



The Honours cohort for the SU Earth Sciences 2022 Honours program.

11 and 15 January 2023. These are still early days, but the LOC is fully committed to bringing together an exciting and action-packed programme. Please keep your eyes open for various GSSA posts and

mail-drops, which will detail additional information about the event as the planning progresses.

Bjorn von der Heyden

branches & divisions

Northern Cape Branch

“In a world where nothing ever stays the same, we all need to change, evolve, succeed... and change again”.

That is what we have done, together. The Northern Cape Branch, through Covid19 Lockdown, focused on maintaining stable branch function and momentum gained since the reconstitution in 2019. Through this time, the branch has seen success, building from strength to strength. From the event at Red Sands, long before the Covid19 outbreak, meeting atop of Rhenosterkop hill, and recently being hosted by Orion Minerals in Copperton while the committee finalised 2022 major events and milestones. All these events highlight our commitment and mark our collective intention of creating a social venue for the group of individuals interested in the sustainability of the Northern Cape a heart-felt reality.

Indeed, change has come again. This time in the form of a new committee, which is a kaleidoscopic union of passionate, skilled and playful leaders. These leaders take the branch forward to the next milestones. Together, we'll continue to drive the success of the Branch and the interest of the stakeholders. Over the page are the faces of the



members trusted to lead the branch. Of course, none of this would be possible, as always, without the sponsors. Join us in making sure that we have an even better 2022.

The committee wishes to express gratitude to Orion Minerals PCZM for hosting us for the first 2022 strategy session in Copperton.

2022 Upcoming Events

Look out for the following events on social media and other GSSA communication platforms for the 2022 calendar:

- **Wild Wild West: West Coast Diamond Deposits – 1st to 2nd April 2022,**
- Collaboration events with NC SAIMM branch – TBA,
- Structural Geology event – TBA,
- Membership survey on local skills gap assessment – TBA,
- Online Talks – TBA.

Masibulele Zintwana



Committee members

Masibulele Zintwana - Anglo Chairperson	Loni Gallant - Orion Vice-Chairperson	Joshua Kilani - RES Secretary	Onwaba Semane - Afrimat Treasurer	Francois Stassen - Master Drilling Deputy Treasurer
Rounelda Cloete - Alexkor Communications	Darryl Bennett - GW Minerals Member	Deon du Plessis - Earthlab Member	Elmar Human - Minrom Member	Kogi Kovindsamy - Consulting Member
Palesa Boikanyo - South32 Member	Tricia Scott - Anglo Member	Vince Schaper - MaxGeo Member	Deon Bowers - Alexkor Member	2022 Event Sponsor AFRIMAT 'We would like to thank all our previous annual and event sponsors for their support.'

2022 Annual Sponsors



Strategy session pictures



University of Venda Branch

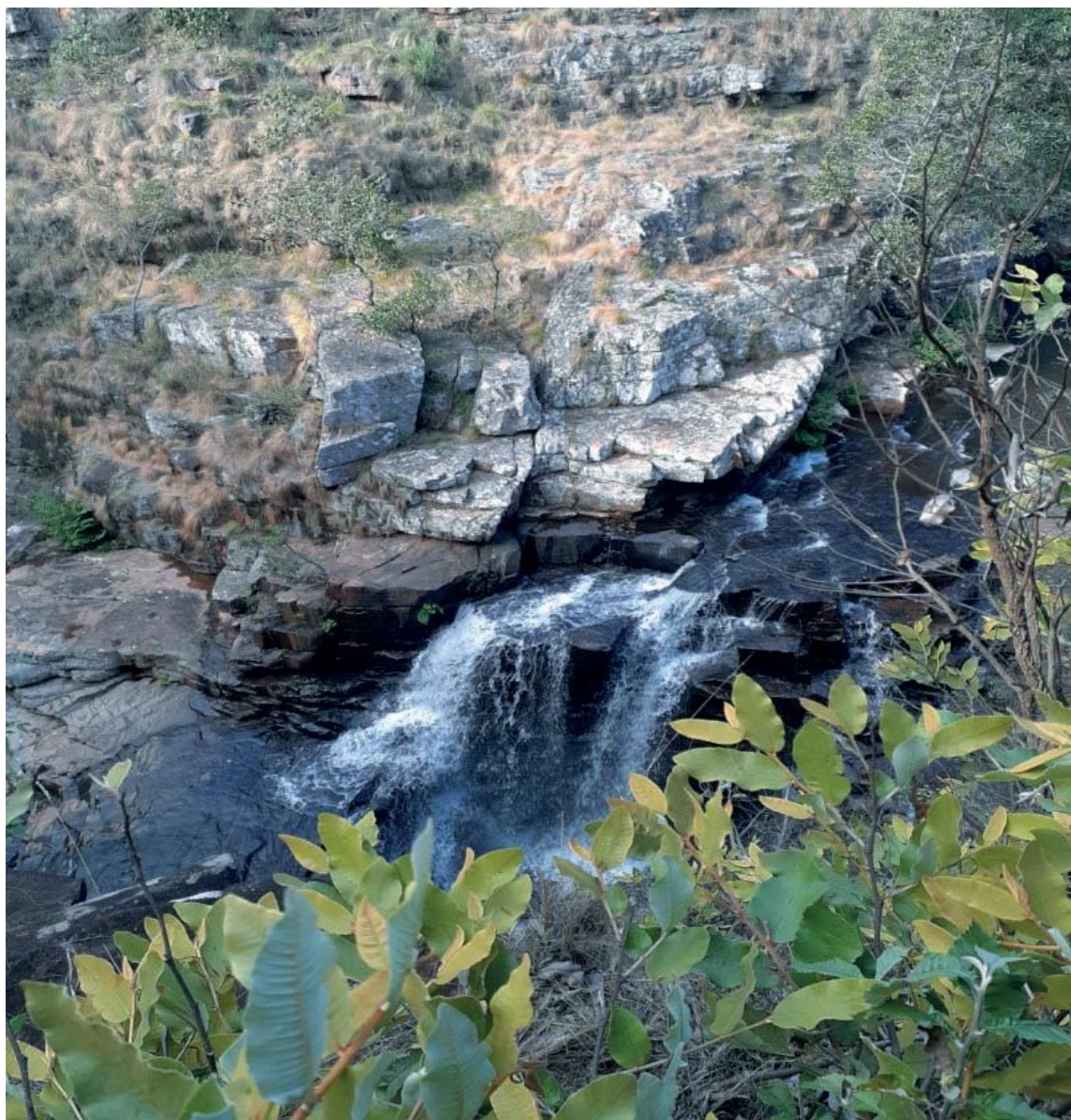
GSSA UNIVEN BRANCH 2022 ANNUAL PLAN

Activities	Venue	Dates
Welcome function	Makapans valley or Mapungubwe	February (1st–2nd week)
Geo-talk (Coal Mining & Future of Coal)	Microsoft Teams or University of Venda	20 April
Geo-talk (Diamond Exploration)	Microsoft Teams or University of Venda	16 July
Geological excursions	Microsoft Teams or University of Venda	25 August
Mine visits	To be announced	15 September
Geo-vibe day	Phiphidi waterfalls	November

For further information on any of these events, please contact **Nduvho Mulaudzi** (Branch Chairperson) at mulaudzinduvho9@gmail.com.



BRANCH NEWS



Vista looking north at the folded quartzites of Timeball Hill Formation that forms the innermost layer of the majestic Katkloof anticline on the north-eastern margin of the BIC.



Young Geoscience Professionals Division

We are a new division of the GSSA dedicated to connecting and supporting young GSSA members (< 35 years old) including students and young industry professionals. Our goal is to help geoscience members negotiate unique challenges faced as young professionals. We also aim to highlight and promote the interests of young professional members in the GSSA.

Our mission:

- To foster networking and boost connectivity among young members.
- To help introduce the GSSA to students working towards and aspiring to be geoscience professionals.

- To highlight the benefits of being a GSSA member.
- To promote informative GSSA content to help smooth the transition from academia to industry.
- To promote formal and informal mentorship programs among young geoscientists.
- To help foster a sense of community among young geoscientists.

If you are passionate about geosciences as a student or young industry professional, then we are the division for you! Let us know what you would like to see in the GSSA as a young geoscience professional. Feel free to contact us at info@gssa.org.za.

Robyn Ormond

Western Cape Branch

Geodysey, the mobile app: Putting the geology of South Africa in the palm of your hand

Speak to any South African geoscientist and they can (and most certainly will, enthusiastically) chew your ears off for hours about the bountiful and important geological heritage of our country. This can be done in a variety of “geological dialects” based on the said geoscientist’s interests or specialisation and can range from its mineral and mining wealth, palaeontology, landscapes, historical pioneers of geoscience, favourite sites to eat a sarmie or a sundowner at, and the list goes on. If by chance you weren’t aware, the geology of South Africa is important and truly unique. It’s “kind of a big thing” I tell my family and (few) non-geoscientist friends after I disappointingly conclude my lyrical waxing (or stark raving madness) for the umpteenth time at the importance of a particular geosite. Of course it always looks like an innocuous, or on the off-chance a “pretty”, rock outcrop to them and never the transgressive shoreface deposit with fossils so delicately preserved that one “can see” the 400-million-year old sea floor (come on, mom...). I am a bad tour-guide...

What I so passionately struggle at doing, and I know I am not alone, is to convey just how abundantly blessed we are to have rocks in our backyard that speak to a unique and nearly unbroken 3.6 Gyr-long story of Earth history from a uniquely and proudly South African perspective. Depending where you are in South Africa, you could be standing on among the earliest continental crust in the Johannesburg Dome, be caught up in the root of an ancient orogenic front in the Limpopo Belt, wading among the earliest microbial platforms, reefs and tidal flats in Barberton and Pongola, or staring down your very ancient pre-mammalian ancestors (where did we go wrong...) in the Karoo, or having ring-side seats to watch the literal dawn of humanity take place in the Cradle of Humankind. Other than these scientifically important sites, there are those that are just breath-taking marvels sculpted by eons of geological processes: Table Mountain, Cederberg, Oribi Gorge, Hole in the Wall, Augrabies Falls, to name just a few. The role of mining in South Africa, for better or worse, is insurmountable in the foundation of industry, the development of our economy and of the many cities and towns that literally grew up around these sites of mineral extraction, metallurgy and beneficiation. These too are geosites that speak to



our geological heritage. Barberton, Johannesburg, the Witwatersrand, Kimberley, Hotazel, Okiep, Vanderbijlpark, the East Rand, all owe their success directly to the backbone of mining and industry in the modern day. At the same time, archaeological sites like Mapungubwe, Thulamela, Phalaborwa too speak to a deep-seated pre-colonial knowledge of South Africa's natural mineral wealth for millennia. Shucks, I haven't even mentioned Vredefort! The largest (and oldest, like *properly* old) asteroid impact exposed at Earth's surface! I mean, come on, that alone can't be topped! There is a reason why there isn't a geological edition of Top Trumps! South Africa simply holds all the cards.

To the uninitiated it must seem rather odd (comical more likely) to see geologists professing their teary-eyed admiration for "rocks". An outsider looking in probably sees a bunch of dishevelled, poorly dressed people standing at an outcrop of rock (beer in hand, notebook in the other, camera around the neck, hammer holstered) ranting and raving about something in that rock that speaks so deeply to them. I guess the natural reaction of an outsider might be something along the lines of "these guys must be mad...". Rocks literally speak to us and the stories they tell "ground us" (pun intended) in some way by giving us a connection and understanding with the Earth and (by extension) the Universe. What we don't understand is that we are useless storytellers who can't convey just how wonderful and fortunate we are to be alive and in a country like South Africa.

And in this time of being alive we now have access to modern technology to help us to do just that! We at the GSSA Western Cape Branch in conjunction with the Western Cape geoscience community and a local mobile app developer, Forge SA, have developed *Geodyssey*, a geoheritage mobile app freely available on both iOS and Android. The app works in an ESRI-driven ecosystem, meaning that it can display any data provided that it is georeferenced. Further to this, these data can be linked to georelational databases and hyperlinks

and thus multiple datasets and maps can be displayed and queried in the app. *Geodyssey* can also be displayed as an interactive webmap, as on the GSSA Western Cape branch website: <https://www.gssawc.org.za/education>. Starting with the Western Cape, geosites of interest (viewpoints, outcrops, mountain passes, old mines, museums, geosites) have been identified and geospatially referenced. Each geosite has its own linked attribute field containing information pertaining to its name, how it formed, and its importance (among others) in the simplest of language. In addition to this, these geosites have other hyperlinked data in the guise of pictures, pamphlets, and publications. These geosites are displayed against the backdrop of an interactive 1:1 million geological map of the province. The geodatabase of the map has been modified to display the name of each geological unit, its lithologies, age, means of formation, and fun facts. Again, this has been done by using the simplest of language and cutting out as much jargon as possible (there's a built-in glossary to help with that). The true power of this platform is that any data can be linked and displayed to this platform, provided it is geospatially referenced with a linked geodatabase. For instance, as a built-in functionality of the app are the Forge SA hiking trail databases, allowing for you the user to know exactly what rocks you are on during your hike and, in some ways, to create your own geological adventure! The possibilities of linking any geoscientific data to the app are endless! Our hope is that the app can be used as a basis to promote South African geoscience education and outreach at any time and anywhere in the country. In time the uninitiated might be encouraged to see rocks the same way that we do and, perhaps more importantly, feel the same way that we do about our uniquely South African geology!

With time, and the participation of the greater South African geoscience community, we wish to expand the app to include adjoining provinces. We call upon you to assist us in expanding our geological and geosite footprint around the country. This can

be by championing the population of geodatabases or nominating provincial geosites. For more on the *Geodyssey* app, please make sure to tune into the upcoming GSSA Geoheritage conference!

We thank the 35 IGC and the GSSA for providing seed funding for the first version of this app and the Western Cape geoscience community for their input.

Cameron Penn-Clarke and Wendy Taylor

hot pot

The Geological Hot Pot

There are many websites on the internet that report on the latest scientific discoveries that cater to the informed layperson. The writers of the articles attempt to minimise the technical language and jargon that scientists use, and this results in the findings being more interesting to the general public. Good science communication informs the taxpayer how their money is being spent in the case of government-funded research around the world. The BBC has science reporters that are very good, and *Nature* and *New Scientist* issue daily articles that are understandable to the everyman. The *SciTechDaily* website (www.scitechdaily.com)

is recommended for those who are interested in a range of scientific topics, and I've found some of the articles below from the site.

If you can imagine giant mountain ranges with peaks as high or higher than those in the Himalayan Range (which is about 2 400 km in length), and that stretch well over 8 000 km, then you are looking at the two that formed during two periods of supercontinent formation on Earth. The first formed between 1 800 and 2 000 million years ago, giving rise to the Nuna Supermountains. The second resulted from the Gondwana Supercontinent that amalgamated between 500 and 650 million years ago. These extremely high



Folded rocks in the Damara Orogen that formed a segment of the Gondwana supercontinent (Ugab River, Namibia).

