

Waipapa Taumata Rau
University of Auckland

Magma- Fluid-Host Rock Interactions in the Ferrar LIP, Antarctica

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Overview

Mount Fleming Sill

Shallow plumbing system
(~1.3 km paleodepth)

Asgard Sill

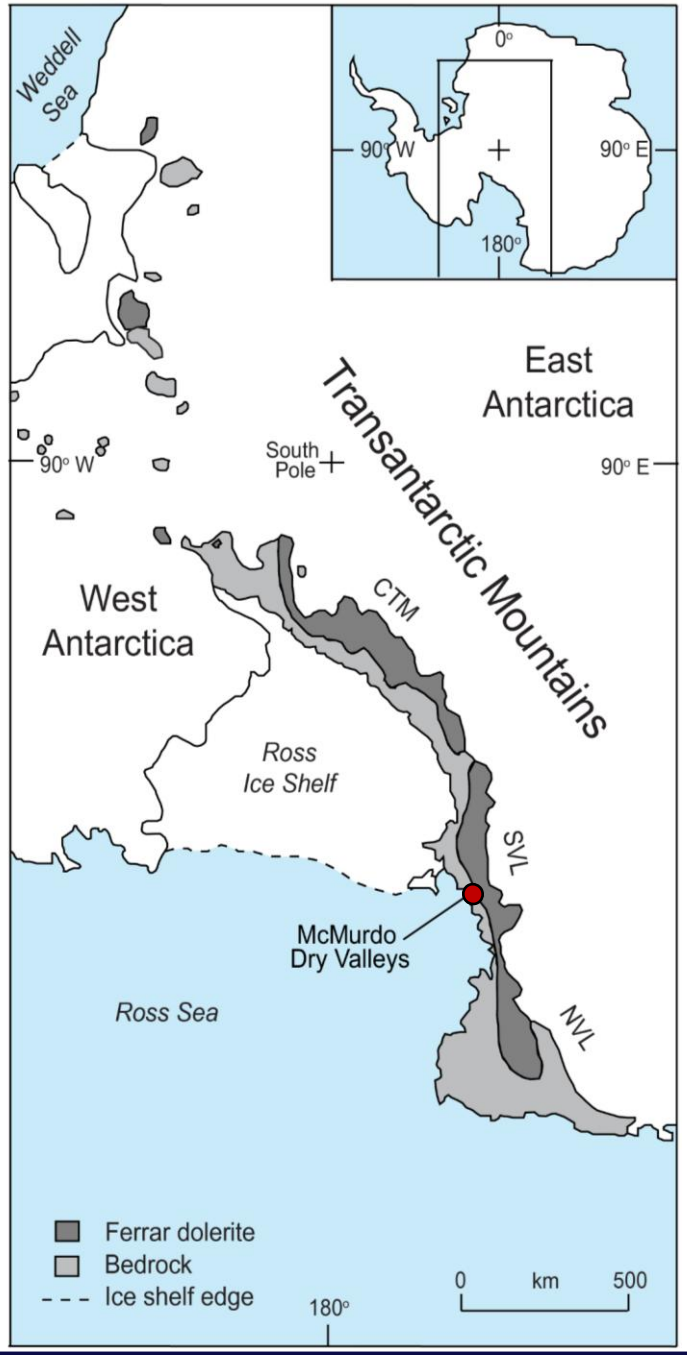
Deep plumbing system
(>2 km paleodepth)

Peneplain Sill

Mount Fleming
1616 – 1836 masl
Dolerite n = 9
Host rock n = 9

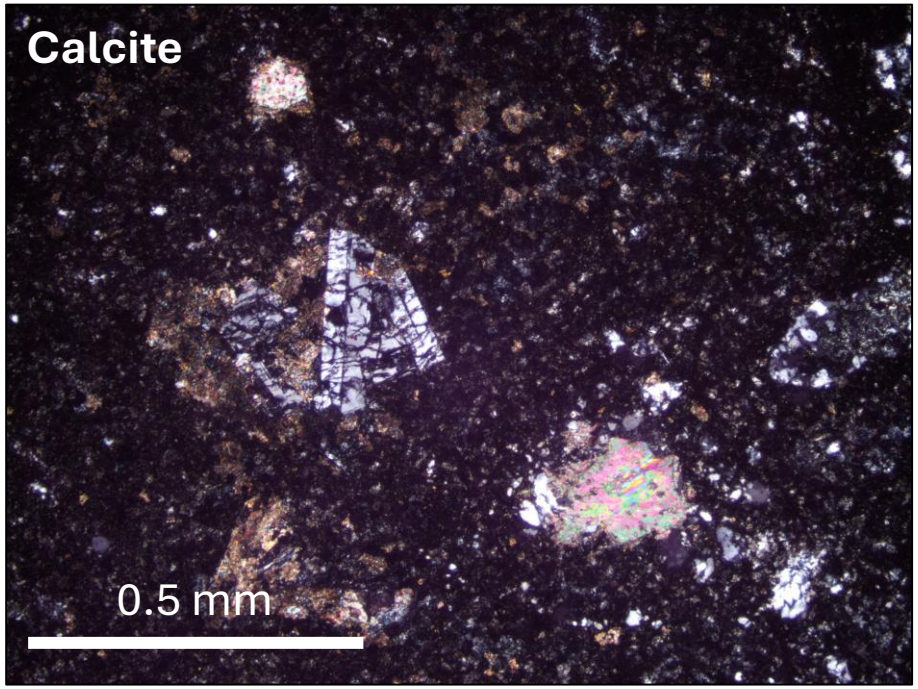
Terra Cotta Mountain
1514 – 1581 masl
Dolerite n = 4
Host rock n = 6

Upper Wright Valley
915 – 1656 masl
Dolerite n = 10
Host rock n = 27



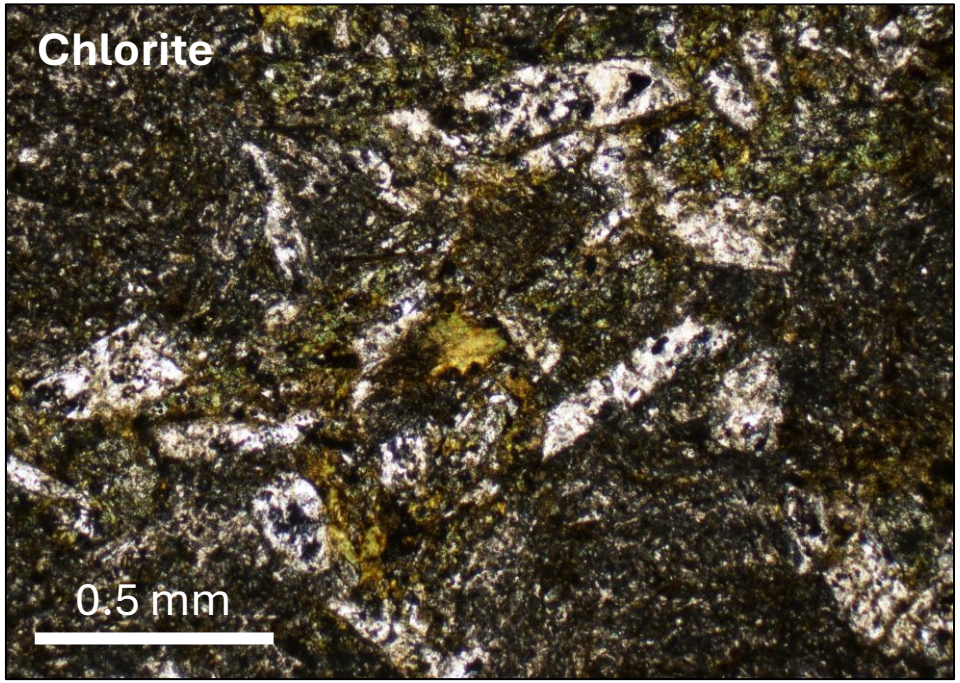
Modified from Hanson and Elliot (1996)

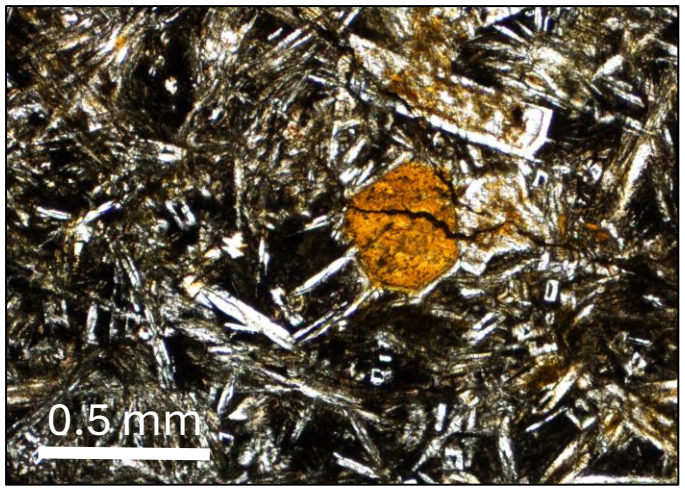
Alteration Minerology

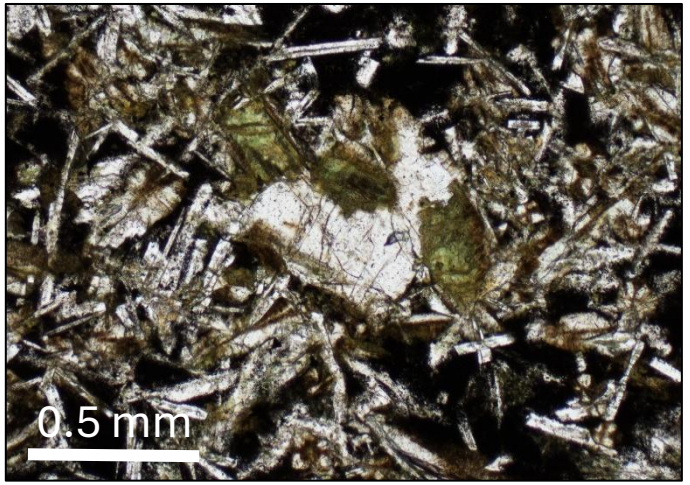


+ epidote, clays and sulphides

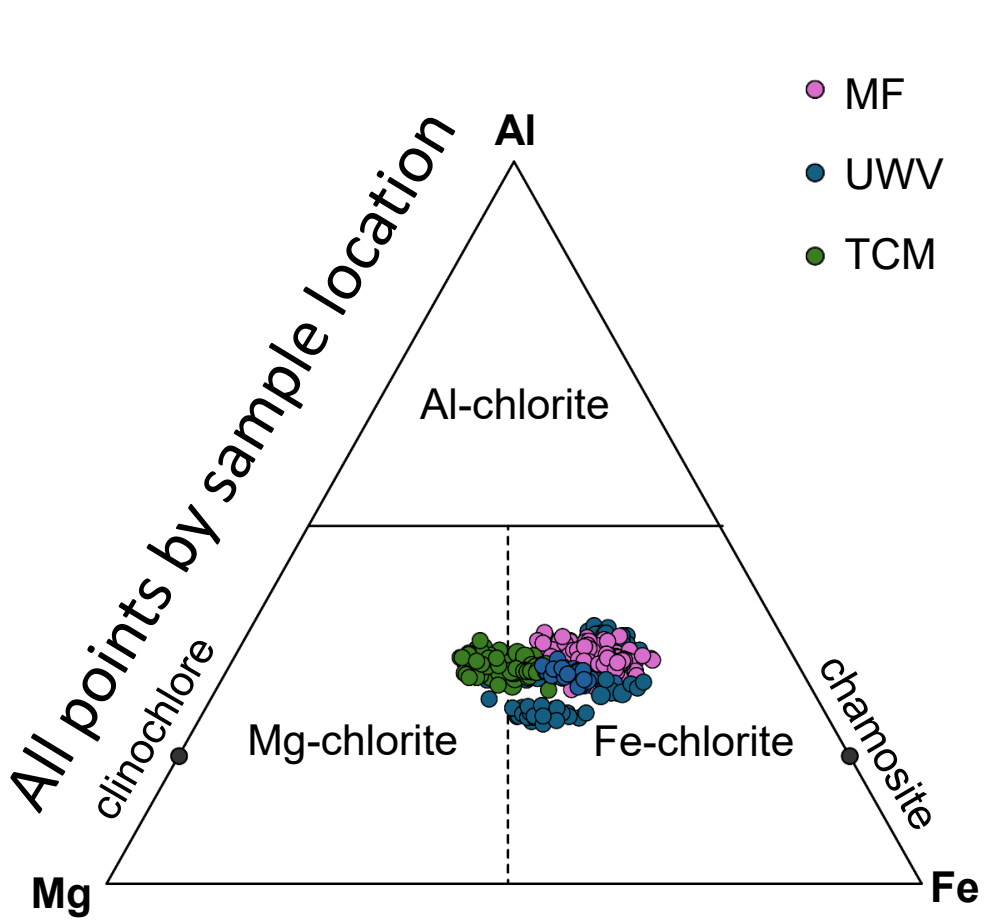
Neutral fluids

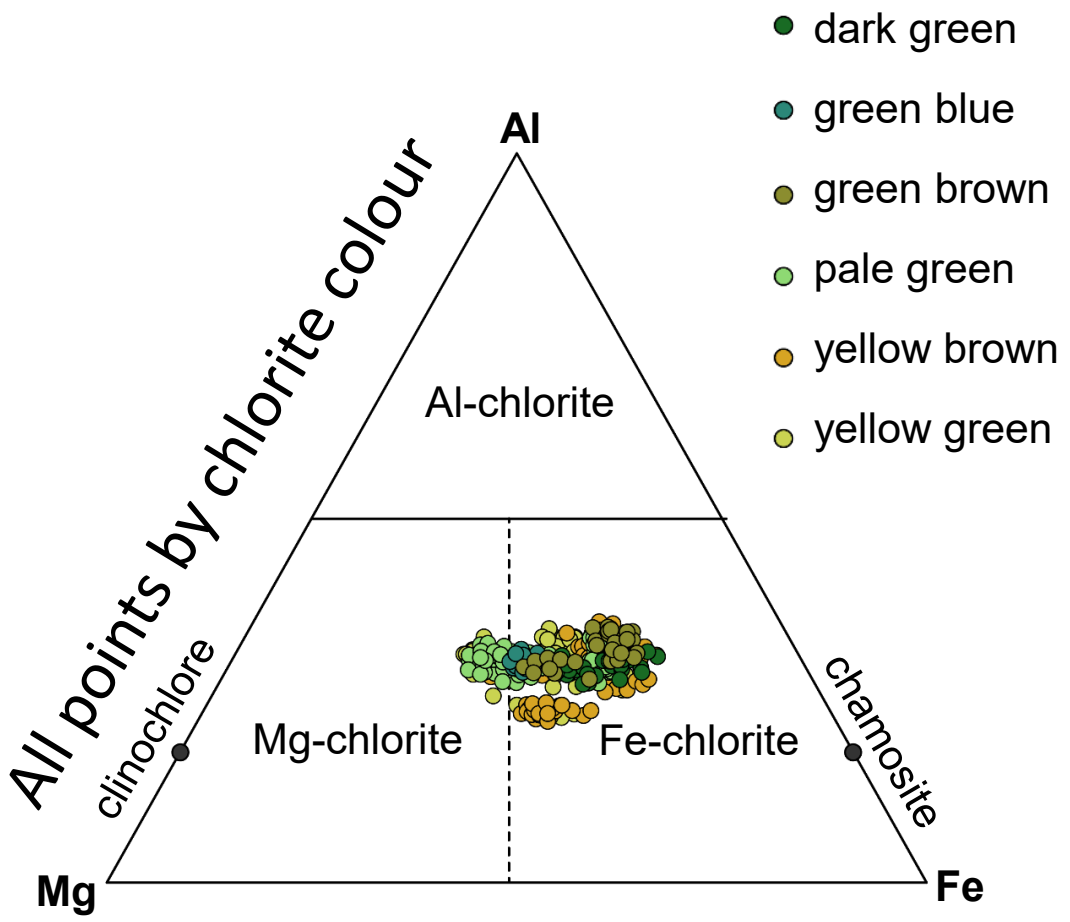




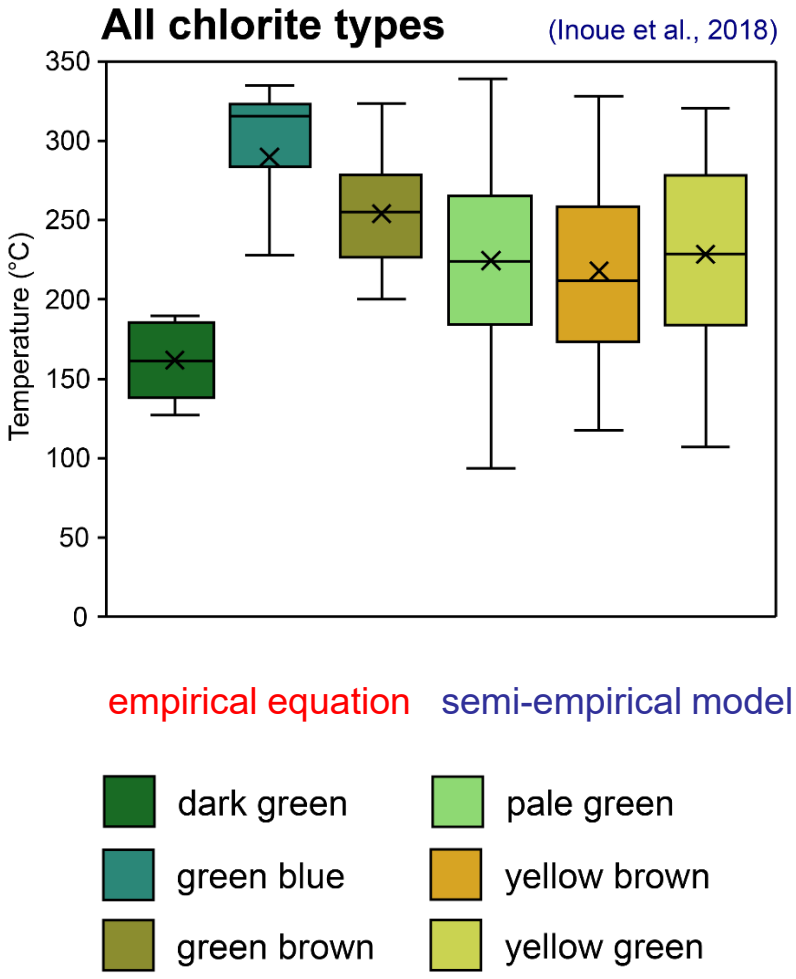


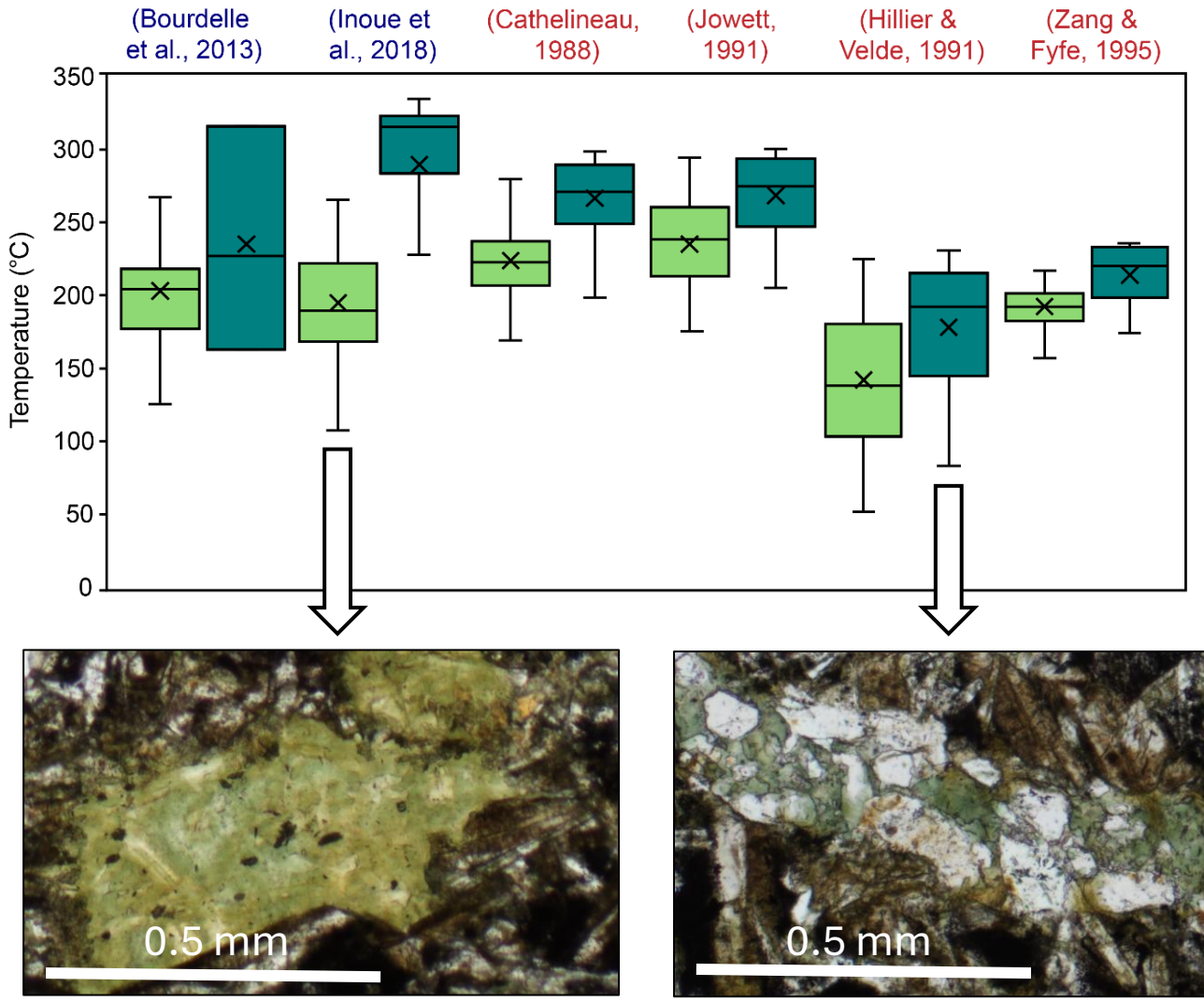
Chlorite EPMA





Chlorite Geothermometry

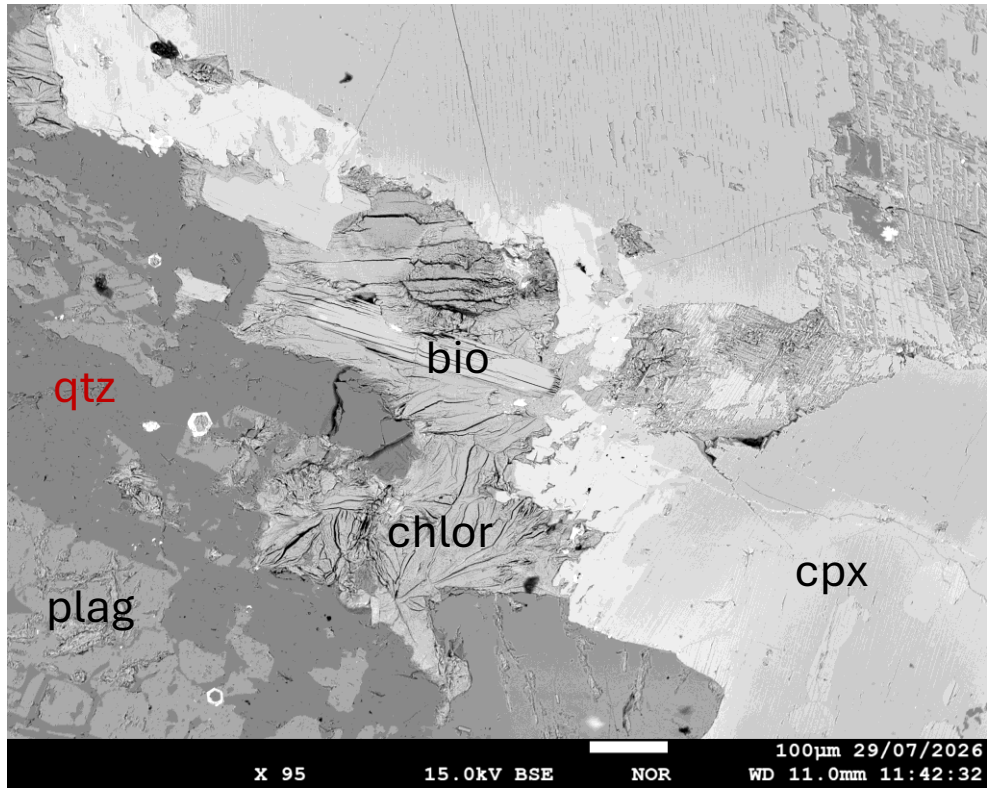




Conclusions

- Propylitic alteration
- Greater alteration of dikes compared to sills
- Three possible hydrothermal systems

Future Work



References

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