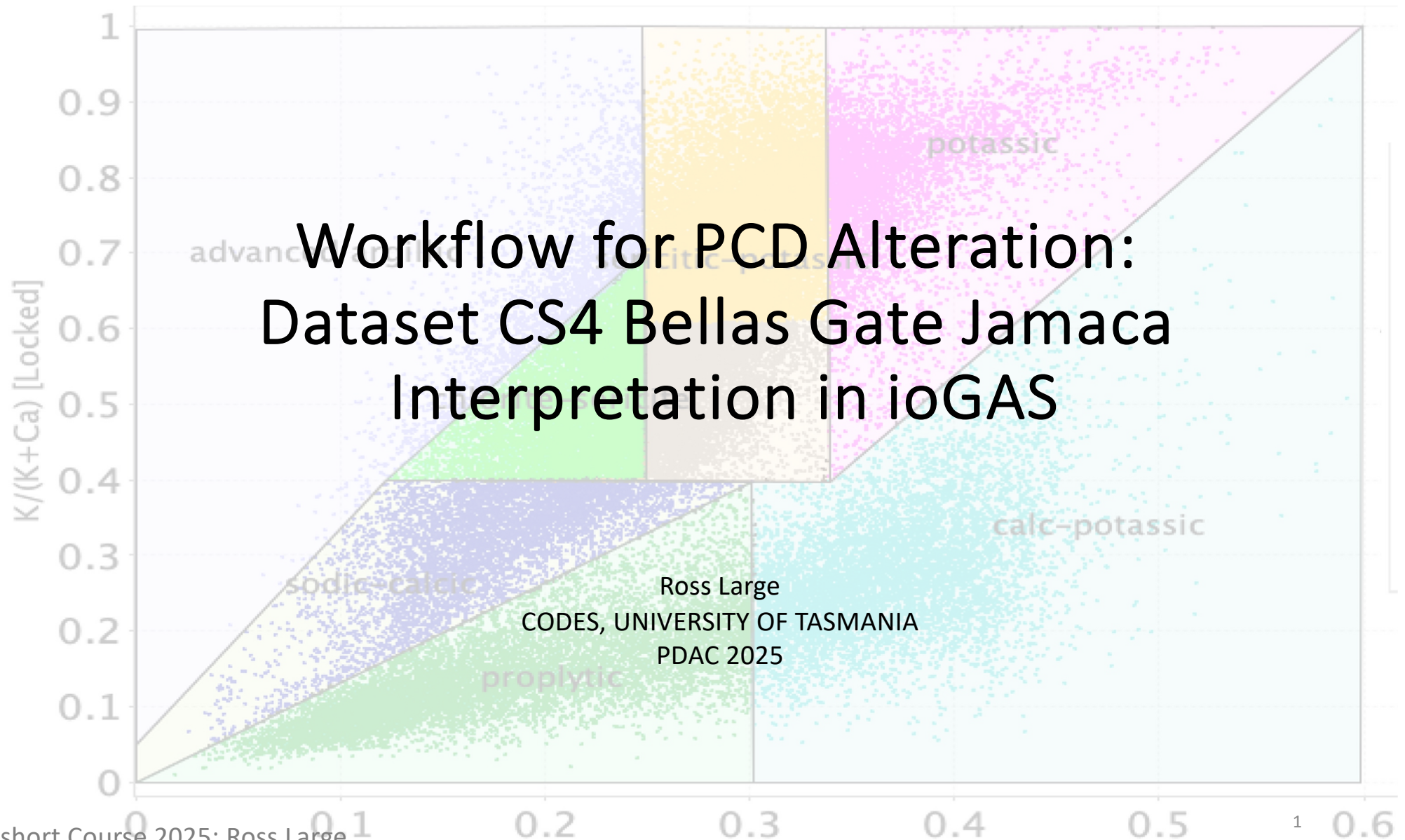
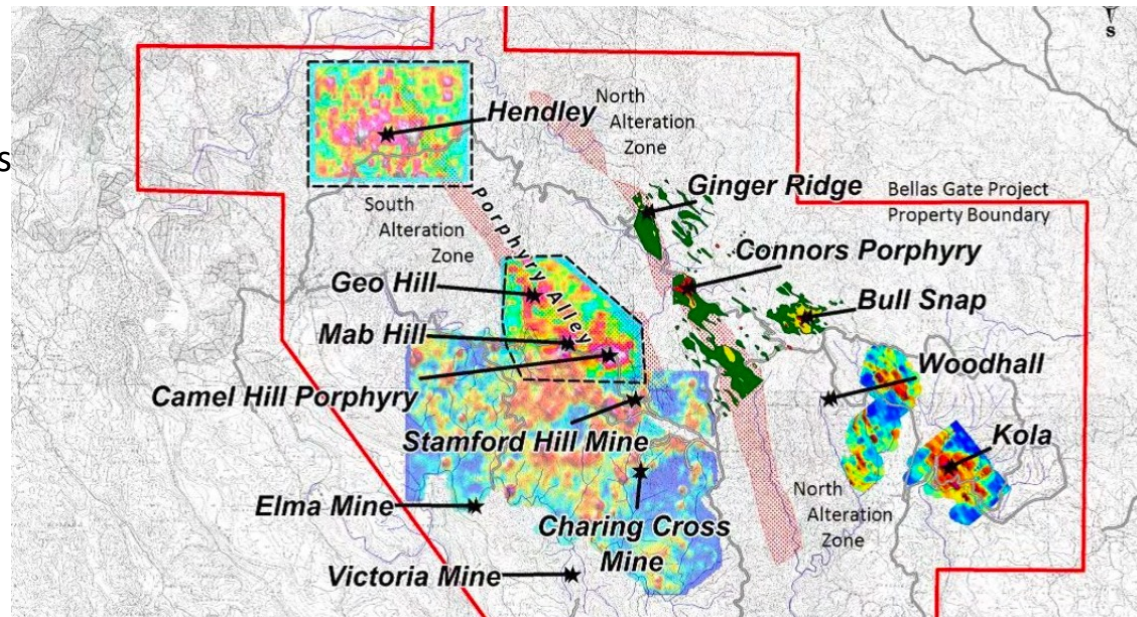


Workflow for PCD Alteration: Dataset CS4 Bellas Gate Jamaca Interpretation in ioGAS





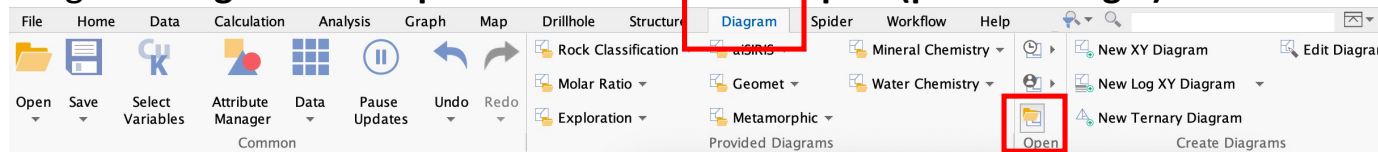
85 drill holes
40,850 sample analyses



Steps to Follow

- Upload the database BG1 into iogas
- **Step1**; determine least altered porphyry compositions

➤ go to **Diagram** then **open** then **alteration box plot (produces Fig 1)**



➤ Click **point density** to colour contour

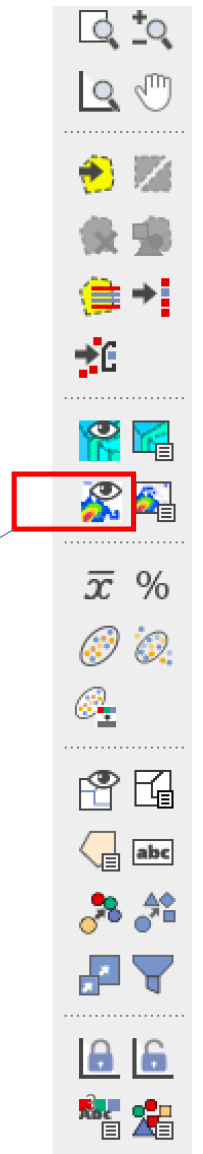
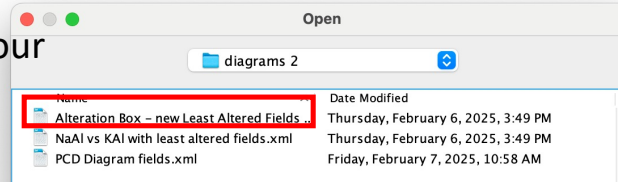
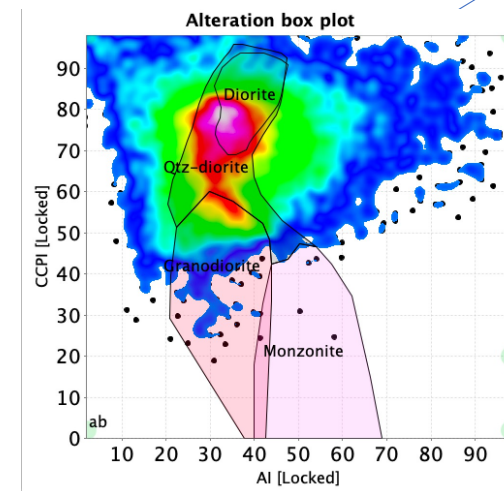
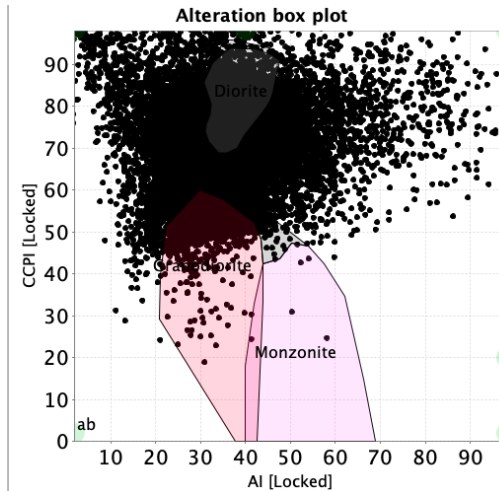
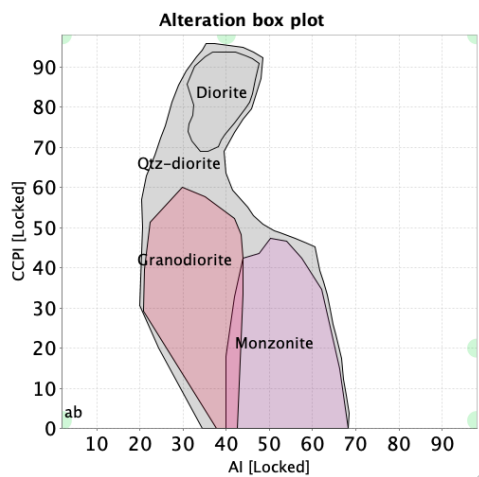
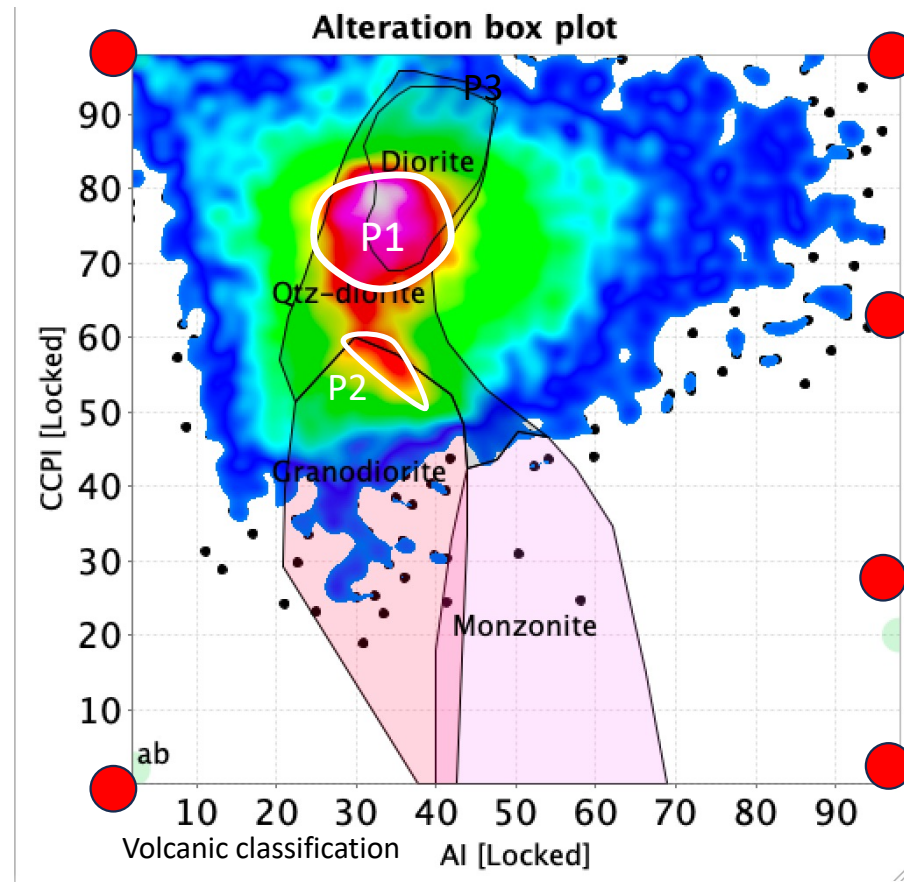
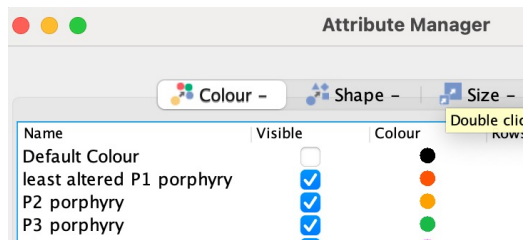


Fig 1

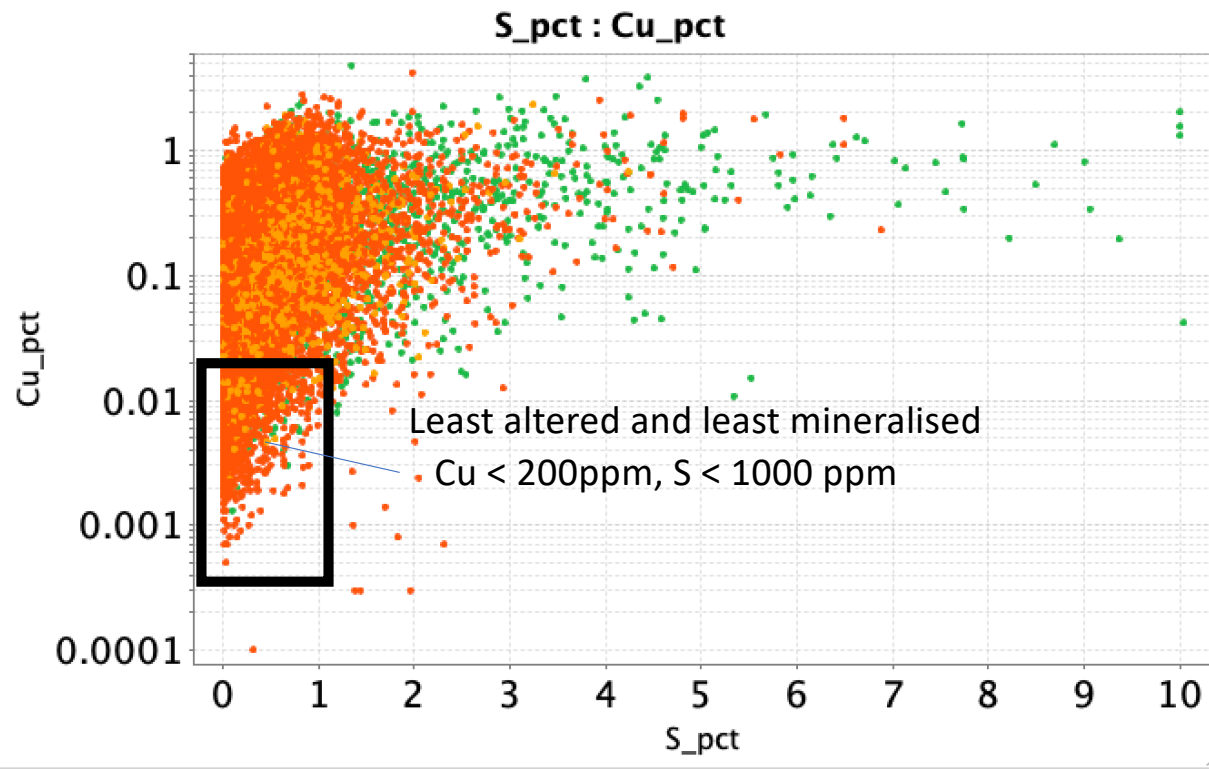


- Add mineral NODES to alteration box plot diagram in power point
- Go to attribute manager and select areas for P1 and P2 with a color (Fig 3)



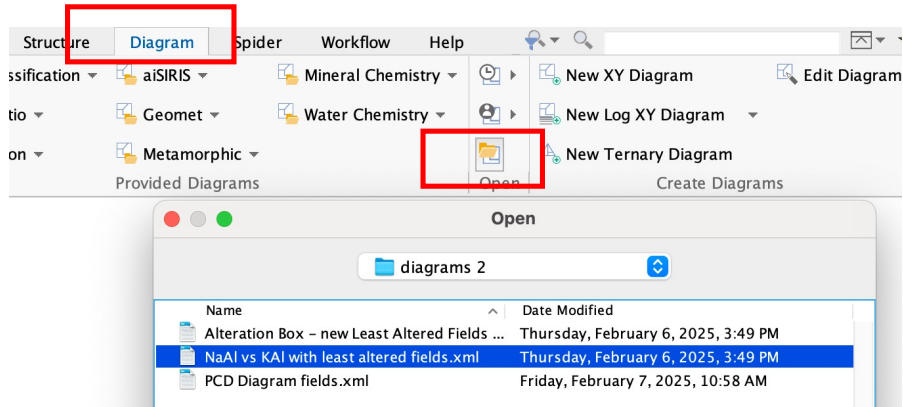
What are the compositions of P1 and P2?

- Eliminate mineralized samples from least altered group by plotting Cu vs S and selecting area with Cu < 200 ppm and S < 1000 ppm

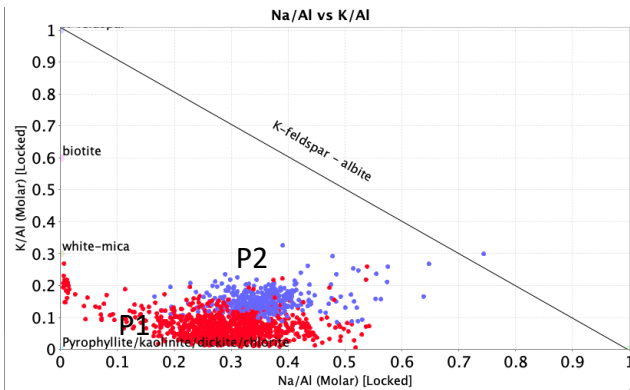


Step 2: Plot Na/K molar vs K/Al molar (Halley Plot)

- Go to Diagram
- Go to **open** then **Na/Al vs K/Al**
- **Add mineral nodes in ppt**



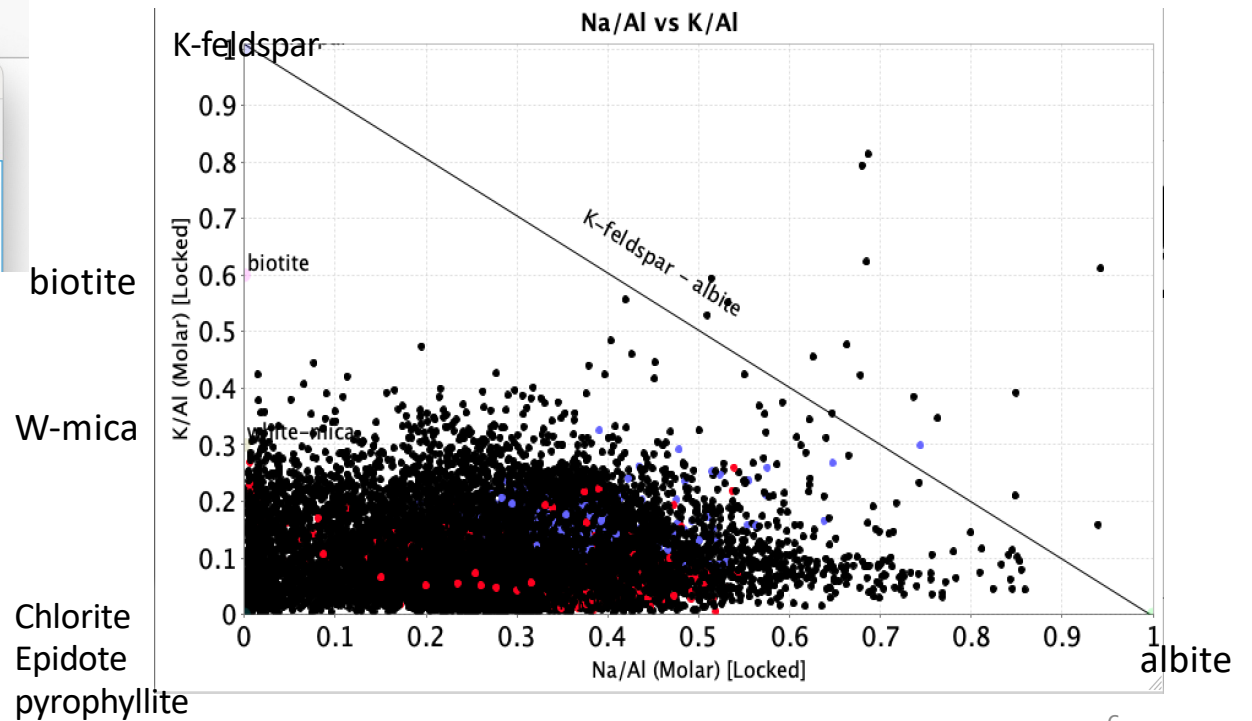
Least altered porphyries




PDAC short Course 2025: Ross Large

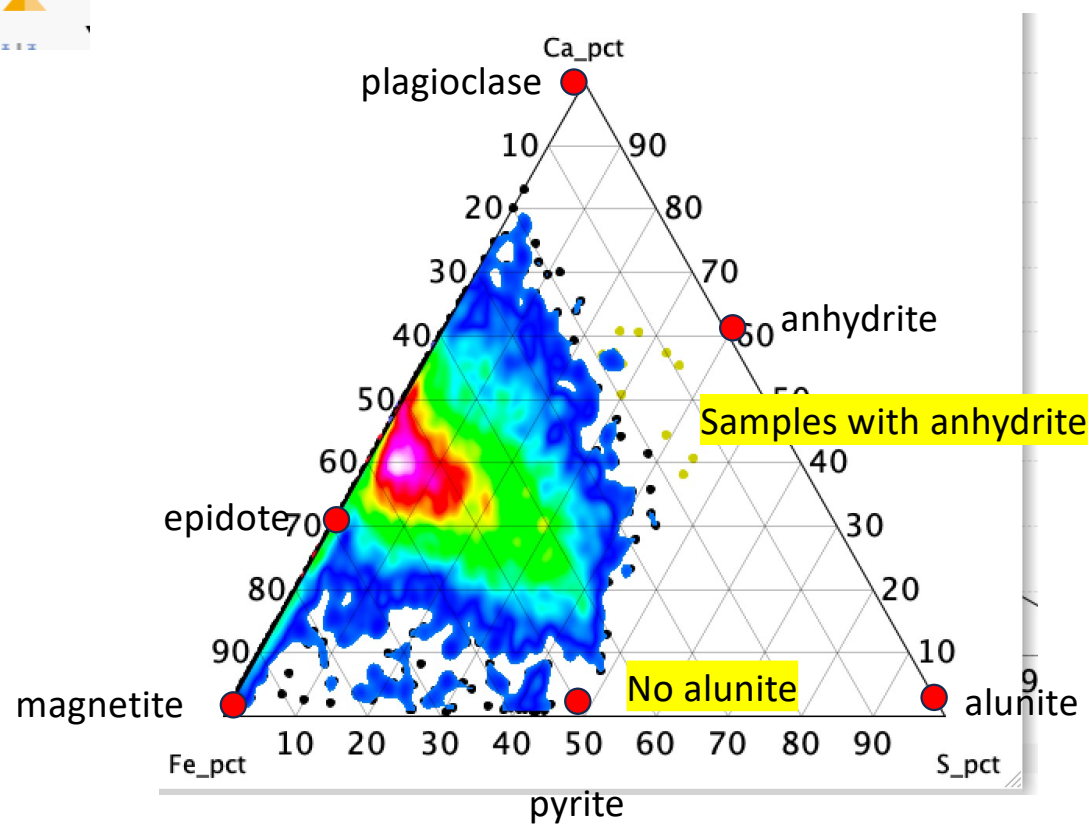
All case study data

Insert the mineral NODES



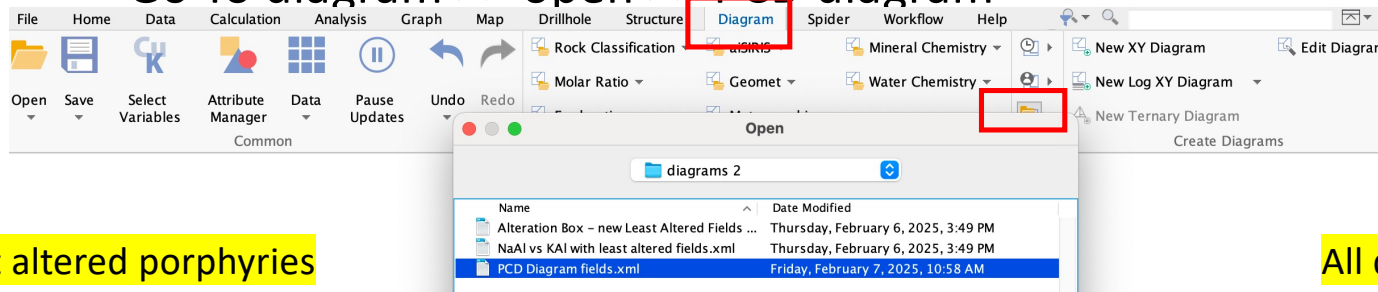
Step 3 : check for alunite and anhydrite

- Plot a Ca-Fe-S triangular diagram
 - Put Ca, Fe and S into select variables
 - Click 

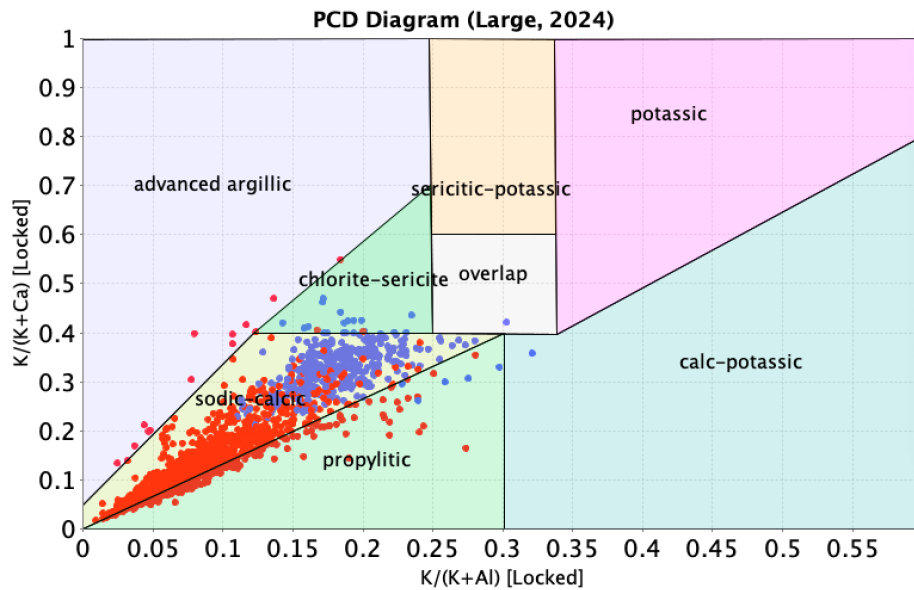


Step 4 : create the PCD alteration Diagram

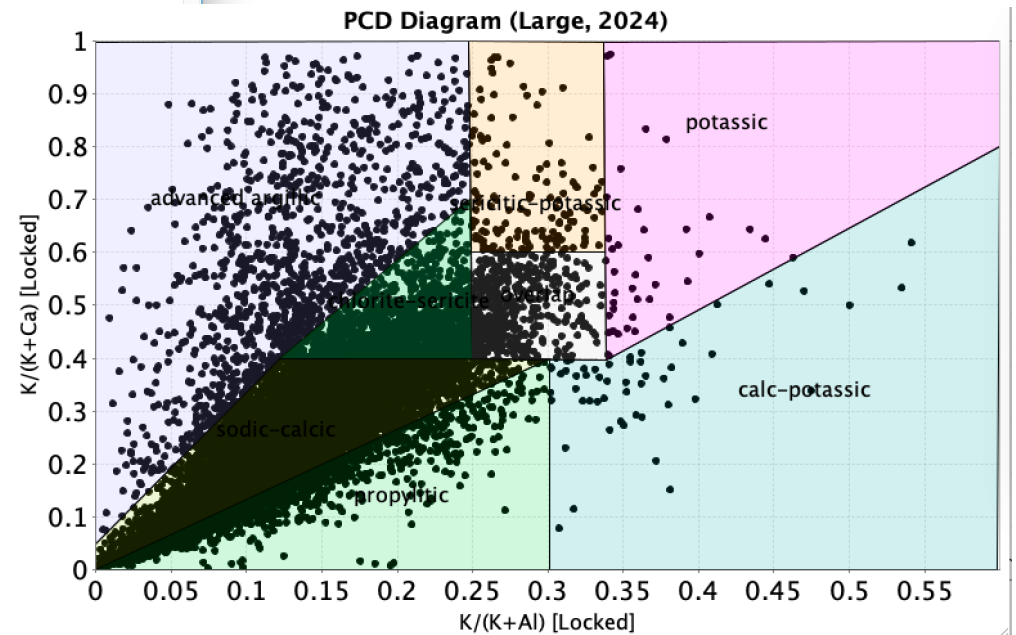
- Go To diagram >> open >> PCD diagram



Least altered porphyries



All drill data



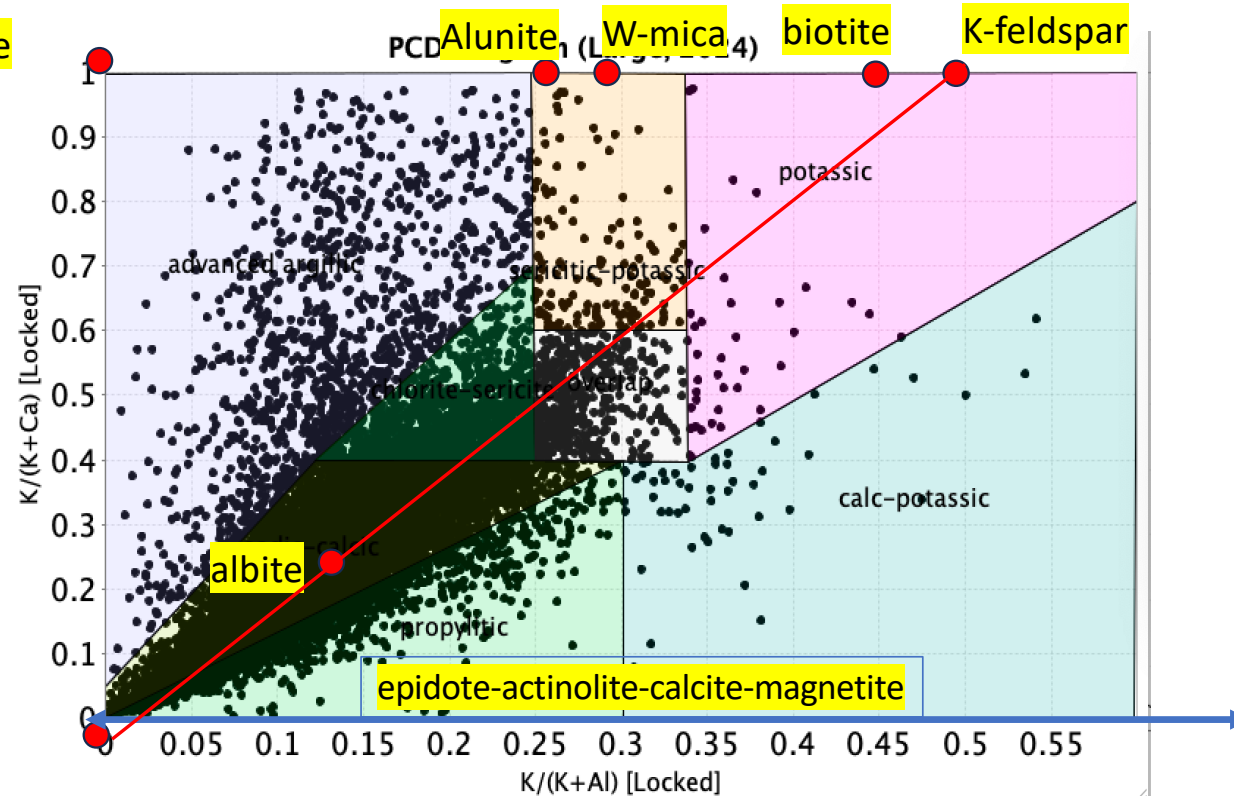
Add mineral NODES in ppt

Pyrophyllite

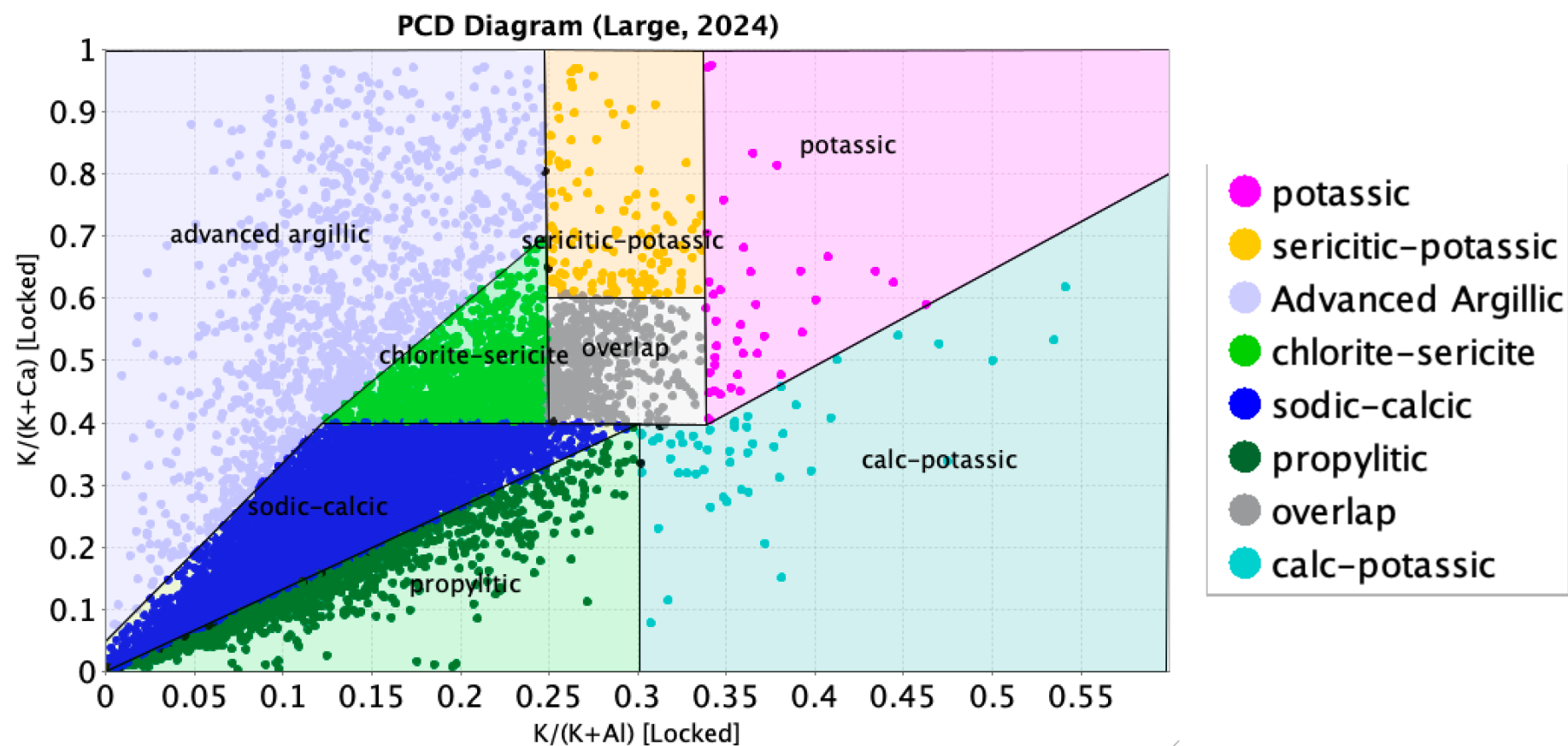
Dickite

Kaolinite

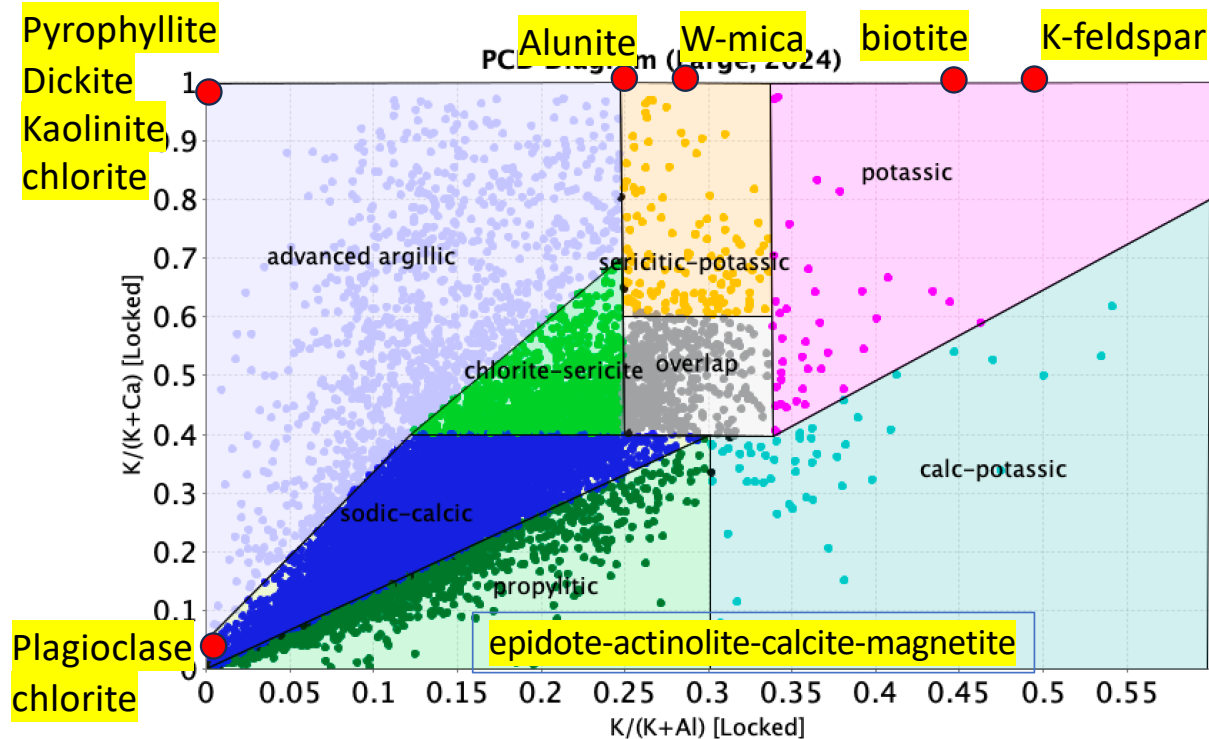
chlorite



Color the alteration fields via attribute Manager



How were the alteration fields selected?

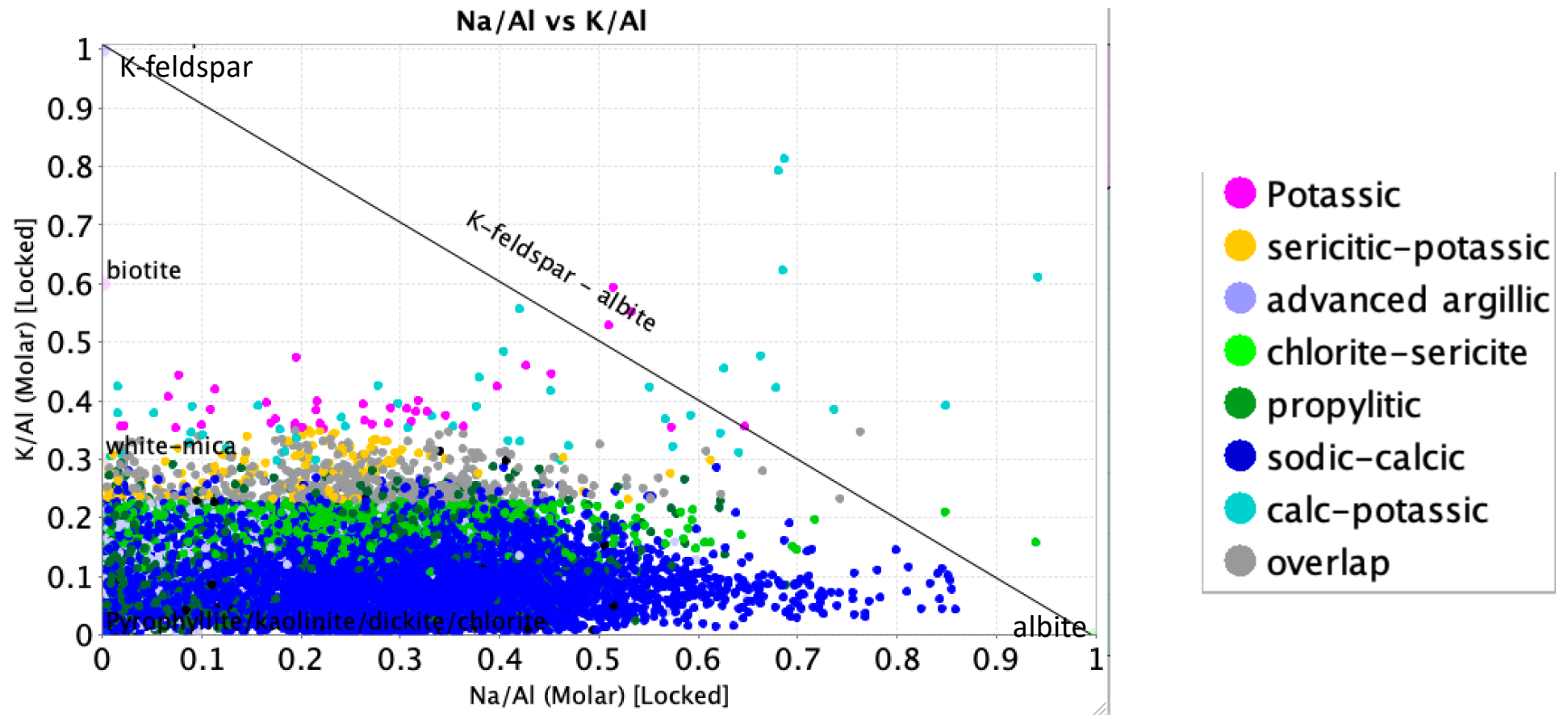


Position of mineral NODES

Trial and error using well characterized altered porphyry analyses

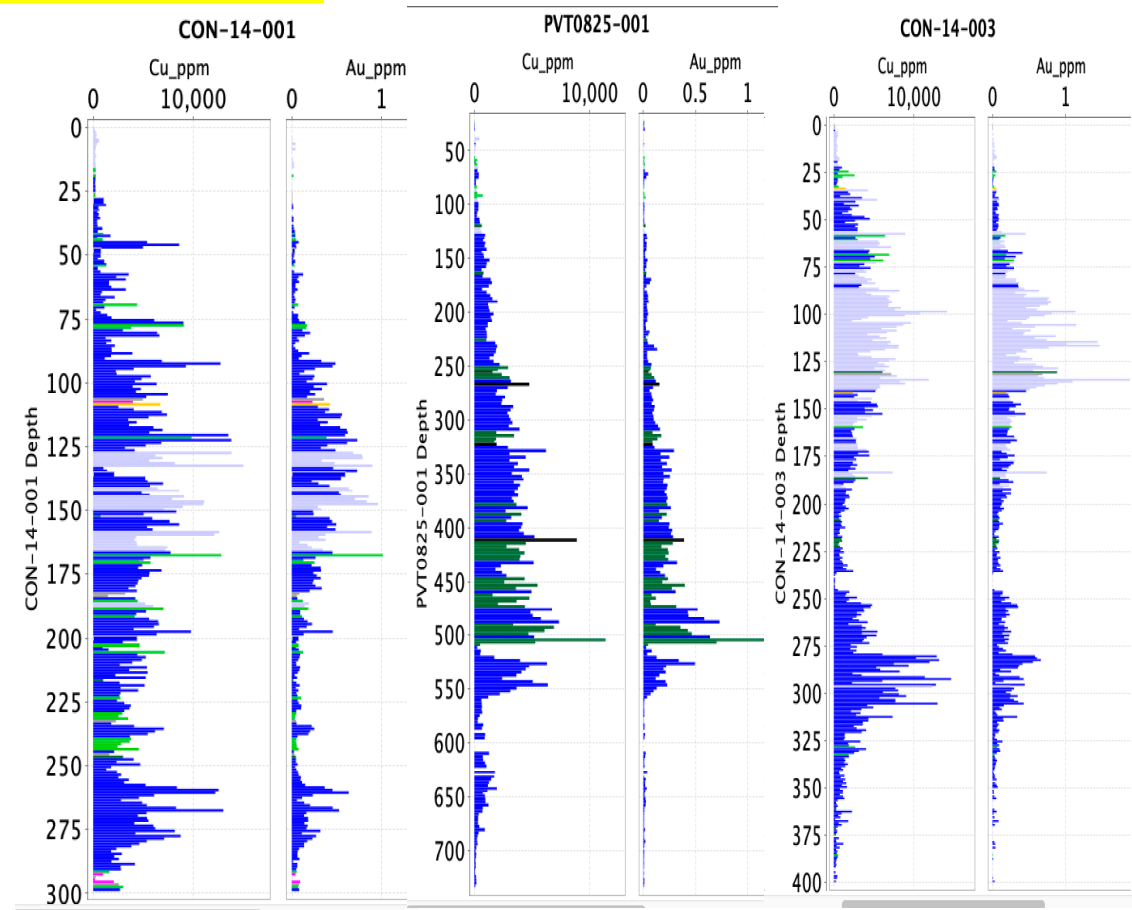
Comparison with mineralogy calculated by MINSQ

Now go back to the Na/Al m vs K/Al m diagram and the colored alteration fields are automatically plotted



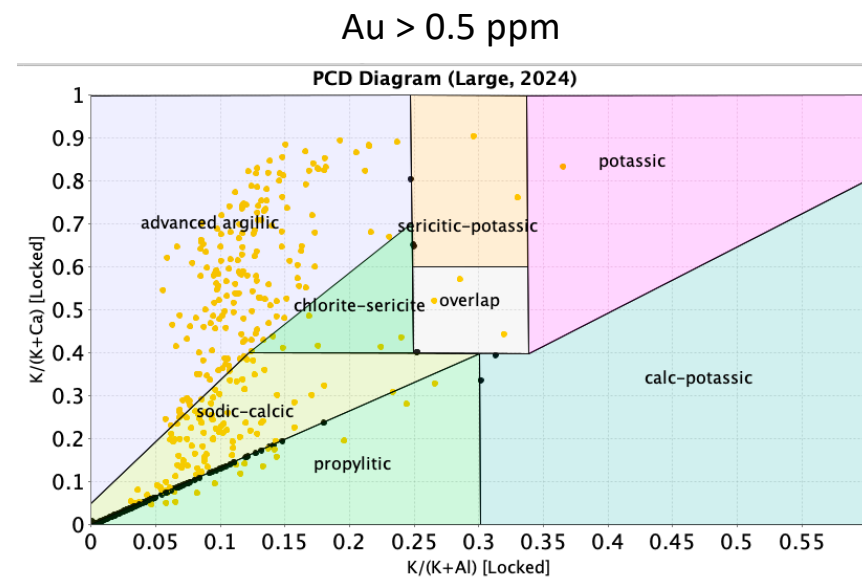
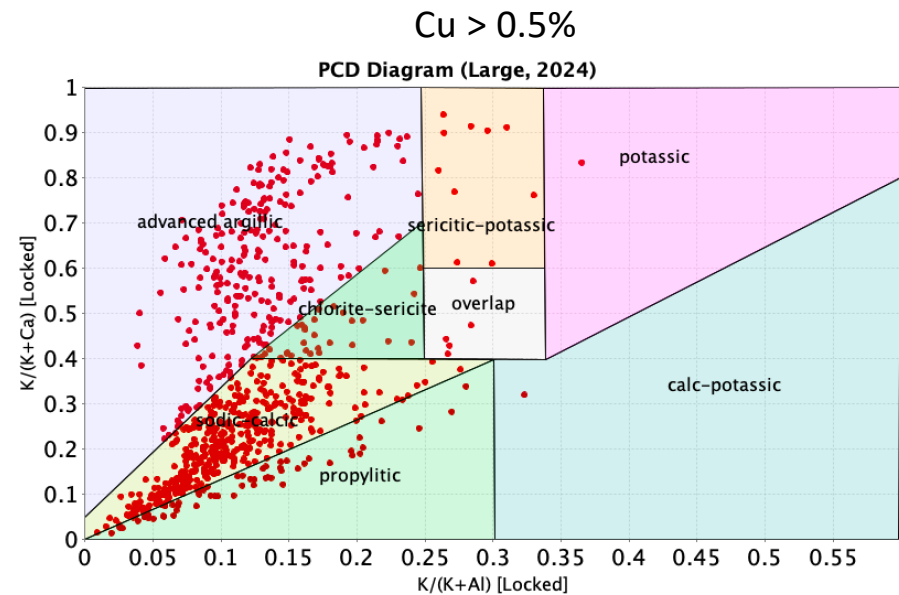
Step 4: Plot alteration down drill holes

- Select Cu and Au for plotting
- Go to **Drillhole** then **select drillhole CON-14-01, PVT0825-01, CON14-003**
- Select **group by drillhole**



Step 5: Plot Cu > 0.5% on the PCD alteration diagram.

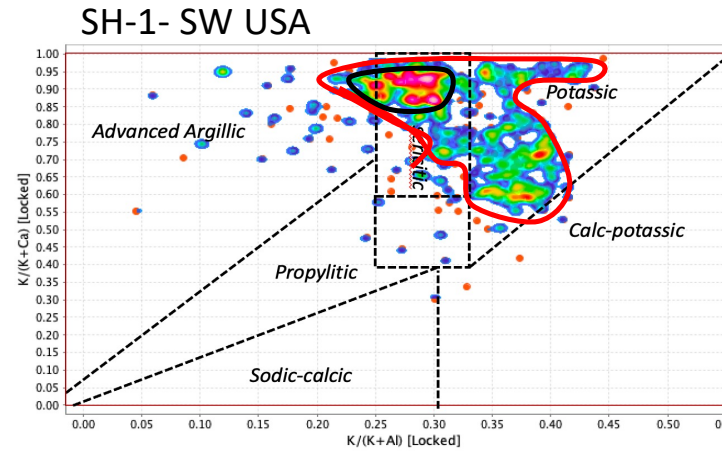
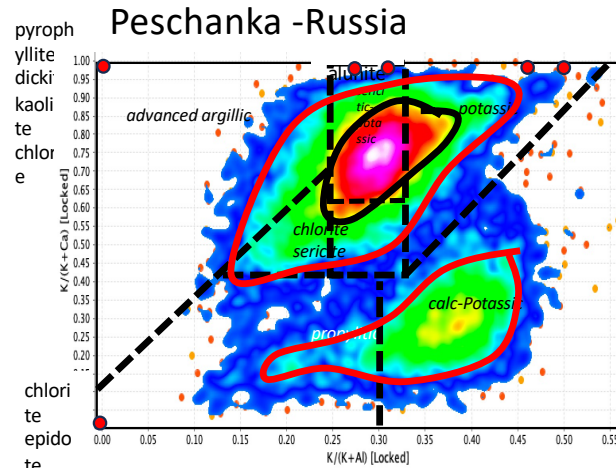
- Plot Cu vs Au
- Select Cu > 0.5% in the graph and attribute manager
- Plot Cu > 0.5% data onto the PCD diagram [K/(K+Al) vs K/(K+Ca)]



Questions

- Put mineral nodes on slide 3
- Based on slide 3, which alteration type is probably most abundant, potassic or propylitic
- What is the composition of least altered P1 and P2
- Based on slide 5 what is the dominant alteration type
- Based on slide 8 what is the dominant alteration type
- Is the potassic alteration rich in K-feldspar
- In the Cu-Au ores, which are the two dominant alteration types

Monzonite-Granodiorite – Based porphyries: Cu & Au relationship to Alteration Types



Diorite – Based porphyries; Cu & Au relationship to Alteration Types

