

Supplementary material 6: examples of chemical cartography of Kipawa lithologies

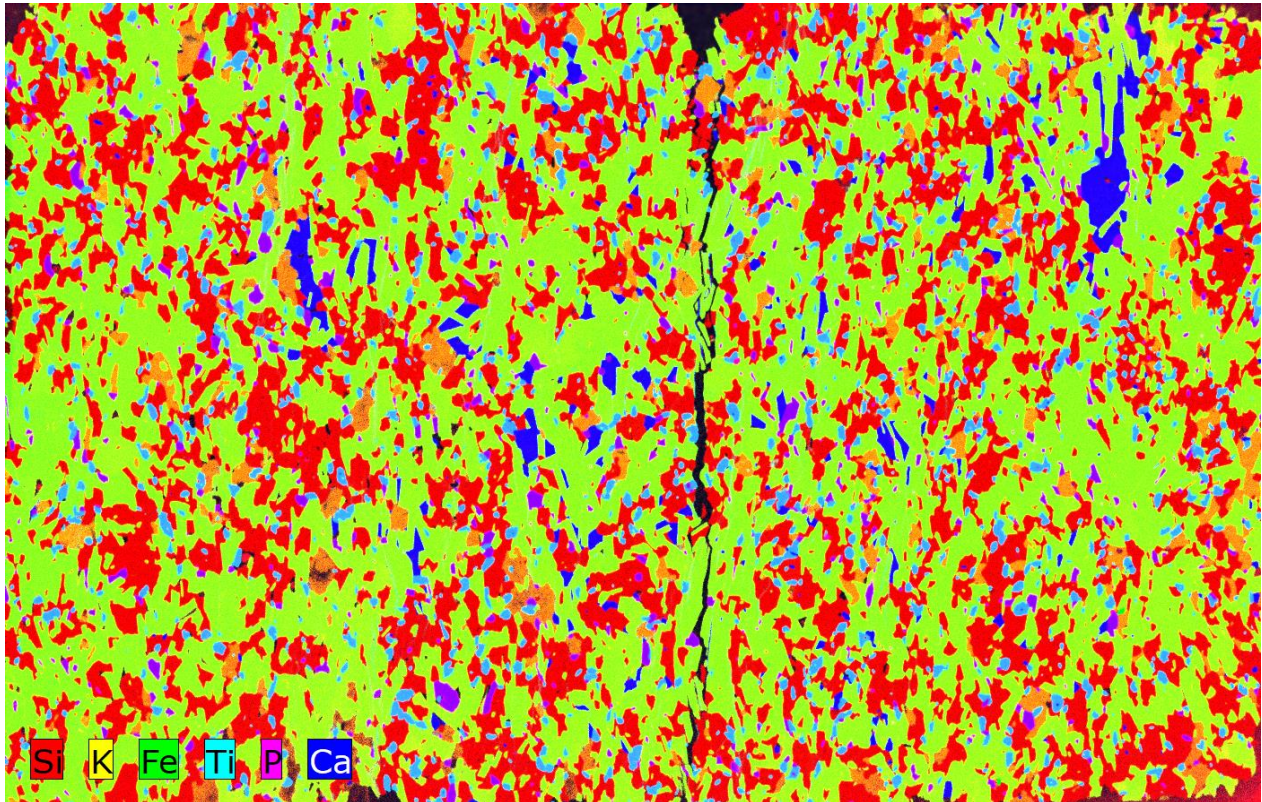
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Nota bene: 1) size : 2.6 cm x 4.6 cm

2) mineral proportions were obtained from chemical cartographies

1. Mafic syenite (sample 11 KM 98 12. 25 to 12.35 m)



	Albite		K-feldspar		Hornblende
	Fluorite		Titanite		Apatite

Unit: Zone 2 syenite unit

Mineralogy: anhedral: hornblende (55 %), albite (25 %), K-feldspar (5 %), fluorite (5%), titanite (5%), apatite (5%).

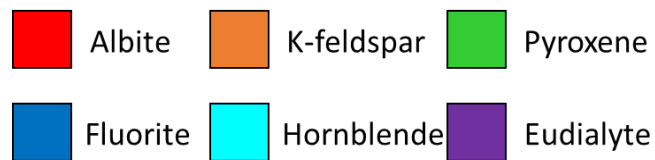
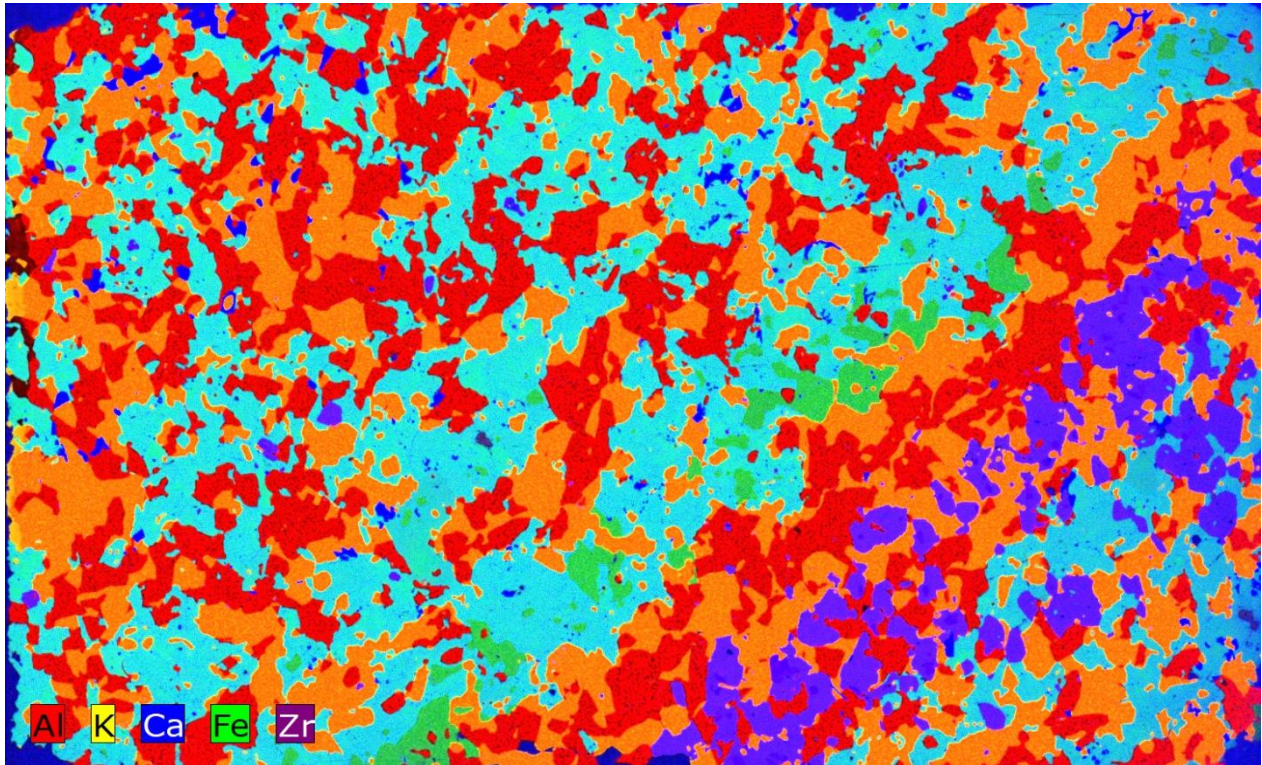
Texture: allotriomorphic

Granulometry: finely to medium grained

Color index: mesocrate

Structure: massive to foliated

2. Eudialyte bearing mesosyenite (sample 11 KM 98 23.5 to 23.6 m)



Unit: Zone 2 syenite unit

Mineralogy: subhedral: albite (22 %), K-feldspar (30 %), eudialyte (10 %); anhedral: hornblende (30 %), pyroxene (5 %), fluorite (3%),

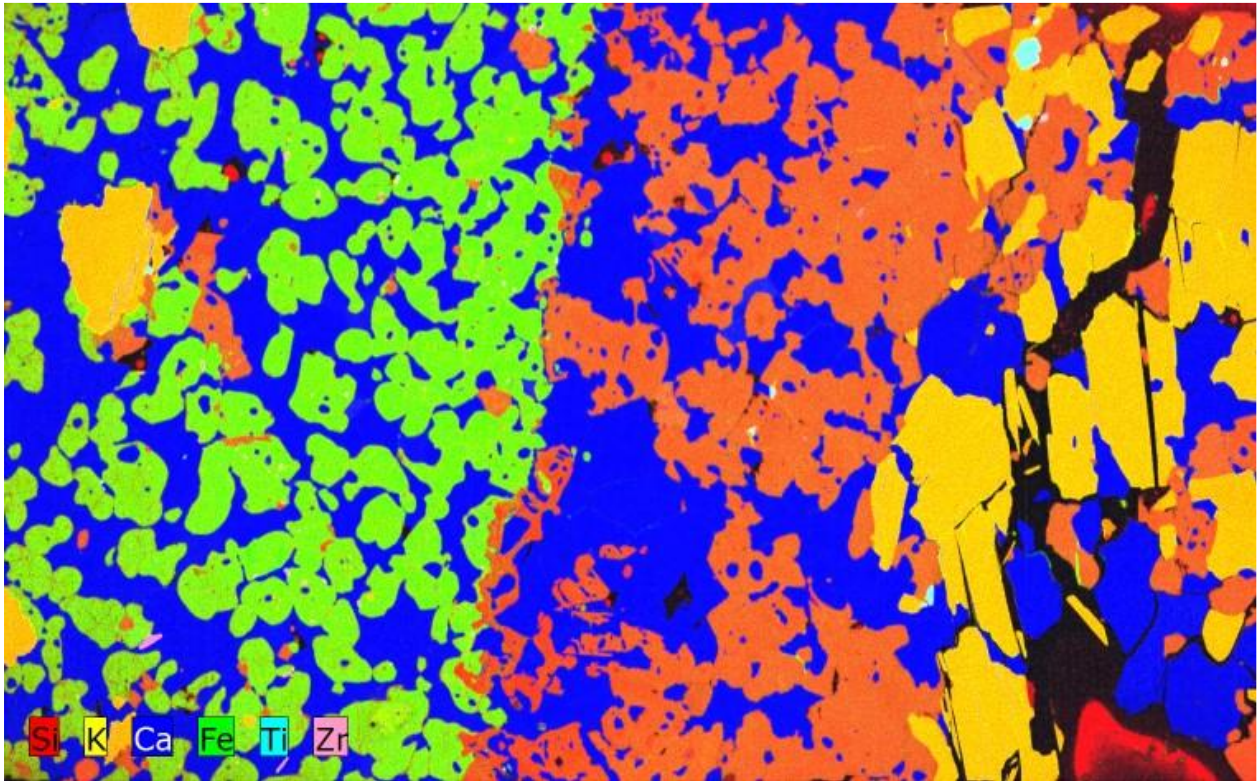
Texture: hypidiomorphic








Granulometry: medium to coarse-grained

Color index: mesocrate

Structure: massive to foliated, cumulat

3. Skarn-marble (sample peninsula britholite, PB01)



 Quartz	 Richterite	 Chondrodite
 Calcite	 Zirconolite	 Phlogopite
 Baddeleyite		

Unit: Zone 3 calc-silicate and syenite unit

Mineralogy: euhedral : chondrodite (20 %), phlogopite (10 %), baddeleyite (<1 %), subhedral: zirconolite (<1%) ; anhedral: quartz (<1%), richterite (30 %), calcite (40 %)

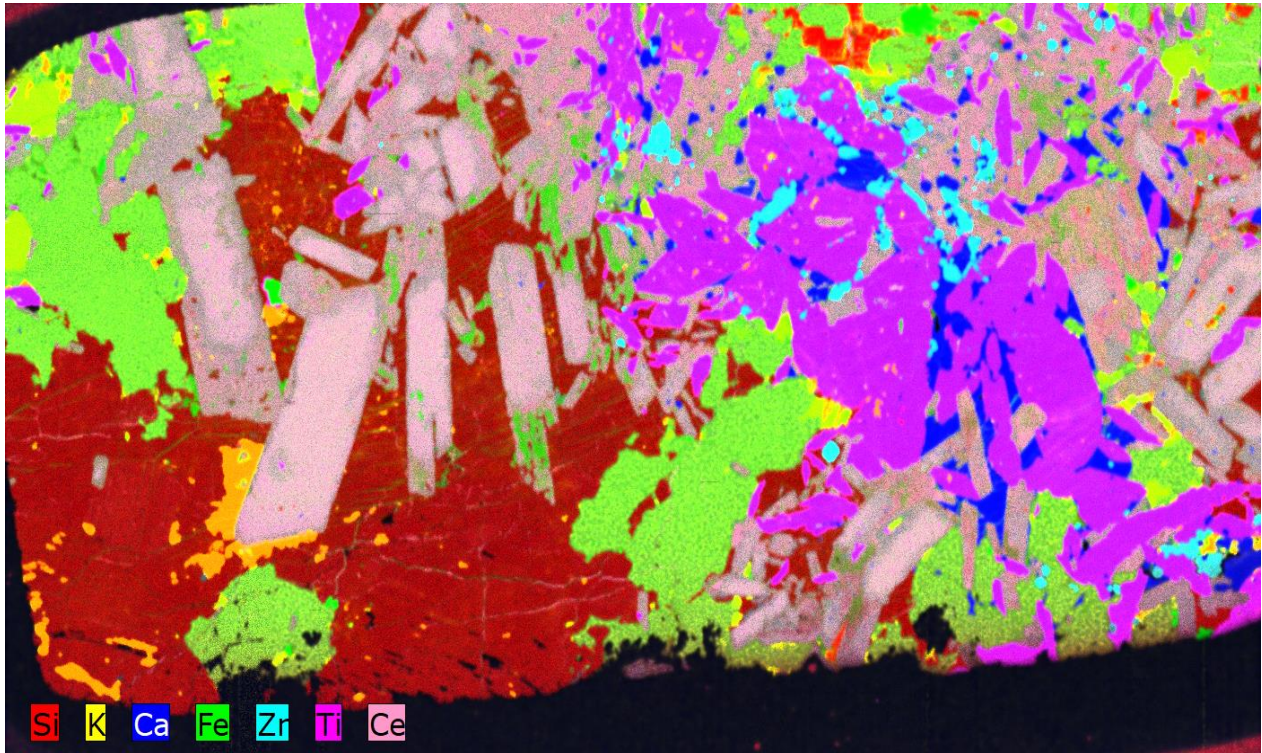
Texture: allotriomorphic

Granulometry: medium to coarse-grained

Color index: leucocrate

Structure: massive, cumulat

4. Allanite bearing syenite (sample Tower Hill, JR14)



Quartz	K-feldspar	Albite
Fluorite	Zircon	Amphibole
Allanite	Chivruaiite or maoniupingite	

Unit: surface sample (zone 1)

Mineralogy: euhedral : allanite (30 %), ; subhedral: quartz (2 %), chi-maon. (20 %), zircon (3 %); anhedral: albite (20 %), K-feldspar (2 %), fluorite (5 %), amphibole (10 %)

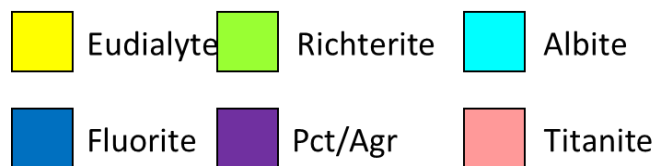
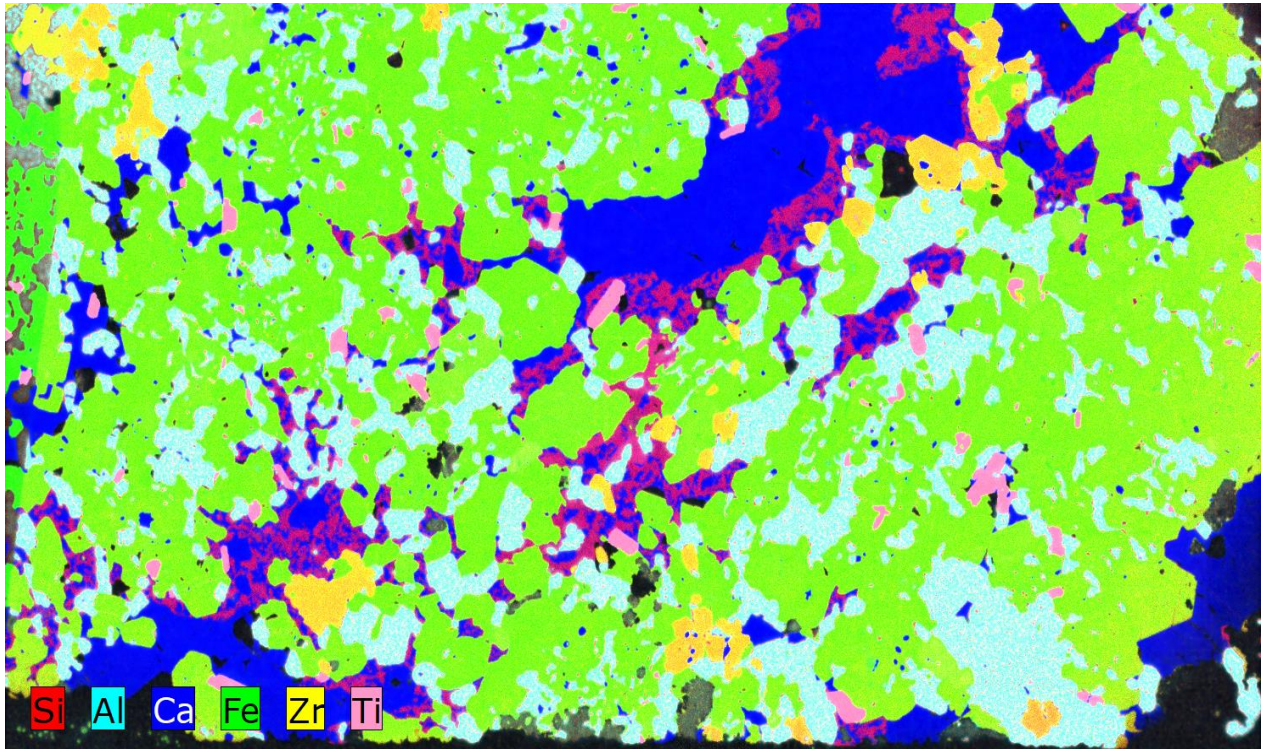
Texture: allotriomorphic

Granulometry: coarse-grained

Color index: mesocrate

Structure: massive

5. Amphibole-syenite (sample 11 KM 98 37.13 to 37.22 m)



Unit: syenite unit (zone 2)

Mineralogy: euhedral: titanite (2 %) ; subhedral: richterite (70 %), eudialyte (3 %) ; anhedral: fluorite (15 %), pectolite-agrellite (3 %), albite (7 %)

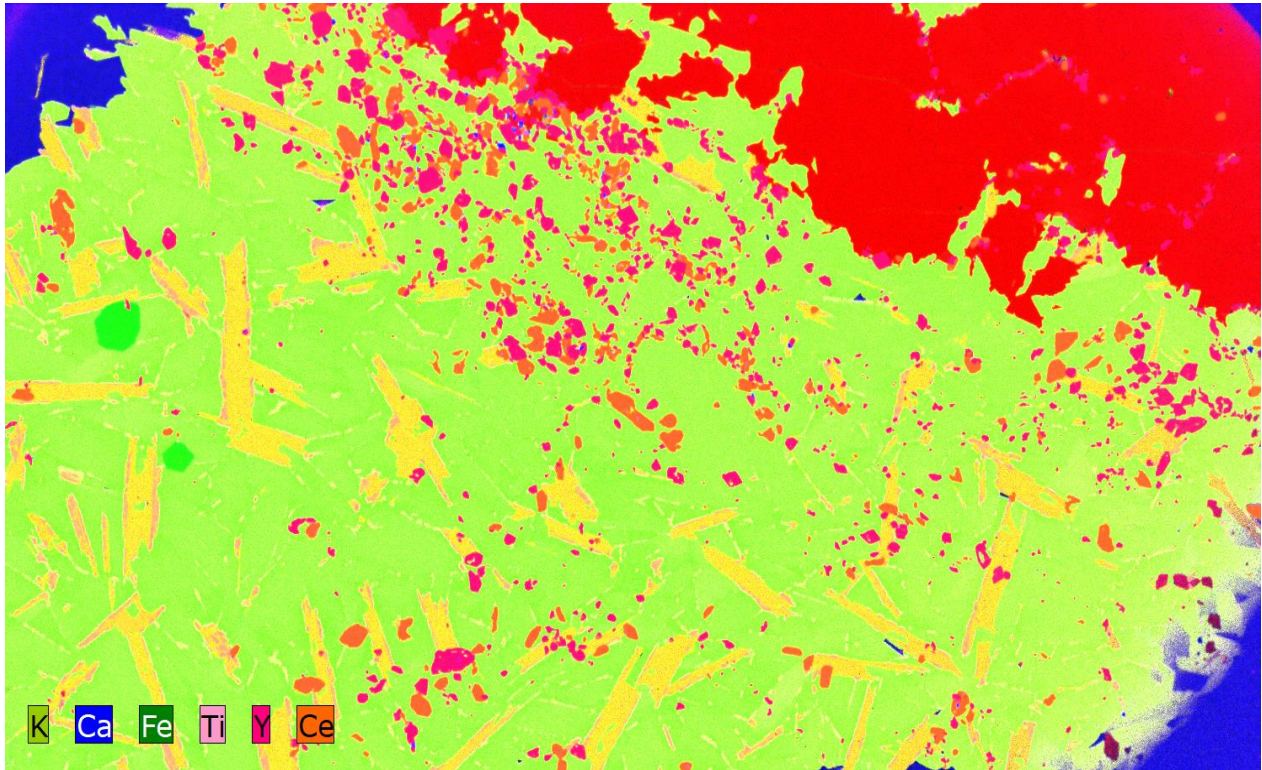
Texture: hypidiomorphic









Granulometry: medium-coarse-grained

Color index: melanocrate

Structure: massive to very strong foliated

6. Micas-quartz fenite (sample T8S)



	Quartz		Monazite		Muscovite
	Apatite		Xenotime-Y		Ti-rich Phlogopite
	Hematite		Phlogopite-biotite		

Unit: Calco-silicate complex (zone 3)

Mineralogy: euhedral : muscovite (5 %), monazite (2 %), xenotime (3 %), hematite (<1 %), Ti-rich phlogopite (3 %); subhedral: phlogopite-biotite (77 %), quartz (10 %) ; anhedral: apatite (<1 %)

Texture: hypidiomorphic

Granulometry: fine to medium coarse-grained

Color index: melanocrate

Structure: massive