

## Barovian Metamorphism of the Eastern Damara Belt, Namibia

### Contact persons:

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### Context

The Damarien Orogen is a Pan-African aged, over 300km long mobile belt produced by convergence of Congo and the Kalahari cratons. The metamorphic zoning of the orogen has been published, and some new metamorphic work is now being published (Jung et al., 2018).

Nevertheless, no recent metamorphic and structural work is available in the large garnet-biotite± kyanite± staurolite domain located to the east of the Windhoek, where the last metamorphic studies date to the 80'ties. The area of similar metamorphic grade is an area of ca. 50X100km. It is a typical Barrovian metamorphic area, which grades towards the west into a high temperature low pressure terrain. These rocks have been used to suggest high-pressure, subduction-type metamorphism, while the actual data present in the literature does not support this. The purpose is to test establish a solid, modern metamorphic history of the area.

### Objectives and Methods

The proposed work requires at least 1 month of field work (to be conducted in July/August 2020), during which detailed structural data is acquired for the field area. Detailed sampling of the Kuiseb schist will form the basis of thin section studies of the metamorphism and microstructure of the schists. Whole rock XRF analysis, combined with SEM textural analysis and Raman and EMPA mineral analysis will be used to establish the pressure-temperature paths of selected samples using the Gibbs method and pseudosections.

If two Master students are willing to work on this it will be possible to include dating (protolith and sedimentary age; metamorphic age).

### Literature

Cross CB, Diener JFA, Fagereng A (2015) Metamorphic imprint of accretion and ridge subduction in the Pan-African Damara Belt, Namibia. *J metamorphic Geol* 33:633–648. doi: 10.1111/jmg.12139

Gray DR, Foster DA, Meert JG, et al (2008) A Damara orogen perspective on the assembly of southwestern Gondwana. *Geol Soc London Spec Pub* 294:257–278. doi: 10.1144/SP294.14

Jung S, Brandt S, Bast R, et al (2018) Metamorphic petrology of a high- T/low- P granulite terrane (Damara belt, Namibia) - Constraints from pseudosection modelling and high-precision Lu-Hf garnet-whole rock dating. *Journal of Metamorphic Geology* 37:41–69. doi: 10.1111/jmg.12448

1 photo dimension H5.5cm x L8.5cm

WEB sites

### Choice of orientation : (supprimer les orientations qui ne conviendraient pas)

2) Geochemistry, Alpine tectonics, Ore Deposits