

35TH INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 4 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA



PRE 8

Craton Traverse: A transect through ~2.7Ga of South African history

Field Trip Leader: Herman van Niekerk



This field trip is a great traverse that covers a large part of the geology of South Africa, all the way from the Neoproterozoic Witwatersrand Supergroup to the Paleozoic to Early Mesozoic Cape- and Karoo Supergroups. It will take the participant through some of the spectacular scenery of South Africa, which includes, Bushmanland, the Richtersveld, Namaqualand and the Western Cape.

The structural evolution of the geology of South Africa and the geological successions that make up the geology, as we see it today, is explored and slowly pieced together, mostly in geochronological order.

Other aspects that will be investigated and explored include the various tectonic models for the assembly of the geology of southern Africa as well as the landscape evolution that affected this part of the African continent since the breakup of Gondwana (~180Ma ago) and how this affects and controls the distribution of iron, manganese and alluvial diamond deposits in South Africa. Some of the important mineral deposits in South Africa, as well as their origin, will also be explored.

Field Trip Leader: Herman van Niekerk

Start: Johannesburg

End: Cape Town

Dates: 11 days, Wednesday 17th to Saturday 27th August 2016

ITINERARY

DATE	ROUTING
17 – 19 August 2016	Kuruman
19 - 21 August 2016	Upington
21 – 22 August 2016	Aggeney/Pella
22 – 23 August 2016	Springbok
23 -24 August 2016	Violdrif
24 – 25 August 2016	Kleinzee
25 – 26 August 2016	Lamberts Bay
26 – 27 August 2016	Ceres

Meal Key

BB Bed and Breakfast

DBB Dinner, Bed and Breakfast

NOTES

All services quoted are subject to availability at the time of booking.

Vehicle sizes are based on 15 seater vehicles and are subject to road conditions.

Vehicle Size:

8 – 13 person range: 1 x 15 seater vehicle or similar

14 – 16 person range: 2 x 15 seater vehicles or similar

Vehicle costs are based on an average of 400km per day.

All excursions/sightseeing listed are time and weather permitting on the day of travel.

Day 1

Johannesburg to Kuruman (approximately 600km)

Kaapvaal Craton Cover Successions

Locality 1: ~2970Ma Banded Iron Formation of the Witwatersrand Supergroup

Locality 2: Conglomerates of the ~2700Ma Ventersdorp Group

Locality 3: View of the Ghaap Plateau.

Lunch (excluding beverages)

Dinner (excluding beverages)

Overnight: Red Sands Lodge or similar on a bed and breakfast basis

Day 2:

Kuruman (approximately 200km)

(Already staying at Kuruman)

Mine visits (Sishen type iron ore and manganese mine in the Kalahari Manganese Field)

Lunch (excluding beverages)

Dinner (excluding beverages)

Overnight: Red Sands Lodge or similar on a bed and breakfast basis

Day 3:

Kuruman to Upington (approximately 350km)

Western Margin of the Kaapvaal Craton

Locality 1: The 2.5 to 2.3Ga carbonate succession of the Gamohaam Formation (at Kuruman Kop) of the Campbellrand Subgroup of the Transvaal Supergroup in Griqualand West.

Locality 2: Graben in Transvaal Supergroup.

Locality 3: Manganese deposits associated with the Hotazel Iron Formation of the Postmasburg Group (Kalahari Manganese Field) of the Transvaal Supergroup in Griqualand West.

Locality 4: Cenozoic Kieslghur Deposit (Kalahari Manganese Field).

Giant stromatolites in the Gamohaam Formation as can be seen at Kuruman Kop.

Lunch (excluding beverages)

Dinner (excluding beverages)

Overnight: Protea Hotel Upington or similar on a bed and breakfast basis

Day 4:

Locality 1: Discussion of the ~1290 to 1172Ma Blackridge Thrust.

Locality 2: Sishen Iron Ore deposits (road cut).

Locality 3: Lucknow Formation of the 2.65-2.05Ga Neoproterozoic Palaeoproterozoic Transvaal Supergroup and the Neylan Conglomerate of the Olifantshoek Group of the Keis Supergroup.

Locality 4: ~1927Ma Hartley volcanics of the Keis Supergroup.

Locality 5: ~Sediments of the ~1900 to ~1290Ma Keis Supergroup.

Locality 6: ~1290Ma Wilgenhoutsdrif Group.

Locality 7: ~Sediments of the ~1172Ma Koras Group.

Lunch (excluding beverages)

Dinner (excluding beverages)

Overnight: Protea Hotel Uppington or similar on a bed and breakfast basis

Day 5:

Uppington to Aggeneys/Pella (approximately 350km)

Transect of the Namaqua Front

Locality 1: Migmatites of the ~1.24Ga to 1.3Ga Aerechap Group.

Locality 2: Charnockites of the 1078 Ma Friersdale Formation.

Locality 3: Quartzites of the ~116Ma Geodehoop Formation of the Korannaland Sequence of the Bushmanland Terrance.

Locality 4: ~1166Ma Pink Gneiss of the Kokerberg Formation of the Bushmanland Terrane.

Lunch (excluding beverages)

Dinner (excluding beverages)

Note:

There are mainly guest houses in Aggeneys so group would be split as there is no single hotel in this area.

Overnight: Various properties around Aggeneys/Pella (all meals at close by restaurant)

Day 6:**Bushmanland Succession**

Traverse 1: The Mesoproterozoic Bushmanland Group at Gamsberg (a world class Mesoproterozoic Broken Hill-type Gamsberg Pb-Zn deposit) or Bigh Syncline, looking at the Bushmanland Succession.

Breakfast (excluding beverages) at close by restaurant in Aggeneys

Lunch (excluding beverages)

Dinner (excluding beverages)

After being in Aggeneys, transfer onward to Springbok to overnight (approximately 1hr 48 min) .

Overnight: Kleinplasia Gastehuis or similar (located in Springbok) on a bed and breakfast basis

Day 7:**Southern Namaqualand (Bushmanland) – Richtersveld Transect**

- Locality 1: First official min in South Africa 1859 (Springbok Cu-district).
Locality 2: Van Der Stel Monument (Blue Mine) 1685 (Springbok Cu-District).
Locality 3: Metaquartzites of the Khurisberg Subgroup of the Bushmanland Subgroup.
Locality 4: Old smelter stack and beam pump at Okiep (Springbok Cu-District).
Locality 5: Orbicular diorite
Locality 6: ~1212Ma Nababeb Gneiss of the Little Namaqua Suite.
Locality 7: ~1058Ma Rietberg Granite of the Spektakel Suite.
Locality 8: ~1822Ma Gneisses of the Gladkop Suite.

Lunch (excluding beverages)**Dinner (excluding beverages)****Overnight: Vioolsdrif Felix Unite Provenance Camp or similar on a bed and breakfast basis****Day 8:**

Kleinzee VIA SPRINGBOK again (approximately 400km) – Namaqualand – Gariep – Nama Transect.

Gariep – Nama Transect.

- Locality 1: Carbonates of the Huns Member of the Schwartzrand Subgroup of the ~550Ma Nama Group.
Locality 2: Relationship between the ~1.9 to ~1.8Ga granitoids of the Vioolsdrif Suite and Quartzites of the ~550Ma Nama Group.
Locality 3: Relationship between the volcanoclastics and andesitic rocks of the V2Ga Orange River Group and the V1.9 to ~1.8Ga granitoids of the Vioolsdrif Suite.
Locality 4: Geology of the Pan – African Gariep Belt. Home to the only hippos in the Karoo.

Lunch (excluding beverages)**Dinner (excluding beverages)****Overnight: Die Houthoop or similar on a bed and breakfast basis****Day 9:**

Alluvial diamond mining and environmental rehabilitation at the alluvial and marine mining areas along the west coast of South Africa.

Lunch (excluding beverages)**Dinner (excluding beverages)****Overnight: Protea Hotel Lamberts Bay or similar on a bed and breakfast basis****Day 10 :** Lamberts Bay to Ceres**Lunch (excluding beverages)****Dinner (excluding beverages)****Overnight: Four Seasons Guest House or similar on bed and breakfast basis****Day 11:** Ceres to Cape Town

Drive to Cape Town.

Delegates check into congress hotels.

Minimum Persons 8

Maximum Persons 16

COST INCLUDES:

Based on Standard accommodation

- 2 nights' accommodation at Red Sands Lodge or similar on a BB basis (Kuruman)
- 2 nights' accommodation at Protea Hotel Upington or similar on a BB basis (Upington)
- 1 night accommodation at variety of guesthouse around Aggeney/Pella or similar
- 1 night accommodation at Kleinplasia Gastehuis or similar on a BB basis (Springbok)
- 1 night accommodation at Vioolsdrift Felix Unite Provenance Camp or similar on a BB basis (Vioolsdrift)
- 1 night accommodation at Die Houthoop or similar on a BB basis (Kleinsee)
- 1 night accommodation at Protea Hotel Lamberts Bay on a BB basis ((Lamberts Bay)
- 1 night accommodation at Four Seasons Guest House or similar on a BB basis (Ceres)
- 1 x breakfast (in Aggeney)
- 10 x lunch (excluding beverages)
- 10 x dinner (excluding beverages)
- Transport in private touring vehicles
- Local English speaking driver on all transfers
- Driver meals & accommodation where necessary
- Vehicle E-toll fees and Toll fees

COST EXCLUDES:

- All airfares, air reservations and airport taxes
- All other accommodation
- Entrance fees, conservation fees and park fees to en-route
- All other meals
- All other transport
- All sightseeing
- Personal expenses such as tips for meals, gratuities for drivers, all alcoholic and other beverages, telephone calls and laundry, etc...
- Any other services not mentioned above