

Characterising Victoria's Antimony-Gold Deposits: Form and Timing

AIG Victoria Minerals Roundup


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Economic Geologist – Critical Minerals

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We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

Resources Victoria is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.



Disclaimer

GSV and the CSIRO jointly undertook research resulting in this data and information.

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Collaboration



Australian Government
Geoscience Australia



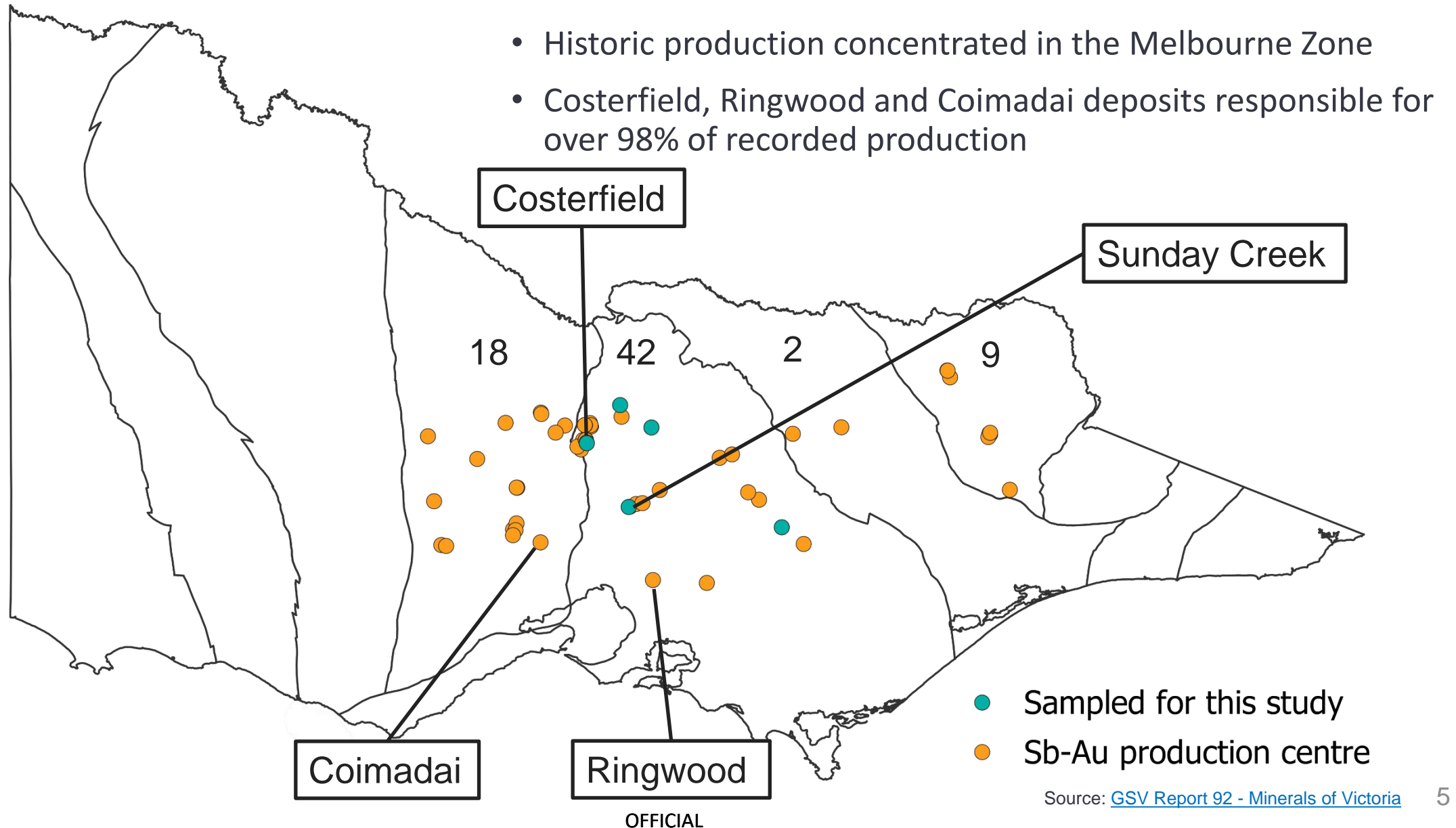
UNIVERSITY
OF ALBERTA



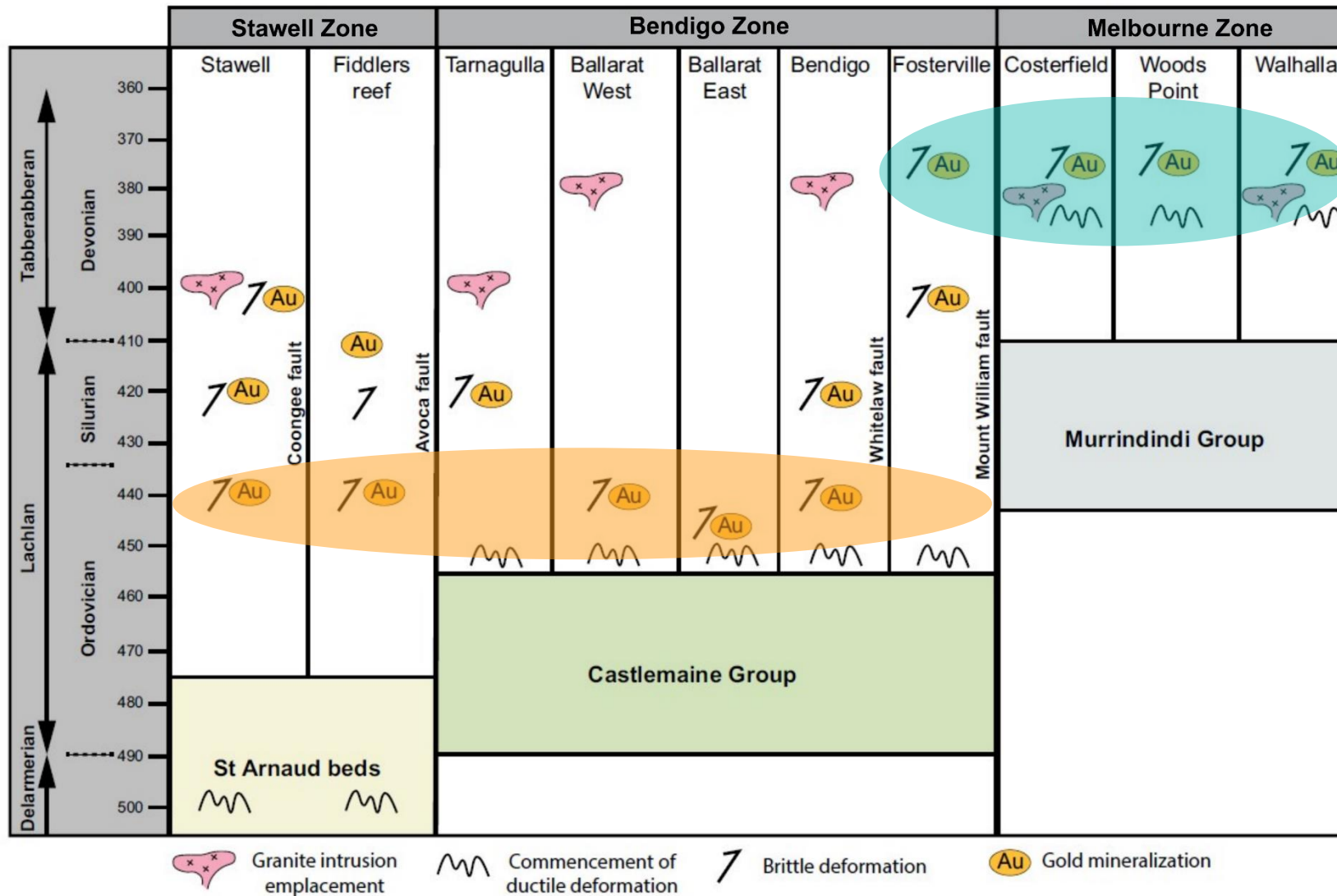
Curtin University



Antimony-gold production centres



Gold mineralisation events in Victoria



Source: [Voisey et al. 2020](#)

Ore sample characterisation



Characterisation



Geochronology



Ore sample characterisation

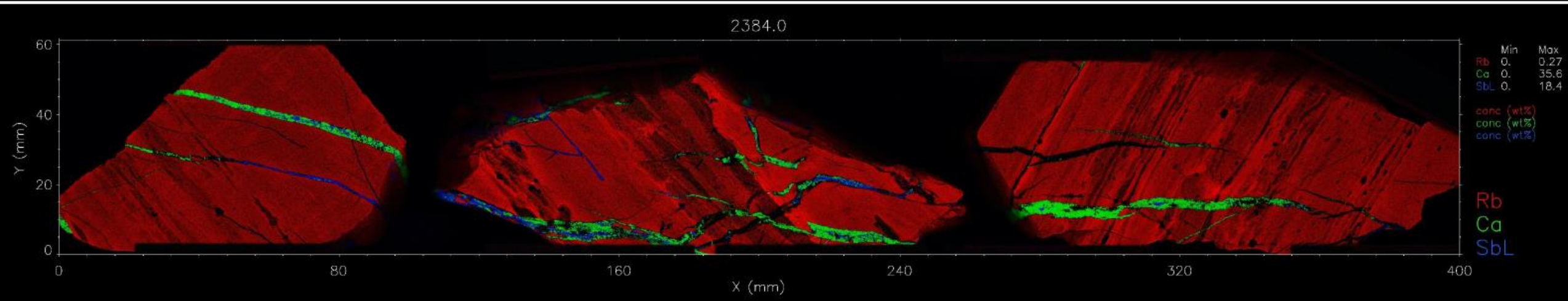
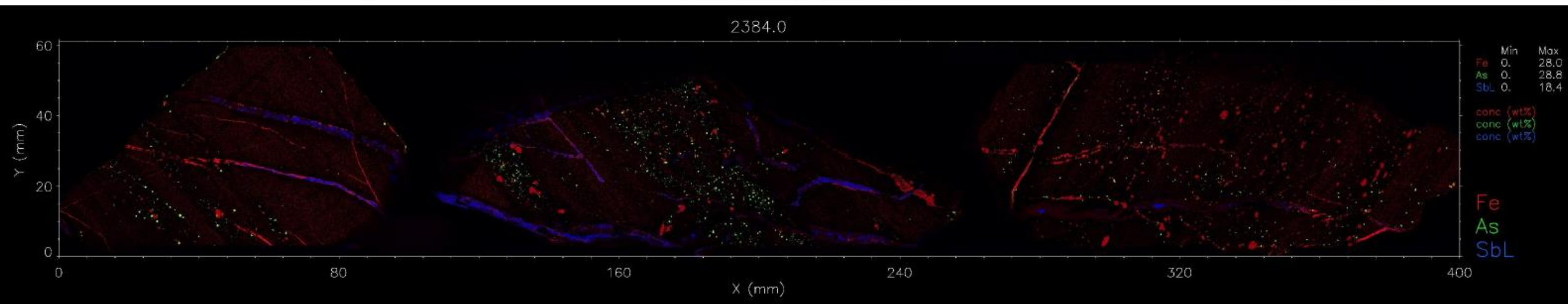
322115 Sunday Creek MAIA map: 2384



stibnite (blue)

arsenopyrite (green)

pyrite (red)



Carbonate veins (green)

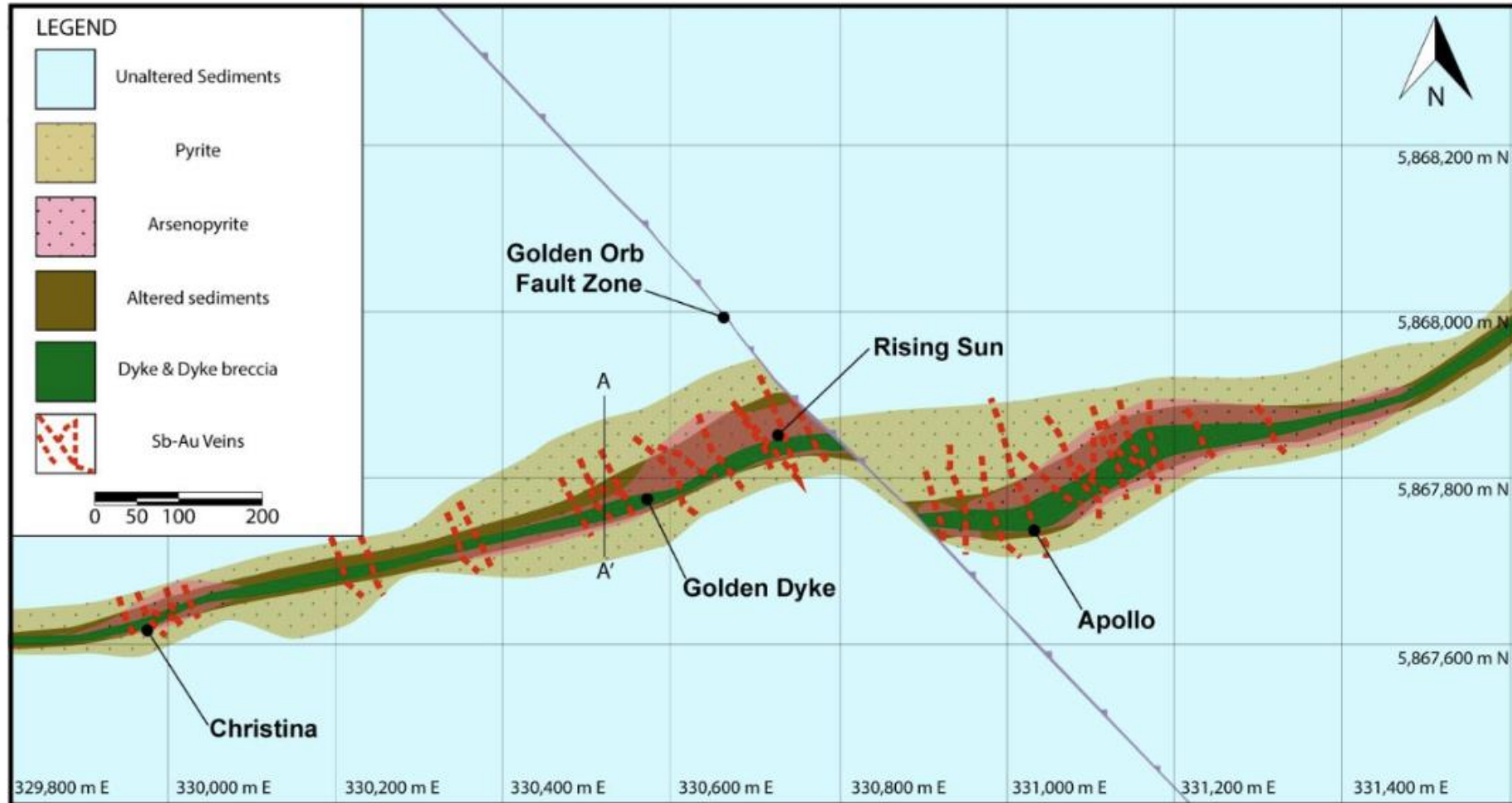
stibnite (blue)

siltstone (red)

Source: Waugh et al. (in prep)

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Re-Os geochronology – Sunday Creek



Source: [Southern Cross Gold 2024](#)

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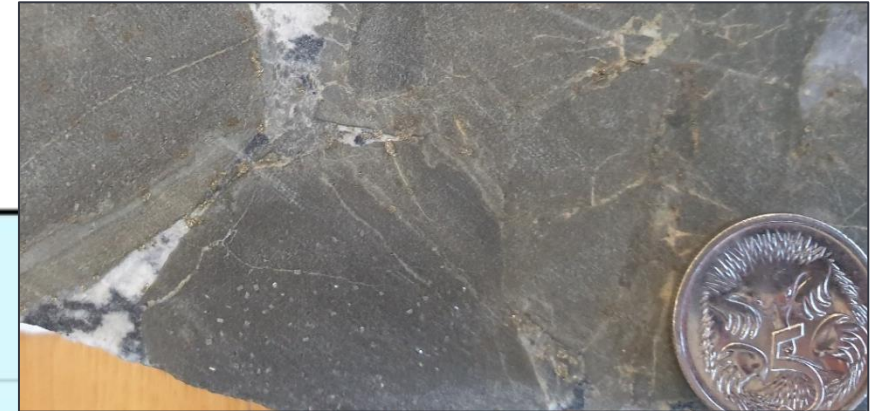
Re-Os geochronology – Sunday Creek



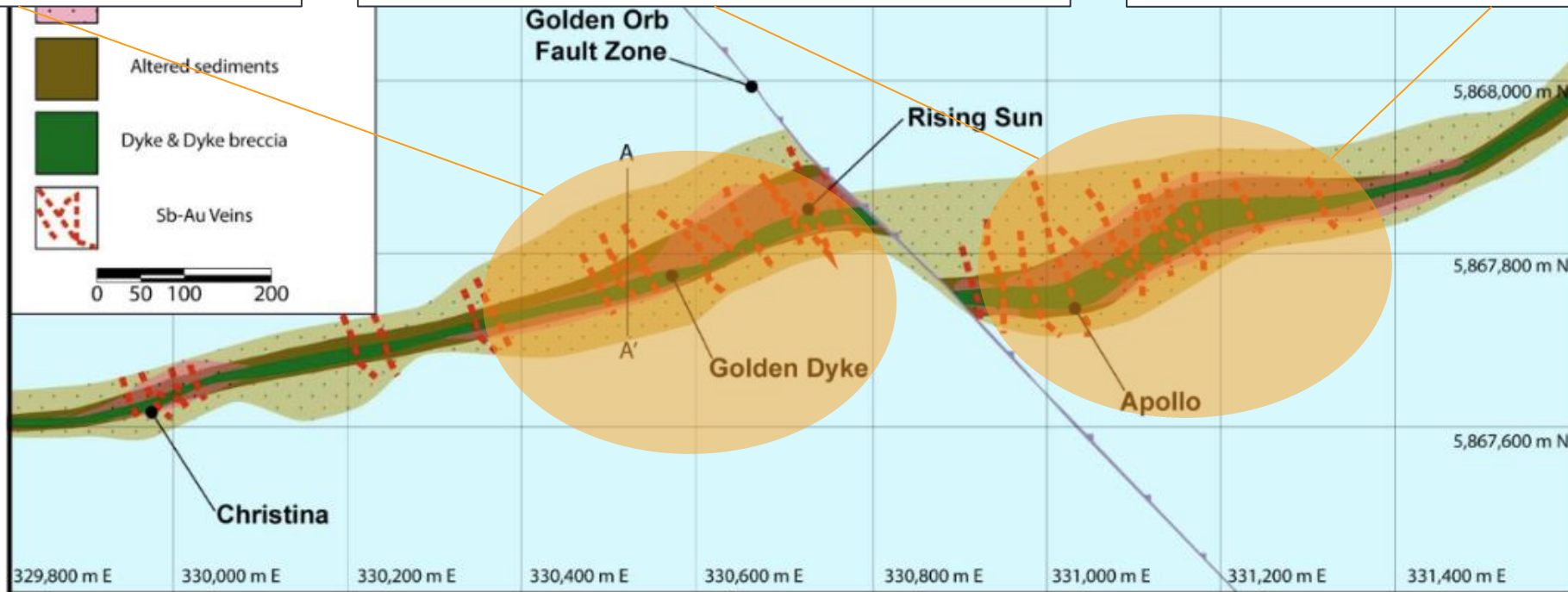
Pyrite 378.8 ± 1.6 Ma



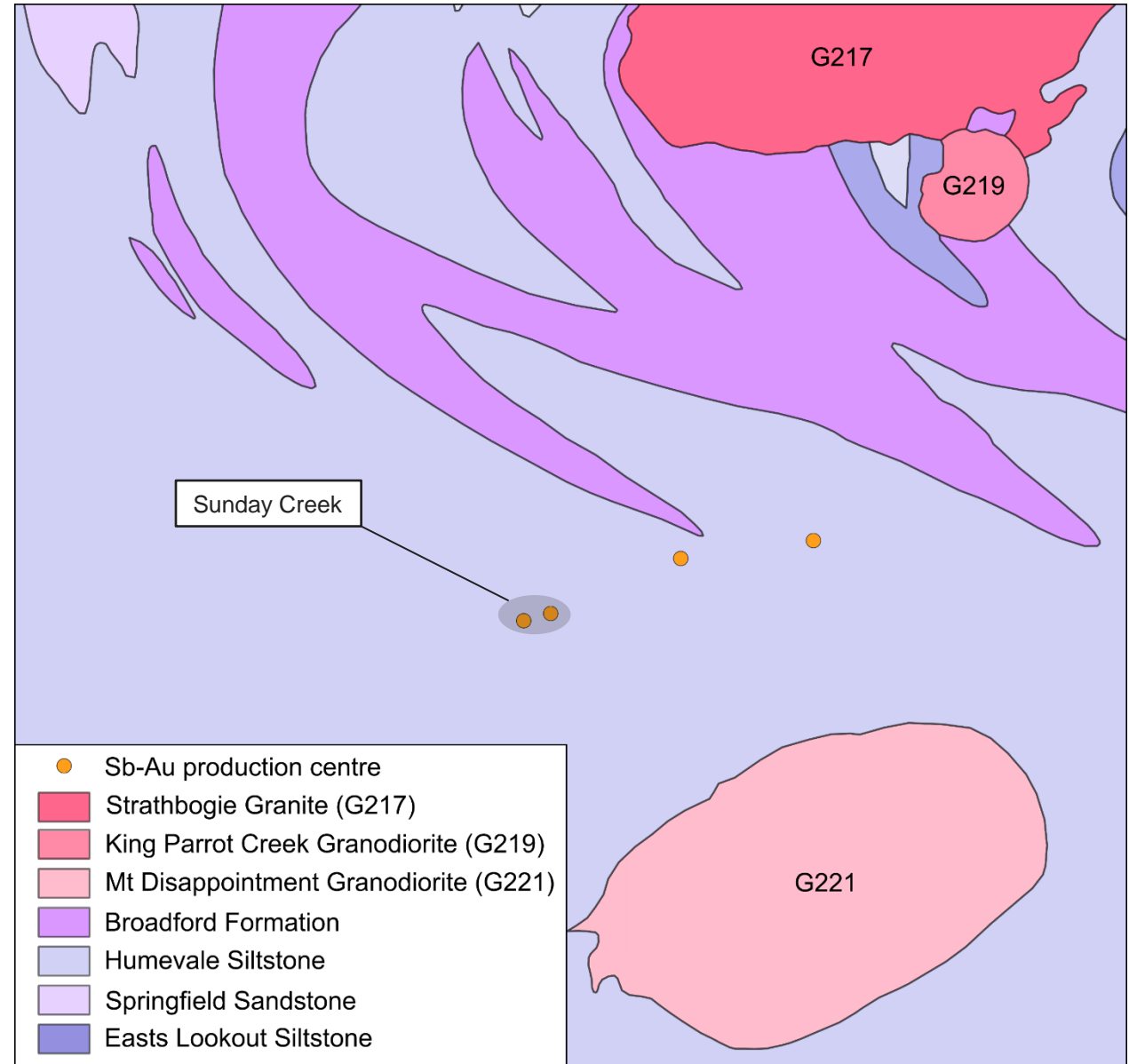
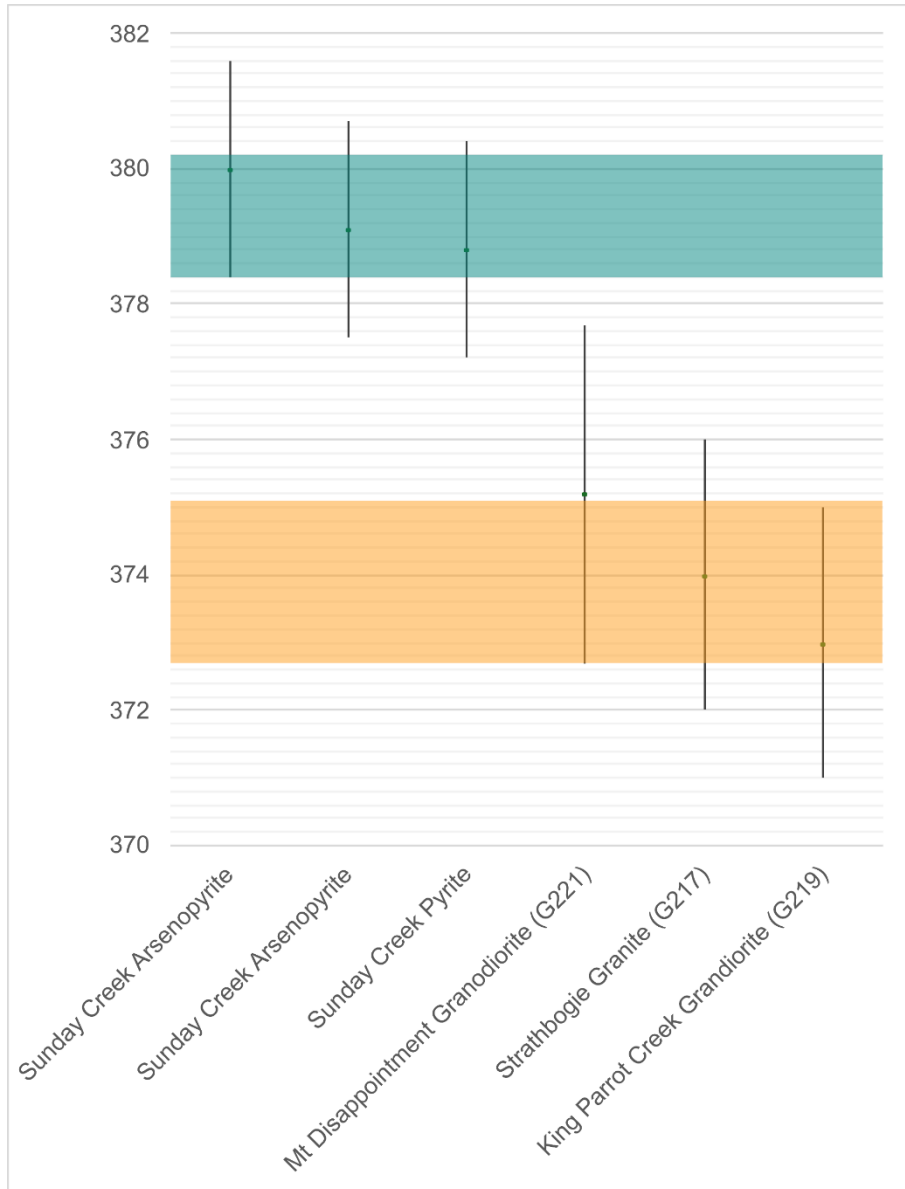
Arsenopyrite 379.1 ± 1.6 Ma



Arsenopyrite 380.0 ± 1.6 Ma



Re-Os geochronology – Sunday Creek region



Sources: G221 – [Clemens et al. \(2023\)](#), G217 – [Bierlein et al. \(2001\)](#), G219 – GA-GSV (in prep), [GSV Seamless Geology](#)

Summary

- High precision Re-Os geochronology constrains mineralisation at Sunday Creek to 379 ± 1 Ma
- Mineralisation predates granite emplacement in the region
- Consistent with late-Tabberabberan transpressional setting
- Low-volume magmatism occurred prior to mineralisation at Sunday Creek
- Dyke rocks are just one possible host for this deposit type
- Exploration implications:
 - Large granites are not prospective
 - Distance from granites is not a key variable



Sb-Au mineralisation from Costerfield (Youle)



Thank you

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