of plagioclase crystals where it replaces plagioclase
Quartz (not abundant)	clear, interstitial patches, with prisms of tremolite(?), apatite and opaque minerals (chalcopyrite(?), magnetite, hematite)
Chlorite/sericite	interstitial and after feldspar
Carbonate	in patches and after feldspar
Leucoxene	coating sphene and ilmenite(?)

Dike(?)

✓ HIH-68-27-217 Etched and stained for Kfeldspar

Quartz	fairly abundant, anhedral stained crystal-groups, chlorite is common in the quartz
Plagioclase	sodic type, altered to sericite, chlorite, epidote and carbonate
Kfeldspar	not prominent, interstitial, altered
Chlorite	after feldspar and as fairly large patches
Tourmaline	schlorlète-type, dark brown: east-west, brown: north-south. Large radiating groups of prisms with interprism carbonate and as ill-defined veins with epidote, chlorite, Kfeldspar
Epidote, carbonate opaque	see tourmaline mainly magnetite, often with chlorite

Sphene?

HIH-68-55-476'

<u>Minerals</u>	<u>Comments</u>
Quartz	open interstitial texture, abundant, clear; interstitial to feldspar but feldspar-quartz contacts are somewhat rounded
Plagioclase	brown in plane light as a result of sericite alteration, often subhedral crystal
Apatite	accessory
Epidote +) Chlorite +) Carbonate +) Opaque)	occur as interstitial patches replacing plagioclase, and quartz. Much fine opaque mineral occurs in the chlorite

HIH-69-93-608

Quartz	occurs as phenocrysts and small subhedral crystals. Crystal-Hexagonal cross sections of crystals suggest it crystallized as β -quartz which has inverted to K-quartz.
Plagioclase (An ₀₉)	occurs as phenocrysts which are typically 1/8" or less in size, partially replaced by sericite (some of which forms recognizable crystals) and carbonate
Leucoxene	coating sphene
Groundmass	altered quartzo-feldspathic material

HIH-HU10-279

Quartz	prominent open to closed interstitial texture in some areas, as separate anhedral, rounded areas elsewhere
Plagioclase (albite?)	sericitized, subhedral crystals to anhedral groups of sutured crystal-fragments. Note that not all the plagioclase is twinned and therefore it is difficult to be sure that Kspar is absent.
Sericite	in veinlets which are late stage
Carbonate	secondary
Tourmaline	brown and emerald green to brown varieties and apparently there is also a colourless variety
Chlorite	sheaf-like crystal-groups

HIH-HU10-279 (cont.)

<u>Minerals</u>	<u>Comments</u>
Chalcopyrite	brassy, yellow in reflected light, intergrown with elongated laths of black ilmenite(?) (negligable magnetic response) at bottom of slide
Magnetite	partially altered to hematite
Ilmenite	lath-like crystals
Iron oxide	cream to reddish yellow-brown in reflected light, prominent in cracks

GENERAL COMMENT on HU10-279

(1) It is inferred that the rock originally contained coarse grained areas in which quartz formed an open interstitial texture with subhedral plagioclase and finer grained areas where quartz formed distinct grains. Magnetite would presumably be an accessory mineral.

(2) The host rock was subjected to fracturing with attendant tourmaline-sericite-chlorite alteration and veining. Magnetite, ilmenite and chalcopyrite were introduced into open areas and, to a limited extent, replaced minerals adjacent to the openings.