

Regional event-framework for exploration in the western Gawler Craton

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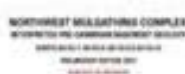
- **GEOSCIENCE AUSTRALIA**

- Tess Dance
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- **DOMINION MINING**

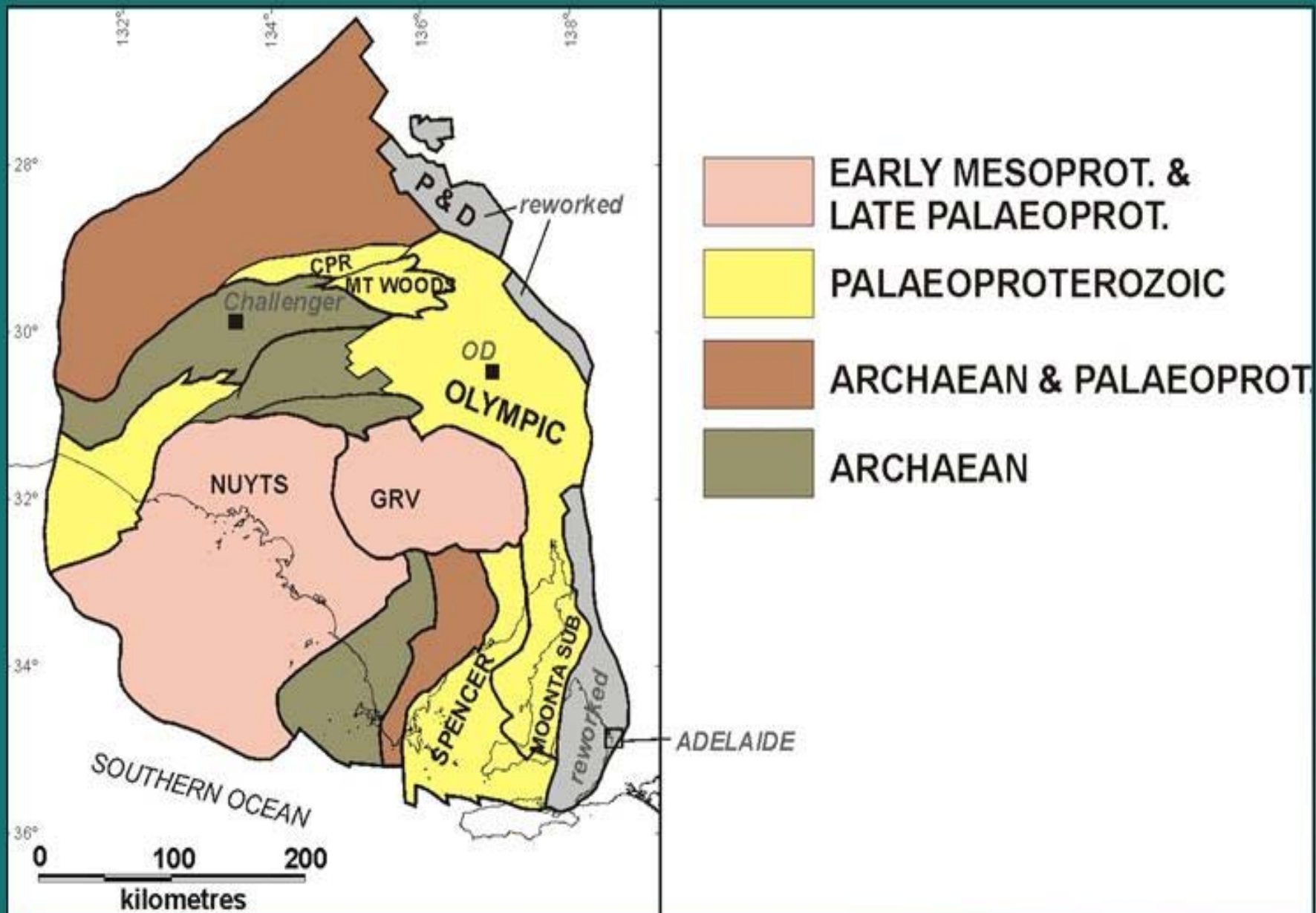
- David Frances
- Tony Poustie
- Paul Androvich





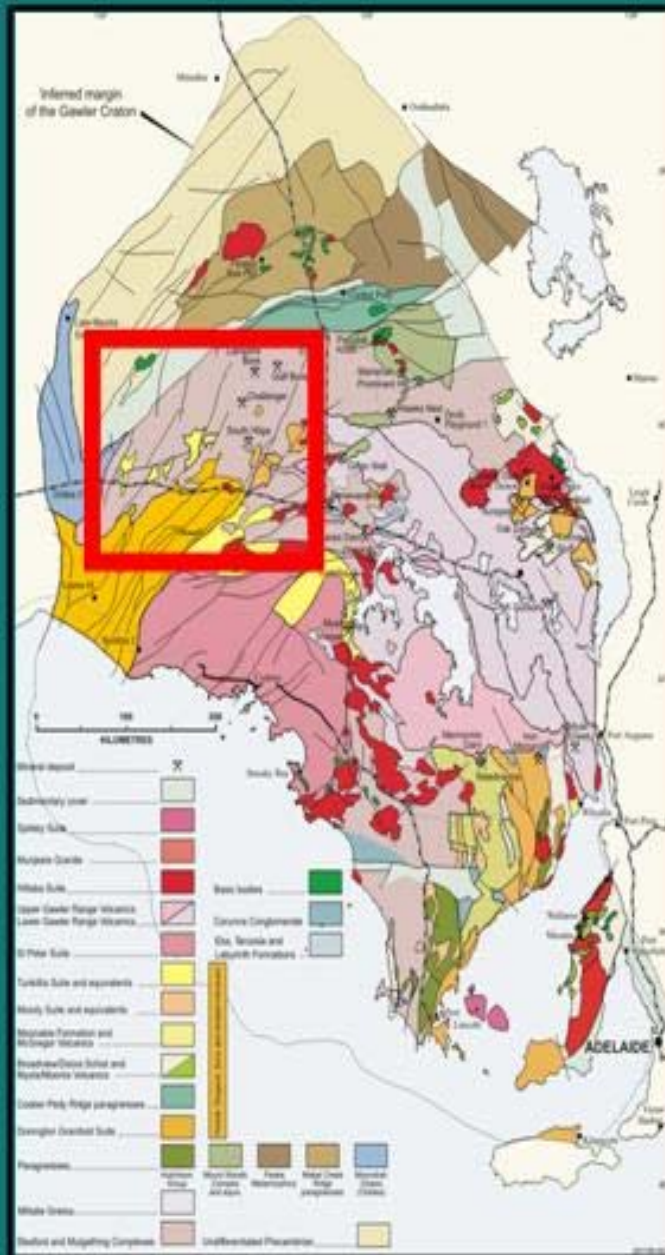
OUT NOW!







A lot of what we know is based on a very limited amount outcrop and the serendipity of drill holes

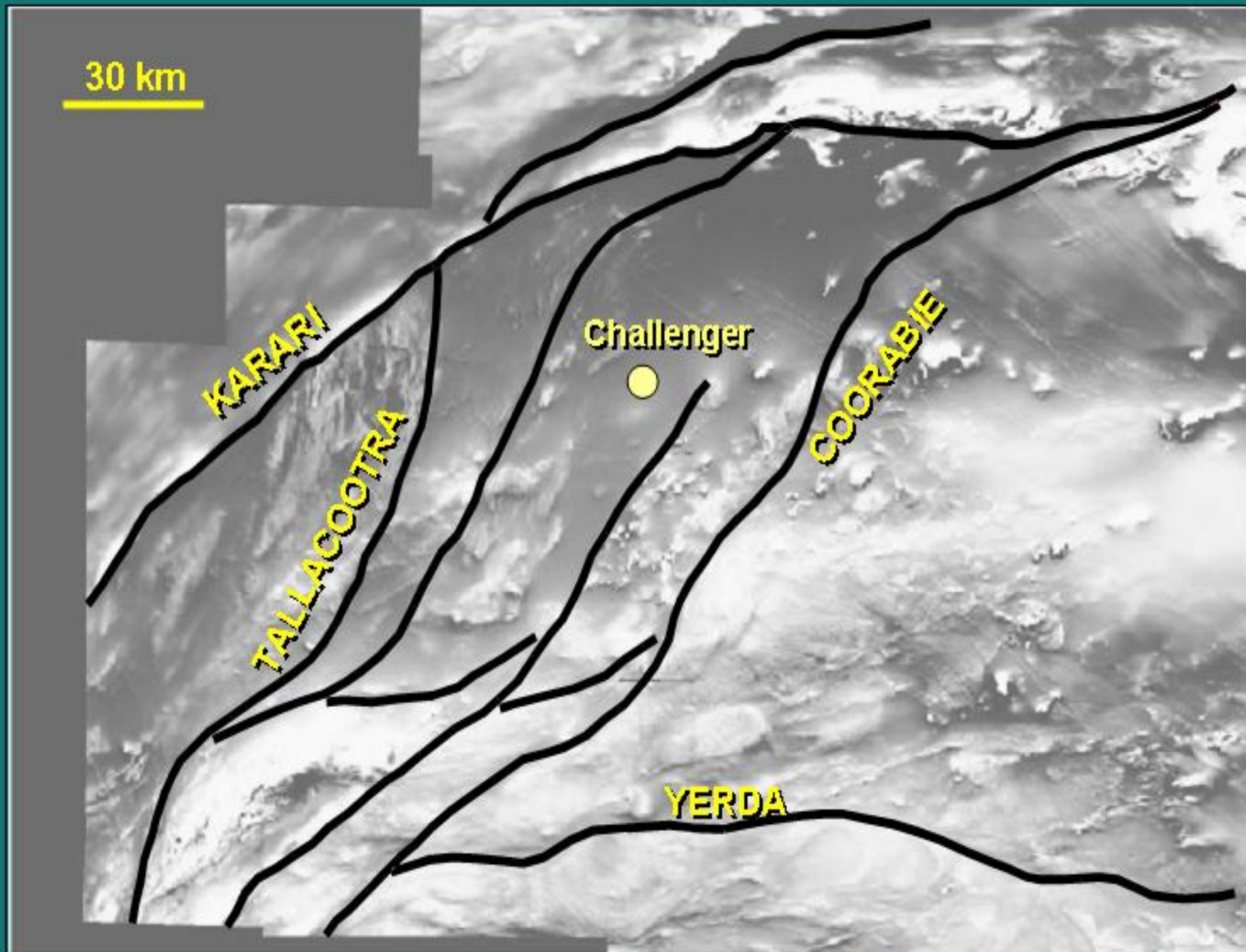


Known periods of tectonism

Sleafordian Orogeny ~2440 Ma
Granulite facies metamorphism. What did it?

Kimban Orogeny ~1730 Ma
Collision of Gawler with Arunta?

Kararan Orogeny? ~1690 - 1540 Ma
Still enigmatic



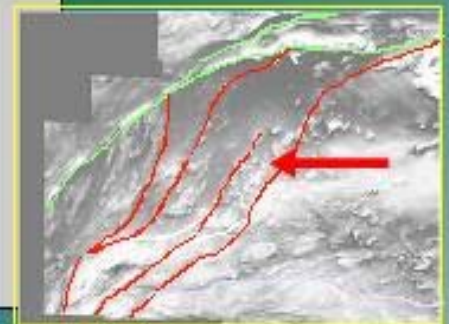
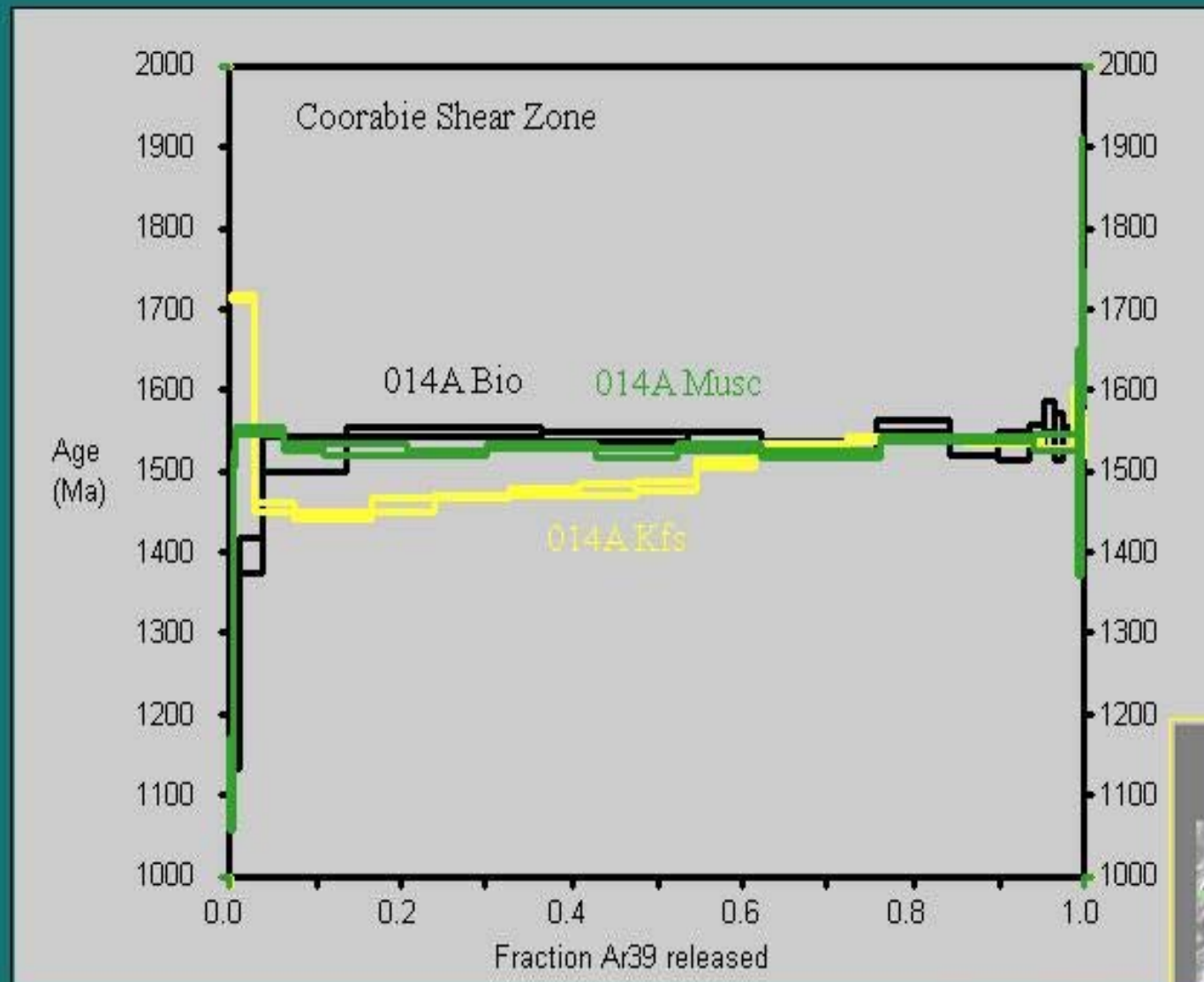


Argon-argon results

Geoff Fraser

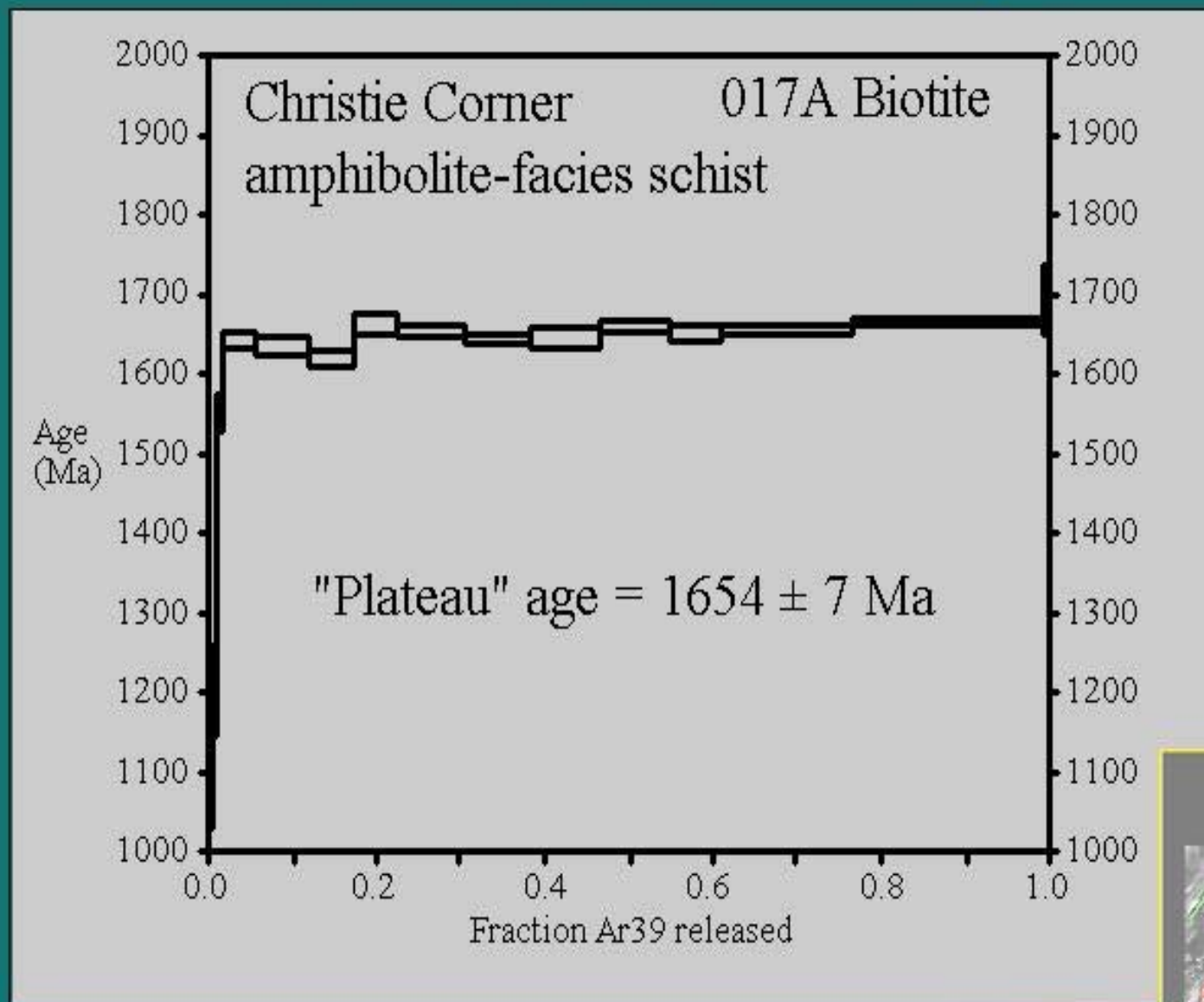


Coorabie Shear Zone ~1540 Ma





Christie Domain ?resetting ~1650 Ma

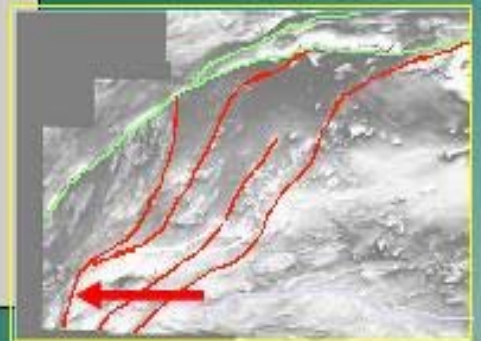
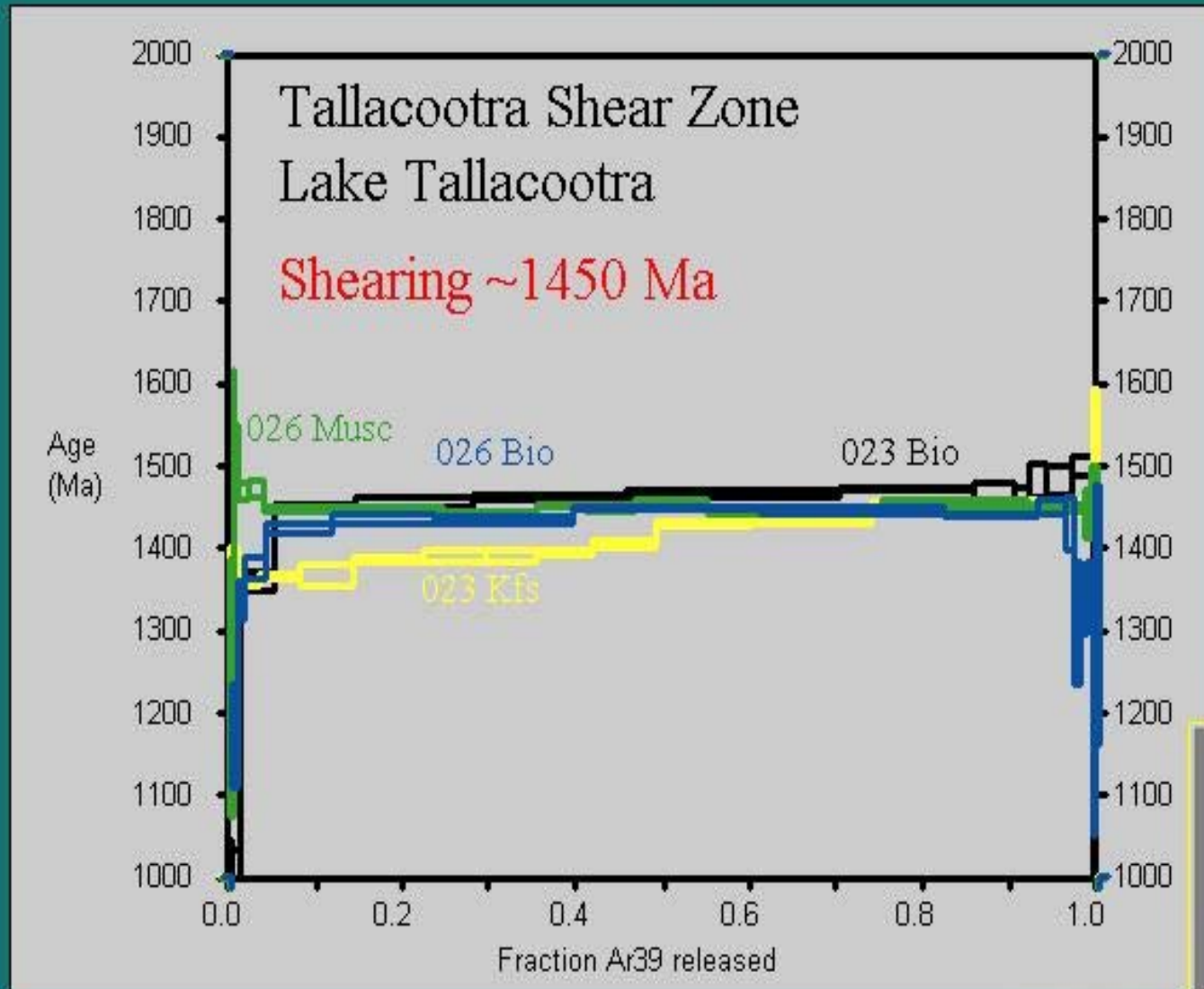


Tallacootra Shear Zone



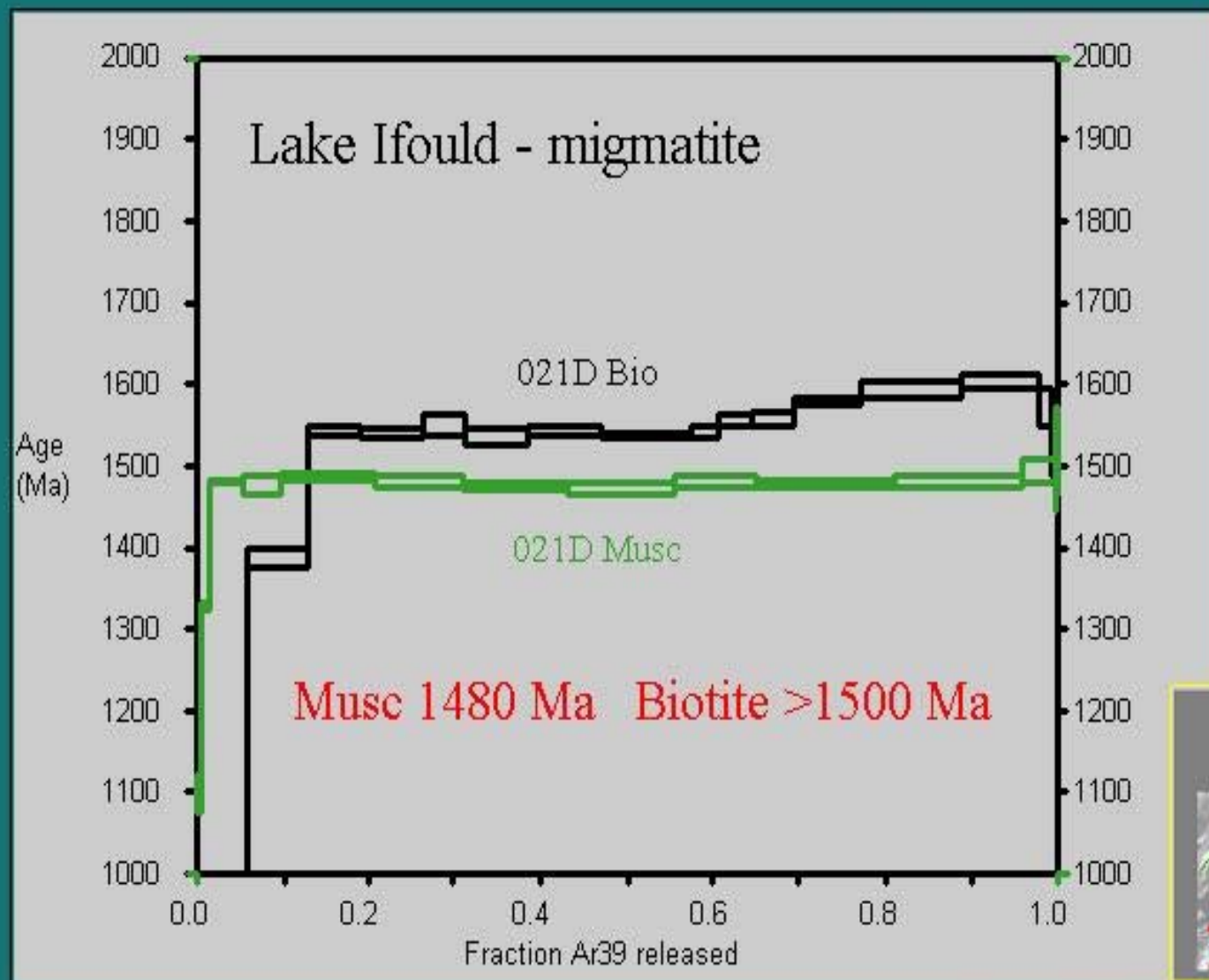


Tallacootra Shear Zone ~1450 Ma

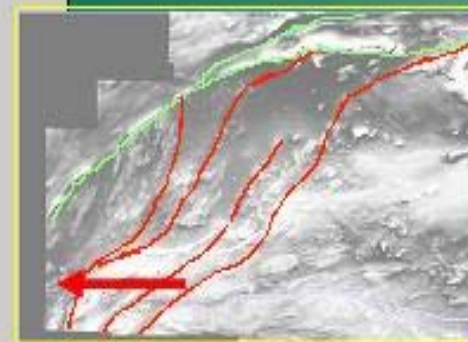


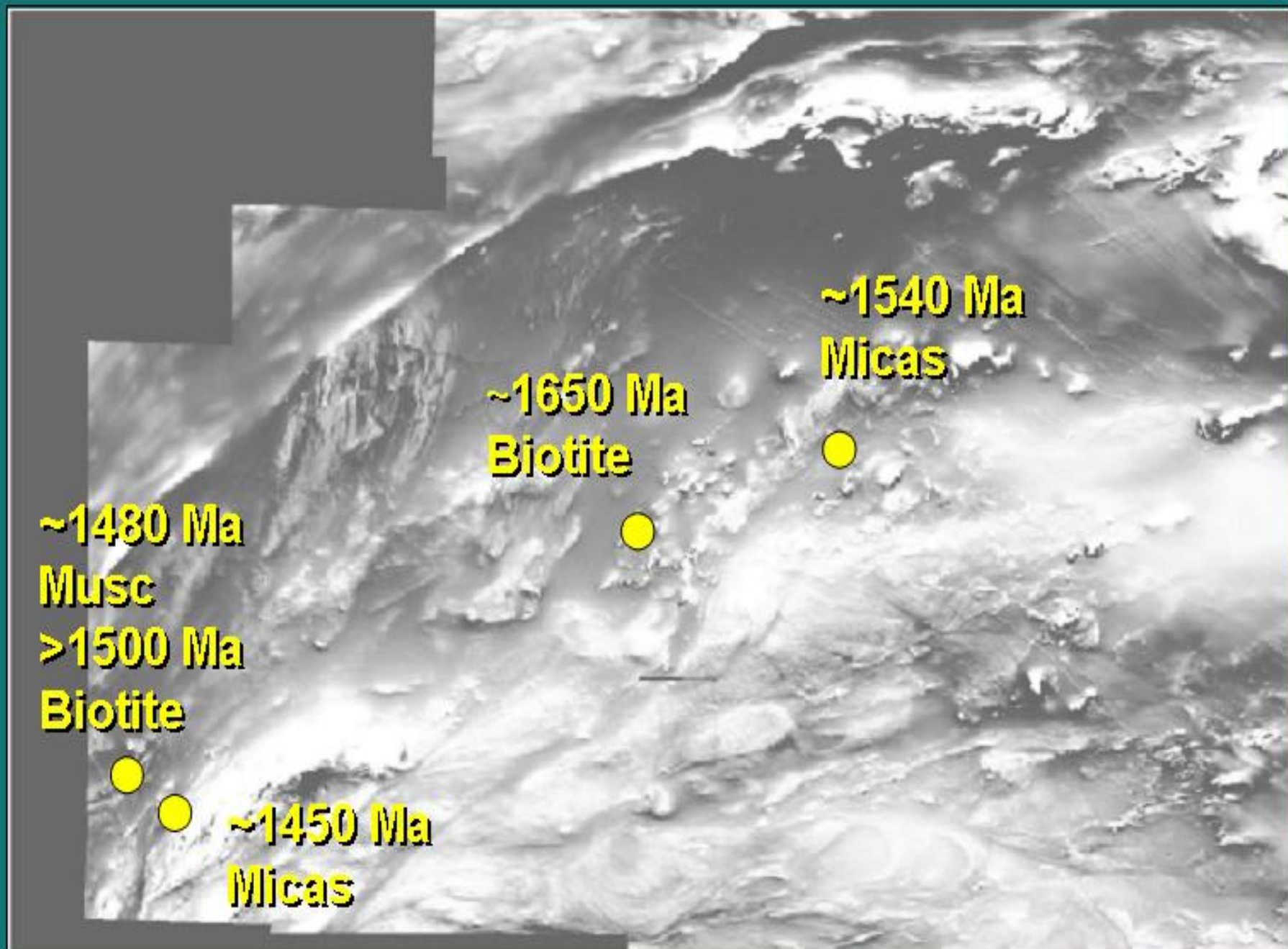


Lake Ifould migmatite



Reset
during
~1450 Ma
shearing?





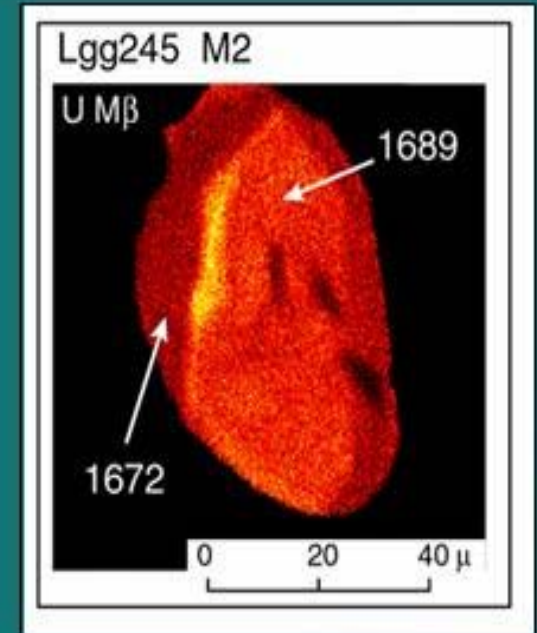
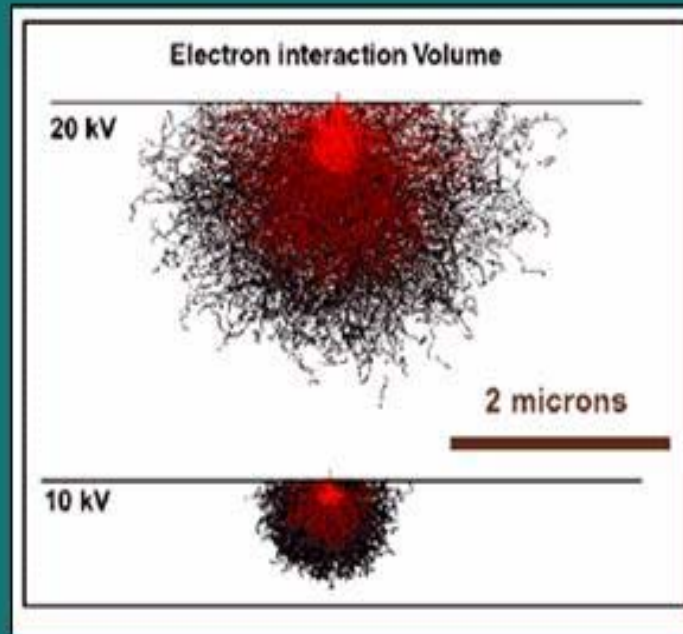


Chemical dating of monazites

Oli Holm Ron Berry Dave Steele



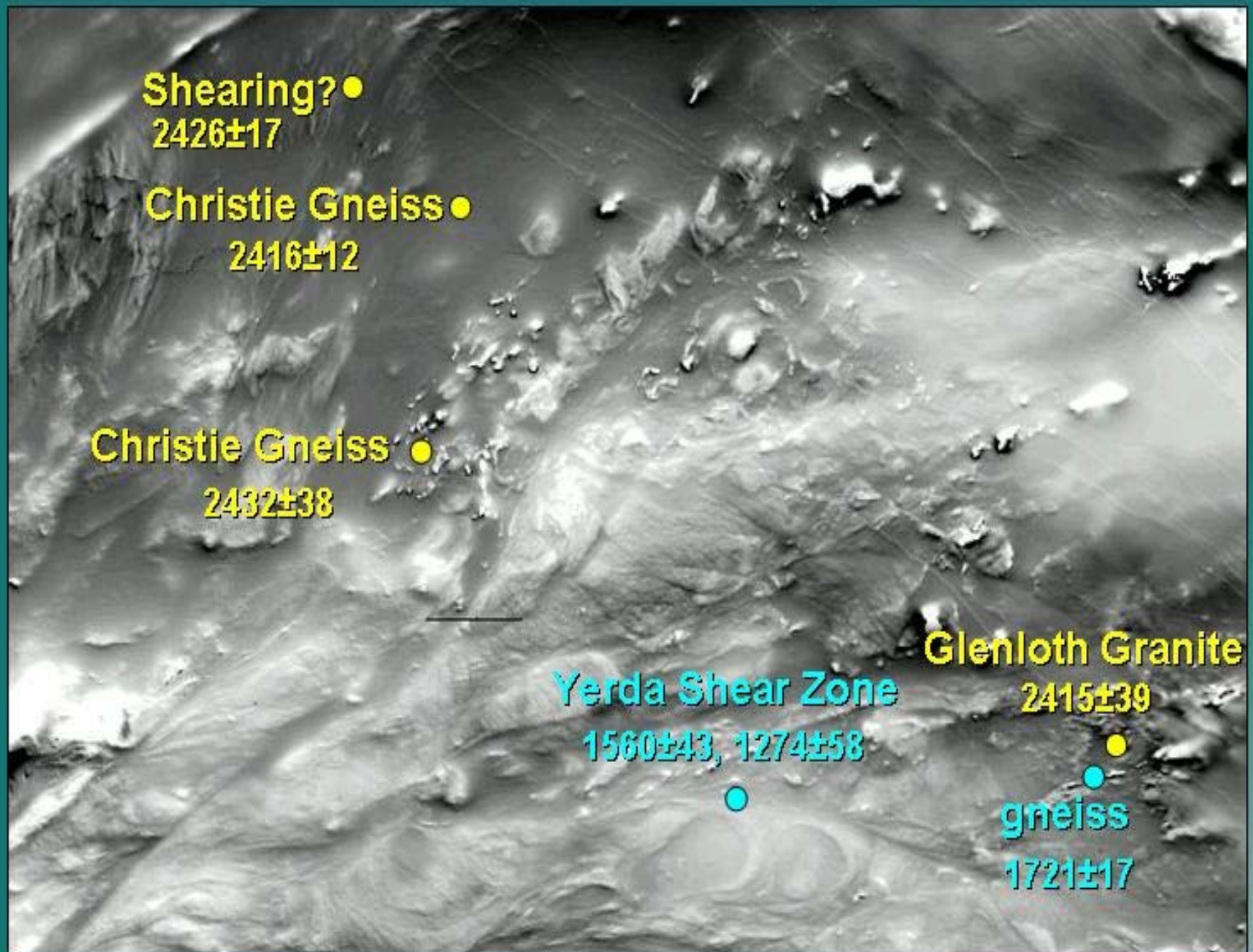
Accurate
Precise
Rapid
Non destructive
In-situ
Cheap



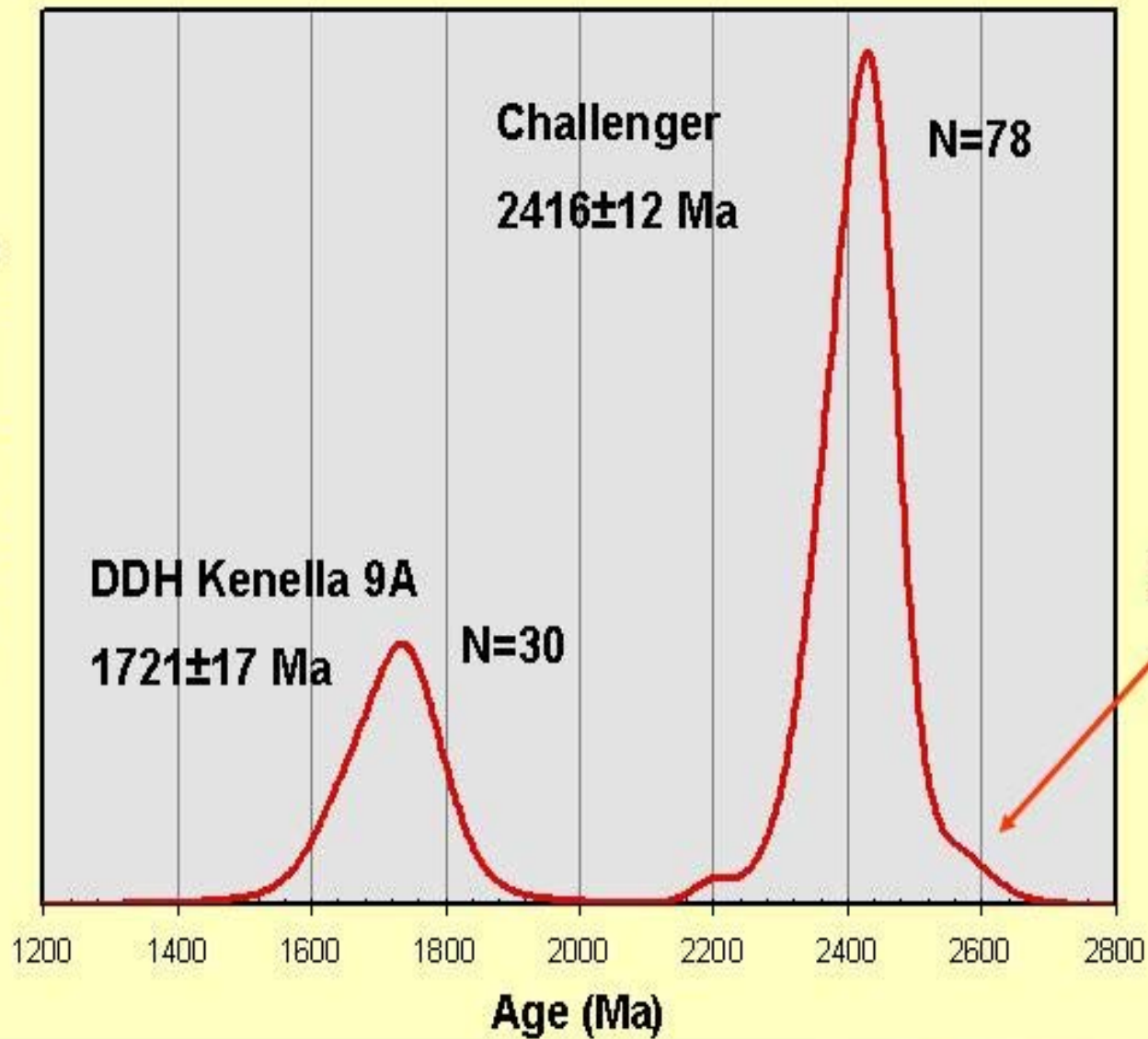
http://gsa.confex.com/gsa/2002AM/finalprogram/session_2953.htm

<http://128.119.45.20/probe/Monazite1.htm>





Relative Probability



2630 Ma?



Some implications for exploration

Shearing at least to ~1450 Ma

Parallel shears are not the same age

Shear-events may have been mineralising events

Arrangement of crustal blocks

Validity of exploration models?



Thank you

