



35TH INTERNATIONAL GEOLOGICAL CONGRESS - 2016 NAMAQUA METAMORPHIC PROVINCE FIELD TRIP



Theme:
“GEOLOGY AND ORIGIN OF A
VERY LARGE HOT OROGEN -
THE HIGH-T-LOW-P NAMAQUA
METAMORPHIC PROVINCE”

21-27 August 2016
Pre-conference field trip



35TH INTERNATIONAL GEOLOGICAL CONGRESS
27 AUGUST - 4 SEPTEMBER 2016 | CAPE TOWN,
SOUTH AFRICA

GEOLOGY AND ORIGIN OF A VERY LARGE HOT OROGEN THE HIGH-T-LOW-P NAMAQUA METAMORPHIC PROVINCE

20-27 August 2016 – pre-conference field trip



Geology to be seen

The Namaqua Metamorphic Province is one of the largest high-T low-P terrains on earth covering an area of $> 200.000\text{km}^2$ in the northwestern parts of South Africa and southern Namibia. The origin, chronology and geodynamic setting of this vast Paleo- to Mesoproterozoic (ca. 2.0-1.0 Ga) high-grade terrain are controversial. This fieldtrip aims to provide a regional perspective on the internal architecture, chronological evolution and overall tectonic setting of the mid-crustal terrain along a > 2500 km long loop through the central-western parts of the province.



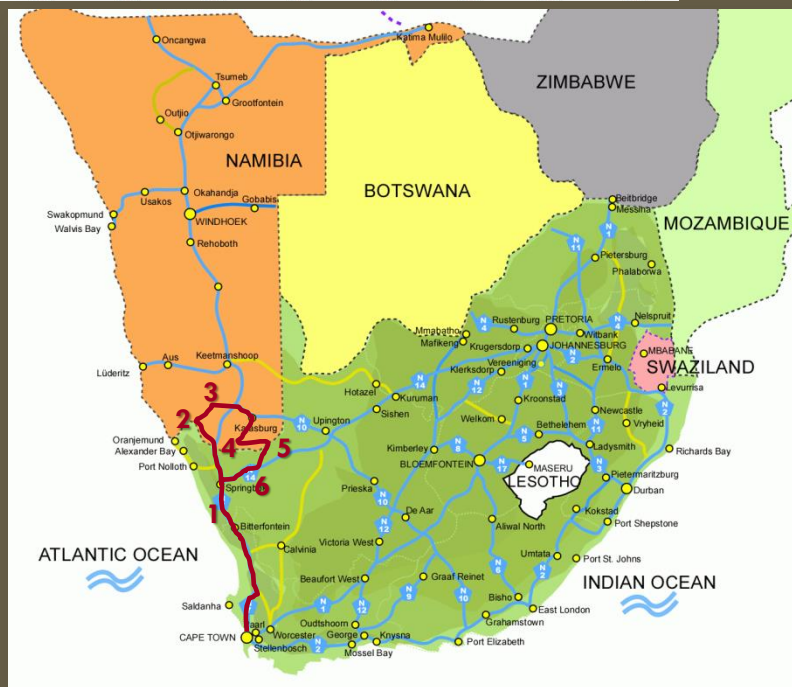
The trip presents recent structural, metamorphic, geochemical and geochronological data generated during a current (2013-2018) mapping campaign spearheaded by the Council for Geoscience. We will visit key sections that illustrate the process of episodic, often melt-lubricated stacking of granulite-facies nappes, the presence of regional-scale under- and intraplated mafic/ultramafic complexes and late-stage continental-scale transcurrent shear zones that mark the final stabilization of Namaqualand around ca. 1.0Ga. We will also examine aspects of the base metal mineralisation in the Okiep Copper District, the polymetallic Aggeneys complex and late-stage pegmatites.



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Route and travel

The trip will take you through the barren, yet spectacular landscapes of northern Namaqualand between the towns of Kliprand and Springbok and during the peak of Namaqualand's flower season. After two days, we will cross the mighty Orange River into Namibia. We will sleep over at the hot springs of Ai Ais and visit the Fish River Canyon. From thereon, we will travel east, deep into the remote parts of southern Namibia and make camp along the banks of the Orange River in the Pofadder Shear Zone. For the last leg of our trip, we will return to South Africa to the Black Mountain Mining District hosted by mega sheath folds, before we return to Cape Town on day 7

Who should participate

Researchers and applied geologists interested in the processes and dynamics of mid- and lower crustal flow, the role of magmas for deformation, the sources and origin of long-lived high-T metamorphic events and mineralising episodes in high-T terrains. Anybody who likes hard-rock geology and the great outdoors.



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Logistics

This is the southern hemisphere's winter. Day time temperatures are likely to be pleasant (20 to $> 30^{\circ}\text{C}$), but night time temperatures may drop to below zero. We will be traveling in off road vehicles and will be camping most of the time, given the remoteness of the region. Rest assured, we provide a cold drink and a taste of African cuisine.

Tents and camping mattresses will be provided but you will need to bring the following personal equipment:

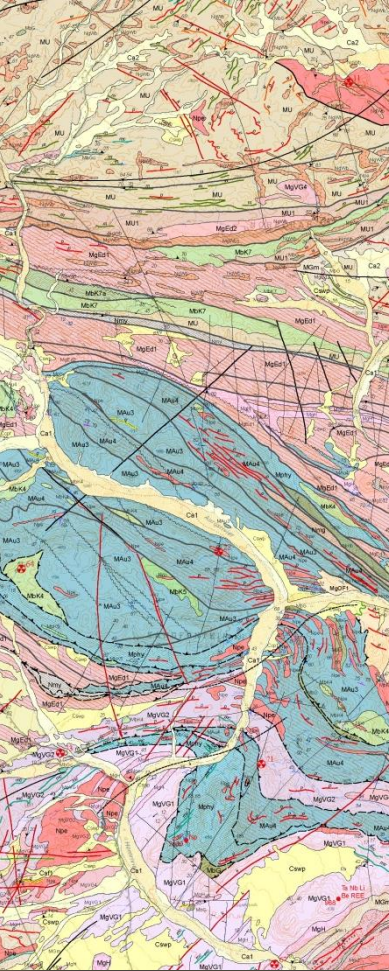
Passport ! (with visa if necessary)	Towel
Hat	Torch
Sunblock	Camera !!
Strong field boots	Pillow
Field clothes	Day ruck sack
Raincoat	Beanie
Jacket/windbreaker/polartec	Spare batteries
Decent sleeping bag	Money (Rands)
Sleeping bag liner (optional)	Spare toilet roll
Toiletries	Plug adaptors
Water bottle	Lunch box
Geological equipment (e.g. GPS, tablet, compass, hammer, notebook)	



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Fieldtrip leaders

- Paul Macey (Council for Geoscience) is a Precambrian mapping geologist that has been working in Namaqualand since 1999 and is project manager to the current regional mapping program in the NMP of southern Namibia. His interests are using modern mapping and research techniques to unravel the geological histories of complex Precambrian terrains, especially if they are located in remote mountains.
- Alex Kisters (Stellenbosch University) is a structural geologist. He has carried out research in the Namaqua Metamorphic Province since the early 1990's. His research interests focus on the geology of high-grade metamorphic terrains, melt migration and granite emplacement and structurally controlled fluid flow and mineralization.



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