

Komatiite - 50th Anniversary Geoheritage Field Trip

Proposed Itinerary: 26-29 September 2019

Kindly note this is a preliminary itinerary and thus subject to change

Trip Sponsors:

- Bushveld Minerals
- GSSA
- 35th IGC Legacy Fund

Trip Leaders

- Prof. Carl Anhaeuser
- Dr. Trevor Pearton
- Prof. Laurence Robb
- Mr. Chris Rippon
- Prof. Morris Viljoen
- Prof. Richard Viljoen

THURSDAY 26 SEPTEMBER

Day Itinerary

- Minibus leaves from Illovo Edge Building, Sandton, Johannesburg at 08:30 and travels via the East Rand on to N12 and N4 to Machadadorp. Turn right at Belfast on the R33 to Carolina and beyond.
- Well preserved komatiite flows with interlayered sediments in the Schapenburg schist belt on the Carolina-Oshoek Road.
- Short stop on Heervenveen granite batholith.
- Visit Stolzburg ultramafic complex with layers of serpentinized dunite hosting chrysotile asbestos, interlayered with pyroxenite.

Evening Itinerary

- Presentation on komatiites, primitive life and early granitic crustal development in the Barberton region at the Cradle of Life Conference Centre.
- Overnight at Cradle of Life Centre.

FRIDAY 27 SEPTEMBER

Day Itinerary

- Middle Marker and overlying, pillowed, low potassium tholeiitic lavas at base of Hoogenoeg formation type section.
- Komati formation type section including evidence for extrusion of komatiite lava.
- Pillowed Komatiitic basalt outcrops in type section.
- String beef spinifex in Badplaas type basaltic komatiite.
- "Dog tooth" outcrops of Geluk type komatiitic basalts.
- Tjakastad viewpoint situated on the Theespruit formation. Overview of regional structure and stratigraphy including view of Kromberg fold.
- Pillows in xenolith in tonalitic granite and contact phenomena.
- Theeboom ribbon migmatite and contact relationships.

- Quarry on trondjhemite gneiss which contains amphibolite xenoliths.
- Xenolith and foliation in granite on road to Steynsdorp valley.
- Hoogenoeg agglomerate adjacent to road to Steynsdorp valley.
- Dalmein homogenous porphyritic granite pluton on road to Steynsdorp valley.
- Middle Marker exposure in Fullerton Creek and control of gold mineralisation above Middle Marker in the old Steynsdorp goldfield.
- Gold mine in competent albitite body as well as nearby Steynsdorp cemetery.
- Bushman paintings in overhang in albitite body.
- Umphakatsi peace Ecovillage in Steynsdorp valley.

Evening Itinerary

- Lecture on komatiites and mineralization.
- Overnight at Cradle of Life Centre.

SATURDAY 28 SEPTEMBER

Day Itinerary

- Travel via Nelshoogte to Barberton.
- Visit local mine and carbonated shear zone in layered komatiitic complexes and flows.
- Visit new geology and mining museums in old Impala Hotel and opposite Barberton Museum.
- Highlights of the upper-sedimentary formations of the Barberton belt along first part of the Makonjwa trail on the R40 road to Barberton, time permitting.
- Take road to Eureka City for short visit.
- View Sheba fault and carbonate altered komatiite with spinifex texture.
- Travel via Sheba Mine to Diggers Rest.

Evening Itinerary

- Presentation focussing on geoheritage and geotourism in promoting the Barberton World Heritage Site.
- Overnight at Diggers Retreat Guest House.

SUNDAY 29 SEPTEMBER

Day Itinerary

- Return to Johannesburg via Kaapmuiden and Crocodilepoort.
- Ship Hill layered ultramafic body at (Pettigrews Neck) with altered dunite containing secondary magnesite veining.
- Nelspruit granite and migmatite and late stage Mpangeni granite pluton.
- Exposures along the N4.