

35TH INTERNATIONAL GEOLOGICAL CONGRESS

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



POST 2

Eastern Bushveld, Mpumalanga Drakensberg Escarpment and Kruger National Park

TRIP LEADER: Morris Viljoen



ITINERARY

This 7 day excursion is designed to provide an overview of the geological and geomorphological superlatives of three world famous regions of South Africa.

The first part of the excursion is focussed on the well exposed northeastern limb of the Bushveld Complex with its spectacular layered igneous rock assemblage which includes pyroxenite, norite, anorthosite and gabbro. These rocks host layers of chromitite, platiniferous pyroxenite and vanadiferous titanomagnetites. The layers are traceable for hundreds of kilometres around the Bushveld Complex and contain the world's largest reserves of chromium, platinum and vanadium. Exposures of all of the above together with an exposure of one of the famous hortonolite dunite pipes on which the first platinum mining took place in the late nineteen twenties, will be viewed.

The second part of the excursion traverses the eastern highlands and eastern escarpment edge. Quartzite and shale horizons of the Pretoria group, intruded by numerous diabase sills, form the highlands, while resistant, quartzite-dominated formations of the Wolkberg and Black Reef formations form the scenic escarpment edge. These formations are overlain by dolomite with well developed stromatolite structures in many places. Several tourist caves with dripstone formations, calcareous tuffa deposits, both active and extinct, are characteristic of the dolomite terrain. Headward erosion of several rivers including, from south to north the Crocodile, Sabie and Blyde rivers and their tributaries have incised the escarpment region by the process of headward erosion. This has given rise to a range of scenic waterfalls at nick points on harder rock formations. Potholes are spectacularly developed and have clearly been a major force in the incision of hard rock formations to initiate gorge formation as in the case of Bourke's Luck potholes and the spectacular Blyde River Canyon.

The third part of this trip visits the central and southern portions of the world famous Kruger National Park which will be traversed and the major rock formations and geomorphological features examined at a number of localities. Rock types in the Archaean basement granitic terrain range from granite inselbergs in southern Kruger, granitic migmatites, diabase dykes and the Timbavati gabbro intrusion. Karoo basaltic lava plains underlie much of eastern Kruger and are overlain by rhyolite, the latter forming the Lebombo range along the Mozambique border. As part of the drive through Kruger the distinctive soil types and ecozones developed on different rock types will be highlighted. As part of the above the chances of seeing the "Big Five" comprising elephant, rhino, lion, buffalo and leopard, together with a large range of other animals in this unique national park, are excellent. A feature of the excursion will be the opportunity to do short geological traverses from the vehicles.

Field Trip Leader: Morris Viljoen

Start: Sandton

End: Johannesburg

Dates: 7 days, Tuesday 6th to Monday 12th September 2016

Excursion starts in Sandton Johannesburg on 6th. Sept., departing at 8:30am

Excursion returns via OR. Tambo International Airport in the late afternoon for participants wishing to depart on the evening of the 12th. Otherwise ends at Johannesburg pickup point in Sandton.

Transport in 48-seater coach.

Part One-the Eastern Bushveld Complex

The first part of the excursion is focussed on the well exposed north eastern limb of the Bushveld Complex with its spectacular layered igneous rock assemblage including harzburgite, pyroxenite, norite, anorthosite gabbro and diorite. These rocks host layers of chromitite, platiniferous pyroxenite and vanadiferous titanomagnetite. Many of the layers are traceable for over 200 kilometres around the Bushveld Complex and they contain the world's largest reserves of chromium, platinum and vanadium. Exposures of all the above together with an exposure of one of the famous hortonolite dunite pipes on which the first platinum mining took place in the late nineteen twenties, will be visited.

Date	Day	Route and Main Geological Stops	Overnight
6 th Sept	Tues	Johannesburg-Middelburg-Stofberg-Steelpoort Burgersfort. <ul style="list-style-type: none"> • Gabbro-Main Zone-Rich Main Magnetite • Magnetite Layers-Upper Zone • UGI chromitite layer-National Monument site, Dwars River • 	Gethlani Lodge near Burgersfort-situated on a game farm in bird- rich indigenous forest.
7 th Sept	Wed	Burgersfort Region <ul style="list-style-type: none"> • Kennedys Vale V-bearing magnetite pipe • Mooihoek / Onverwacht platiniferous dunite pipes • UG2 platiniferous chromitite and UG3 Chromitite layers • Merensky Reef, platiniferous pyroxenite layers. • Serpentinised harzburgite with secondary magnesite veins in contact with pyroxenite of Lower Zone 	Hannah Lodge Game lodge offering a true Bushveld experience

Part Two-the Eastern Escarpment

The second part of the excursion traverses the eastern highlands and eastern escarpment edge. Quartzite and shale horizons of the Pretoria group, intruded by numerous diabase sills, form the highlands, while resistant, quartzite-dominated formations, of the Wolkberg and Black Reef formations are responsible for the scenic grandeur of the escarpment edge. These formations are overlain by dolomite with well developed stromatolite structures in many places. Several tourist caves with dripstone formations occur in the area while calcareous tufa deposits, both active and extinct, are characteristic of the dolomite terrain. Headward erosion by east flowing rivers has given rise to a range of scenic waterfalls at nick points on harder rock formations. Potholes are spectacularly developed and have clearly been a major force in the incision of hard rock formations to initiate gorge formations as in the case of Bourke's Luck potholes and the spectacular Blyde River Canyon.

Date	Day	Route and Main Geological Stops	Overnight
8 th Sept	Thurs	Burgersfort Ohrigstad-Pilgrims Rest-Graskop Blydepoort. <ul style="list-style-type: none"> • Andalusite hornfels. Bushveld thermal aureole • Robbers pass-Transvaal shale and quartzite • Pilgrims rest historic gold mining town • Graskop /Mac mac waterfalls-Escarpment 	Forever resort, Blyde canyon. Situated on the edge of the canyon overlooking the gorge

		edge. <ul style="list-style-type: none"> • Gods Window and Pinnacle-Escarpment edge • Bourkes Luck potholes • World's End-Blyde river canyon and other viewpoints • Contact of quartzite and dolomite 	
9 th Sept	Frid	Abel Erasmus pass- Blyde Canyon-Hoedspruit – Olifants Camp. <ul style="list-style-type: none"> • Dolomite and chert • Calcareous tuffa waterfalls • Black Reef and Wolkberg sediments on Abel Erasmus pass and Strydom tunnel • Greenstone (amphibolite) in granitic gneiss • Archean Basement terrain • Mica- pegmatites • Phalaborwa gate (KNP) • Masorini- syenite hill and archaeological site • Shilawuri hill- Timbavati gabbro • Nhlanganini Stream - Clarens sandstone and contact with overlying basaltic lava • Granophyre dykes intruding basalt 	Olifants Rest Camp

Part 3 Kruger National Park

The central and southern portions of the world famous Kruger National Park, will be traversed and the major rock informations and geomorphological features examined at a number of localities. Rock types of the Archaean basement granitic terrain of western Kruger range from granitic inselbergs of southern Kruger, granitic migmatites, diabase dykes and the Timbavati gabbro intrusion. Karoo basaltic lava plains underlie much of eastern Kruger and are overlain by rhyolite, the latter forming the Lebombo range along the Mozambique border. As part of the drive through Kruger, the landforms will be highlighted together with the distinctive soil types and ecozones developed on different rock types. The chances of seeing the big five of Elephant, Rhino, Lion, Buffalo and Leopard, together with a large range of other animals in this unique national park, are excellent. A feature of the excursion will be the opportunity to do short geological traverses from the vehicle (s).

10 th Sept	Saturday	Olifants-Satara -Nwanetsi-Pretoriuskop <ul style="list-style-type: none"> • Geological traverse across Karoo basalt lava flows – Olifants mini gorge plus game drive. (Optional extra) • Lebombo rhyolite and granophyre • Spheroidal granite boulders, Kruger tablets • Diabase dyke and granitic migmatite – Sabie River and Sand River causeways • Granitic inselbergs of southwest Kruger 	Pretoriuskop Rest Camp
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11 th Sept	Sunday	Skukuza –Lower Sabie- Berg-en-Dal-Malelane <ul style="list-style-type: none"> • Granitic monoliths • Timbavati gabbro • Potassic migmatite • Greenstone • 	Berg-en-Dal Rest Camp
12 th .	Monday	Berg-en-Dal-Nelspruit –Belfast-Middelburg OR Tambo airport-Johannesburg <ul style="list-style-type: none"> • Kaapmuiden layered ultramafic body • Komatiite Greenstone • Mpangeni late stage granite pluton • Nelspruit potassic migmatite • Quartzite of escarpment edge – Waterval Boven 	Johannesburg

In : 06-Sept-16 Out : 07-Sept-16	Overnight at Getlane Lodge on BB Standard Room basis (or similar)
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In : 07-Sep-16 Out : 08-Sep-16	Overnight at Hannah Lodge on DBB Standard Room basis (or similar)
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In : 08-Sep-16 Out : 09-Sep-16	Overnight at Forever Resorts Blyde Canyon on BB Standard Room basis (or similar)
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In : 09-Sep-16 Out : 10-Sep-16	Overnight at Olifants Rest Camp on RO Bungalow (BD2) basis (or similar)
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In : 10-Sep-16 Out : 11-Sep-16	Overnight at Pretoriuskop Rest Camp (TT) on RO Bungalow, Max 2 pax (BD2) basis (or similar)
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In : 11-Sep-16 Out : 12-Sep-16	Overnight at Berg-en-Dal Rest Camp (TT) on RO Bungalow, Max 3 pax (BD3) basis (or similar)
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In : 12-Sep-16 Out : 13-Sep-16	Overnight at Peermont Mondior on BB Standard Classic Room basis (or similar)
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Vehicles:

This quote is based on 1 x 48-seater coach (or similar) depending on availability at the time of confirmation.

Meal Key

BB	Bed and Breakfast
DBB	Dinner, Bed and Breakfast
DBB+	Dinner, Bed and Breakfast plus one additional activity
DBB++	Dinner, Bed and Breakfast plus two additional activities
FB	Full Board (includes 3 meals per day)
FB+	Full Board (includes 3 meals per day) plus one additional service
FB++	Full Board (includes 3 meals per day) plus two additional services
FI	Fully Inclusive (includes all meals and local drinks), plus all activities

Minimum Persons 18
Maximum Persons 44

COST INCLUDES:

- 1 Night's accommodation at Gethlane Lodge on a BB basis
- 1 Night's accommodation at Hannah Lodge on a DBB basis
- 1 Night's accommodation at Forever Resort Blyde River Canyon on a BB basis
- 1 Night's accommodation at Olifants Rest Camp on a RO basis
- 1 Night's accommodation at Pretoriuskop Rest Camp on a RO basis
- 1 Night's accommodation at Berg-en-Dal Rest Camp on a RO basis
- 1 Night's accommodation at Peermont Mondior on BB Standard Classic room basis
- 3 x breakfast
- 7 x lunch
- 7 x dinner
- Local English speaking driver on all transfers
- Driver meals & accommodation where necessary
- Entrance fees to sightseeing venues as stated in the itinerary above
- Porterage at airports and hotels (1 x standard piece of luggage per person)
- Management Fee

COST EXCLUDES:

- All airfares, air reservations and airport taxes
- All other accommodation
- All other meals
- All other transport
- All other sightseeing
- Personal expenses such as tips for meals, gratuities for guides & drivers, all alcoholic and other beverages, telephone calls and laundry
- Any other services not mentioned above