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news

MSA
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contents

Front cover photo:

'Platbakkies' by Mike de Wit. First Prize Winner in the Namaqualand Diamond Centenary Photo Competition (see page xx for more about the event).

Would you like to see your photo feature as the cover image to Geobulletin? Please send your high-resolution, portrait-format images of geological features or geologists in action, with an appropriate caption, to geobulletin@gssa.org.za.

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guest editorial

Embrace AI, Don't Fear (or Ignore) It

Susan Webb

Lewis Ashwal

Some of our colleagues are livid with the prospect that students will use generative AI such as ChatGPT to compose answers to essay-type assignments. It is dead easy for the AI platform to deal with questions like "Explain why olivine cannot coexist with quartz" or "Explain the formation of the Witwatersrand Basin". And of course, our students have already discovered GeoGPT, which discharges even more sophisticated answers. Sure, our lecturers could use any number of AI detection tools such as GPTZero (which don't really work very well) to detect AI use, and hammer those students deemed to have cheated. Look, let's face it, AI is not going away, so why not use it productively, to everyone's benefit. It may be time for us to change our assignments to take advantage of AI.

Maureen Feineman at Penn State in the US gave her class in field geology each a photograph of an outcrop with some degree of complexity and told them to ask ChatGPT to reproduce an image of the features in the outcrops, using their own set of descriptors. After a few iterations, the students achieved increasing levels of success. In the end, ChatGPT did quite well, but struggled to generate an appropriate degree of randomness (grain size distribution, strata thickness), even with explicit instructions. Will this improve as the AI models improve? We wonder if GeoGPT would do a better job. In the end, the exercise produced exactly what was wanted—by refining their inputs, the students built upon their observational and descriptive skills. Our job should not be reduced to being police but encouraging the use of tools even though it means dramatically changing our assignments and attitudes (and getting students to evaluate the quality of information/data they are using). In our experience, what seems to work is what some call the "flipped classroom". Students read and prepare for class, initiate discussions, and then take a short quiz in class for each module. We often have ChatGPT and DeepSeek open in class discussions and compare their (often very incorrect) answers. This helps the students build confidence in their knowledge, evaluate material better, and learn which websites and journals can be trusted.

A very helpful use of AI is for translation. Sue remembers 10 years ago travelling to China and having her earplug break off and become stuck deep within her ear. She found the airport clinic and was able to communicate easily with a doctor who spoke no English but used an advanced (at that time) early AI phone app to seamlessly translate back and forth and she pulled out the offending plug in minutes. The similar (but much better) AI translating tools that are available nowadays might be an excellent way for non-English-speaking students to interrogate and understand assignments—by translating them into their home language, or perhaps even writing answers in their home language and translating to English. Maybe we could use something similar in our community outreach efforts, to explain better our science to non-English-speaking listeners. We need to be careful because access to AI might be seen as an equity issue as students with access to paid versions can spend more time "scrubbing" their output of AI flags, while students reliant on free versions are more likely to get "caught" (see https://leonfurze.com/2024/04/09/ai-detection-in-education-is-a-dead-end).

Some of us are old enough to remember that hand-held calculators, when they first hit the market (and killed the employability of slide-rule repairmen), were strongly discouraged for classroom use because the teachers wanted us to be able to do arithmetic in our heads. Then when word processors started to include spell checkers, predictive text,

and eventually grammar checkers, their use was discouraged because it was feared that we would forget how to spell and write. Now we are upset when reading manuscripts in which these tools are ignored, despite Bill Gates prominently alerting us to spelling errors in blue underline, highlighting grammatical errors, and making suggestions for more efficient use of language. It could be argued that these devices actually improve, rather than weaken our linguistic proficiency. These are early forms of AI but surprisingly are often likely to be picked up by AI checkers and flagged as AI usage. These acceptable uses (grammar checkers such as Grammarly) are more likely to be flagged than an egregious effort to hide AI usage. After all, AI can be asked to remove hints of AI usage from writing.

It is a fact that among those of us in the business of persuading journal editors into publishing our research papers, there are some who are really good at the writing aspects, and others who are much less good. Those who struggle may be using English as a second (or third) language, although some of us who claim English as a mother tongue can also suffer from self-admitted writing barriers. Should those who struggle with writing be chastised or even penalised for using currently available AI tools to put their thoughts into comprehensible prose? We think not. Here, the creative work is in the inputs, not the syntactic AI-generated text. If ChatGPT can be used to enhance our research productivity, then we are all for it. But be aware that journals will rightfully insist that use of such AI tools be acknowledged somewhere in the paper.

Can we use AI to critique journal articles? For students, the academic landscape can be very confusing—many journals of similar names have attributes ranging from excellent to deplorable. Recently a geophysics article purported to be about Vredefort was sent to Sue by a number of colleagues, but the authors had used data from Trompsburg, not Vredefort! Sadly, this article got traction on ResearchGate. It will be interesting to see how students and AI evaluate it.

Another type of AI is the Integrated Mineral Analyser (TIMA), which can produce in a relatively short time, elemental maps of entire thin sections at high resolution, resulting in terrific images of the textural and chemical features of and relationships between mineral phases. The “intelligence” comes in when its software tries to identify the different minerals—this can lead to two types of fatal error. Although its mineral identifications are mostly fine, it is notable for making crucial mistakes, such as declaring the impossible coexistence of olivine and quartz, and often the oddball minerals it recognises are doubtfully correct. The other downside is that researchers, both young and mature, are now starting to use this instrument in place of the petrographic microscope. Is this a harbinger of the demise of classic petrography and the gradual loss of an important skill that we now consider crucial? Maybe eventually, but only as we continue to teach the software proper identifications when it makes mistakes, will the risk of relying on TIMA be reduced to a manageable level. Also, TIMA instruments are not particularly cheap—not all institutions’ departments can afford the expense, especially since a trained operator will need to be employed.

We can think of AI as just another tool in the long line of tools, from slide rules, to calculators, to spell checkers, to simple grammar checkers, to predictive text, to generative and interactive predictive text. Our lives are full of AI even if we aren’t aware of it, from biometric access to language translation apps. Let’s use it to help clarify writing as long as we find ways to build fundamental skills.

This note* obviously focuses mainly on uses of generative AI in academic writing. Let’s hear from our industry colleagues—in what ways are you using generative AI? To respond to email? To deal with routine reports, contracts or applications? What uses does industry find acceptable and unacceptable? How are you checking that the material generated is correct?

**We did not use any form of generative AI in writing this article.*

Susan Webb & Lewis Ashwal
Wits University

executive manager's corner

Craig Smith

It's time for Geocongress, and it looks to be a good meeting, with about 270 submitted abstracts. The meeting is being staged on the UFS campus in Bloemfontein, and the organising committee is being led by Martin Clark. There are associated workshops and fieldtrips, with more details in this issue of *Geobulletin*. For the latest information, visit the conference website at https://geocongress2025.org.za/. We are grateful to the university and to our sponsors for hosting the event. Needless to say, this is a great opportunity to expand your network of professionals in academia and industry. I am impressed by the number of abstracts received; it indicates that earth science research is alive and well in South Africa.

The same cannot be said for the state of R&D in the United States, however. Yes, the USA is still the whale compared to the African minnow, but the Trump administration seems to be slashing budgets across the sciences, and the earth sciences are unlikely to escape the carnage. We know, for example that various data banks—funded with tax dollars—are being shut down and that there is a scramble to download this material to preserve years of effort and expenditure. United States Government websites are being politicised and can no longer be considered sound sources of information. This administration has opened up seafloor mining by executive order, simply claiming a right to mine the seabed anywhere in the world, apparently not beholden to any other claims or environmental concerns. A 'new gold rush' is being 'trumpeted' (pardon the pun) on the National Oceanic and Atmospheric Administration (NOAA) website as of the time of writing. Expect more deals like the Ukraine–USA agreement, which will give access by the US to the Ukraine's mineral wealth, though sceptics amongst us might not view the country's mineral endowment as impressive as it is made out to be. Because of the historical influence wielded by the US, it is likely to be a volatile next few years globally.

A positive spin for South Africa from Trump's first 100 days in office is the gold price. I cannot recall a time since the early 80s when the gold price increased by this magnitude in such a short span of time. For those of you buying gold mining shares it's probably a bit late to enter now; maybe wait for a pullback. The other day one of the mining shares gained seven per cent—and then fell by nearly the same amount the next day. The global economy in general, and global supply chains in particular, are in the process of re-setting, and anyone who tells you he knows where this is headed is talking trash. I do not envy the board members of companies evaluating the returns or otherwise of expansion projects, or disposals or acquisitions. It might be a good time to invest in greenfields exploration; one can presumably spend a lot less money and let time dampen the volatility a bit. But then I am a contrarian investor.

Those of you in the diamond industry, I am sad to report that we lost two senior geologists in the past month. Peter Nixon was well known for his research on kimberlites and xenoliths, and his editing of the book "Lesotho Kimberlites". He is widely credited with the discovery of Letseng-la-Terae, which is

still being mined today. Graham Wheelock was an industry geologist who was most recently on the board of K92, a Canadian gold miner. Graham was a senior manager who held executive and board seats for various companies throughout his career. He is perhaps best known in southern Africa for his work at De Beers and his role in founding GEM Diamonds, the owner of Letseng-la-Terae (see above). Neither was a member of the GSSA, although Graham was a member until he left for Canada some years ago. Both will be missed.

Craig Smith

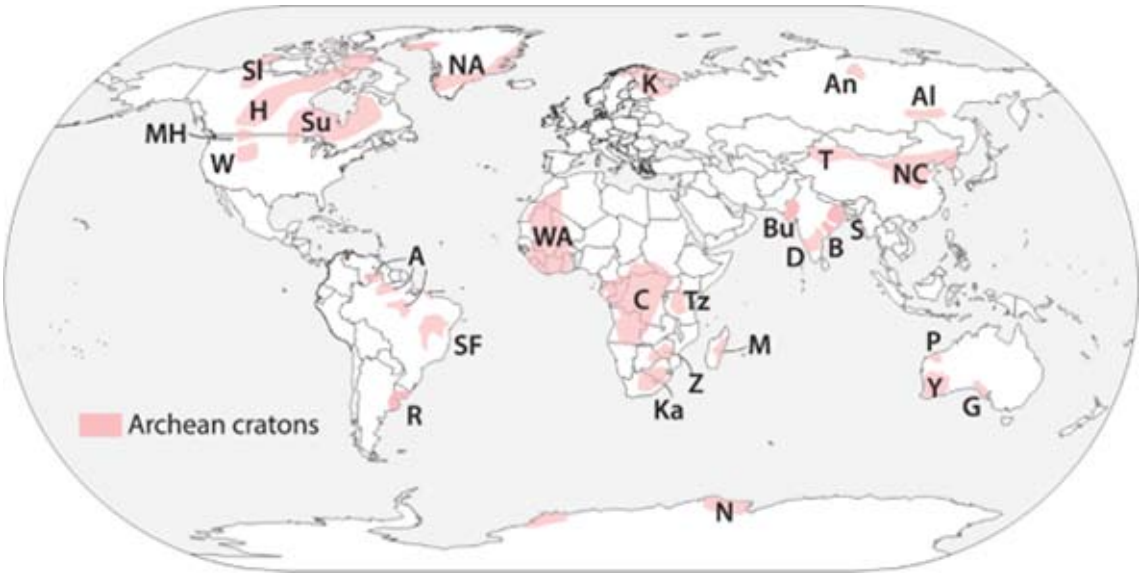
president's column

Continental crust that formed in the Archaean eon (2.5 Ga or older) makes up less than 3% of the Earth's surface today, but all the Earth's continents contain crust of this age. These ancient crustal fragments are known as cratons, defined as blocks of old, thick, lithosphere that, once formed, record little to no penetrative deformation, calc-alkalic magmatism, or regional metamorphism (aka: orogeny) for hundreds of millions of years.[1]

On maps, cratons comprise shields, where the ancient rocks are exposed at surface, and platforms, where the ancient crust is covered by younger supracrustal sequences. Geophysically, cratons represent a coupled crust–mantle system in which Archaean crust is underlain by a thick (>150 km) keel of cold, neutrally buoyant, sub-continental, depleted, lithospheric mantle of comparable age.[2]

Cratons preserve the early history of our planet, including the record of crust formation and growth and by extension the processes that

Steve McCourt



Global distribution of Archaean cratons (after Frost et al.[9]). A = Amazonia, Al = Aldan, An = Anabar, B = Bastar, Bu = Bundelkhand, C = Congo, D = Dharwar, G = Gawler, H = Hearne/Rae, K = Kola/Karelia, Ka = Kaapvaal, M = Madagascar, MH = Medicine Hat, N = Napier, NA = North Atlantic, NC = North China, P = Pilbara, R = Rio de la Plata, S = Singhbhum, SF = Sao Francisco, Sl = Slave, Su = Superior, T = Tarim, Tz = Tanzania, W = Wyoming, WA = West Africa, Y = Yilgarn, Z = Zimbabwe.

led to a differentiated Earth.[3] For example, studies of rocks exposed on the Yilgarn Craton of Western Australia led to the recognition of 4.4 Ga zircon grains that formed part of an early silicate crust;[4] the identification of 3.8–3.7 Ga pillow basalt in the Itsaq gneiss complex of Greenland, part of the North Atlantic Craton, is evidence for submarine volcanic eruptions;[5] and fossilised remains in the rock record of both the Pilbara Craton of Western Australia[6] and the Kaapvaal Craton of southern Africa[7], indicate the emergence of early microbial life by 3.5 Ga.

Worldwide, Archaean cratons are composed of two distinct rock assemblages: high-grade gneiss terranes and greenstone belts.[8] In addition, however, the Kaapvaal Craton is unique in being characterised by a 3rd association of Meso-and Neo-Archaean, low-grade, supracrustal rocks deposited in extensional basins on granitoid basement. The erosional remnants of these basins are preserved as the Dominion Group, the Pongola Supergroup, the Witwatersrand Supergroup, and the Ventersdorp Supergroup. The formation of these basins in the Meso- and Neoarchaean is important to our understanding of the character of Early Earth tectonics, indicating both the presence of significant areas of strong, rigid, continental crust able to support basin development and of continental rifted margins in response to lithospheric scale extension.

High-grade gneiss terranes are composed of complex suites of metamorphosed intrusive rocks often referred to as "grey gneiss." These terranes, which typically include rocks of multiple ages, are commonly metamorphosed at amphibolite- to granulite-facies and show evidence of partial melting (migmatisation).[8] Although the gneiss terranes are dominated by tonalite–trondhjemite–granodiorite (TTG) gneisses, calc-alkalic intermediate to felsic rocks, tholeiitic and calc-alkalic mafic rocks, and ultramafic rocks are present in limited volumes.[8] Larger intrusions of calc-alkalic granodiorite and granite are typically younger than the grey gneisses and formed by partial melting of the sodic TTG suite. High-grade gneiss terranes and their TTG suites are typical of the period spanning the Eoarchaean to the Mesoarchaean (4.03–2.8 Ga) crust[9,10] and include the world's oldest rocks, the Acasta gneiss complex, in the Slave Craton of northwestern Canada.

Greenstone belts are characterised by a wide variety of supracrustal rocks, both volcanic and sedimentary, and appear on all cratons.[11] Their name derives from the colour of metabasalts following greenschist metamorphism. In addition to greenstones, these belts also contain ultramafic volcanic rocks (komatiite), with minor intermediate to felsic intrusive, volcanic, and volcaniclastic rocks. The volcanic rocks are associated with sedimentary rocks, including greywacke, tuff, pelite, chert, minor carbonate, and iron formations.[8] Spherule layers

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in some greenstone belts have been interpreted as fallout from impact events.[11] Some greenstone belts also contain >3.5 Ga meta-carbonate rocks with stromatolites and filamentous microfossils that have been interpreted to record primitive life.[6,7] Archaean greenstone belts host globally important mineral deposits, including massive sulphide Ni–Cu–Zn deposits, magmatic cumulate Cr deposits, iron-formations, and, most commonly, orogenic (lode) gold.

Studying Earth's oldest rocks has a unique set of challenges, not least of which is dealing with a non-uniformitarian Earth for at least the first 1.5 billion years of Earth history. Calculations suggest heat flow in the crust was ~ 3 times present values at around 4.0 Ga and around twice at 2.5 Ga; the mantle was 100–250 °C hotter[8] and the geothermal gradient steeper. Potential consequences of a hotter Early Earth may have been a greater amount of partial melting resulting in thicker, Mg-rich, oceanic crust and a thinner lithosphere. This lithosphere would have been weaker, more buoyant and thus less likely to undergo subduction. Thus, instead of rigid plates moving horizontally above a convecting mantle in a modern "mobile lid" regime, Hadaean (>4.03 Ga) and Eoarchaean (>3.6 Ga) tectonics may have been driven by mantle upwellings beneath a stationary crust, in a "stagnant lid" scenario.[8]

Another important aspect of grappling with the Earth's oldest rocks is the "preservation bias"; we only have the "leftovers" to examine.[8] Although many models of crustal evolution suggest that >50% of the continental crust formed in the Archaean, the amount of this crust available for study forms only ~3% of Earth's exposed surface. It is unknown whether tectonic processes may have preferentially destroyed certain Archaean rock assemblages, leaving those that survived over-represented in the rock record.[8] We cannot assume, therefore, that what is left of the Archaean crustal record is representative of what was present more than 2.5 billion years ago and that the TTG suite that dominates the high-grade gneiss complexes typical of many cratons was as prevalent in the Archaean as the rock record suggests.[8]

As indicated in the accompanying figure, Archaean cratons vary considerably in size, from relatively small, e.g., Tanzania, Wyoming, Rio de la Plata, and Kola, to larger ones like Superior, Yilgarn and our own Kaapvaal Craton. Most cratons have Proterozoic rifted or faulted margins, suggesting

The world's oldest rocks, the Acasta gneiss outcrop, Slave craton, Canada. (Photo: J. Reimink)

they are fragments of once larger landmasses.[8] As an extension of this proposal, present-day cratons have been grouped into "clans" based on common geologic histories and isotopic characteristics.[12] It has been suggested that these "clans" may identify larger crustal fragments referred to as "supercratons,"[12] which, in turn, may have been precursors to the well-known supercontinents Gondwana, Rodinia, and Nuna/Columbia.[8]

Following an examination of Archaean timelines linked to igneous, metamorphic, and sedimentary events, Bleeker[12] suggested specific correlations of cratonic fragments with similar geologic histories. He noted that the Dharwar Craton of peninsular India, the Zimbabwe Craton of southern Africa, and the Wyoming Craton of North America had significant similarities to the Slave Craton and suggested that some, or all, of these were neighbours in a ca. 2.6–2.2 Ga supercraton he called Sclavia. Closer to home, it has long been proposed that, based on bed-for-bed correlations between units in their Neoarchaean supracrustal cover sequences, the Kaapvaal Craton of southern Africa and the Pilbara Craton of Western Australia were once part of the "Vaalbara" supercraton. In a similar vein, it has been suggested that the oldest rocks in cratons may help identify members of a clan. Nutman[13], for example, proposed that 10 cratons, each containing >3.6 Ga rocks, could have been part of an ancient continent called Itsaqia.

Another correlation that has been cited as potential evidence of "clans" is the time of cratonisation, that is the time after which the cratons behave as tectonically stable blocks with minimal, if any, further penetrative deformation or magmatism. According to Bleeker[12], the Kaapvaal and Pilbara cratons cratonised around 3 Ga (indicated in the oldest part of the Kaapvaal Craton by the rifting event that formed the basins in which the rocks of the Dominion Group and the Nsuze Group accumulated), the Superior craton stabilised around 2.65 Ga, and the Slave clan of cratons by 2.5 Ga.

Archaean cratons are an incomplete record of early Earth history. The surviving cratons represent only a small part of the original Archaean crust. These fragments may not even be representative of Archaean crust as a whole if, as has been suggested, cratons were preserved preferentially because of their thick, strong, lithospheric roots.[8] The geologic, petrologic, geochemical, and isotopic characteristics of cratons are complicated by a long history of deformation, partial melting, and metamorphism before cratonisation.[8] Despite these challenges, detailed studies of these "geologic time capsules", using multiple approaches, provide the best insight into Early Earth processes and will, hopefully, continue to be supported.

Steve McCourt

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SAMCODES

SAMCODES Quarterly Snaps

25th Anniversary of the SAMREC Code

March 2025 was the 25th anniversary of the SAMREC Code and a series of events are planned to celebrate the genesis of the Code. The events are highlighted on the SAMCODES, SAIMM and GSSA websites.

The SSC is also in the process of revising and improving its logos to revitalise its appeal. The new logos will be shared in due course.

LinkedIn

A SAMCODES page is available on LinkedIn to keep up to speed with current developments: https://www.linkedin.com/company/samcodessa/.

SAMCODES App

- The App is kept up to date and offers a useful platform to access current SAMCODES information.
- The quiz has been uploaded. Test your proficiency and know-how on the SAMCODES by doing the effective and informative quiz. It will take only a few minutes to complete. Check out the SAMCODES App User Guide for step-by-step instructions: https://lnkd.in/emT8976z.

Training programmes

The SAMREC/SAMVAL Young Professionals Workshop was offered on 27 March by Prof Steven Rupprecht as part of the of the celebrations of the 25th anniversary of the SAMREC Code.

An Introduction to SAMREC, SAMVAL and JSE listing rules is also planned for 29–30 September as part of the celebrations. Additional training courses are planned, and the details will be confirmed in due course.

Committee updates

SAMREC THE SOUTH AFRICAN CODE FOR THE REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES	Continuation of incorporation of ESG Factors into SAMCODES and recommendations for additions into SAMREC Table 1 and SAMVAL is in progress.
SAMVAL THE SOUTH AFRICAN CODE FOR THE REPORTING OF MINERAL ASSET VALUATION	The Committee has plans to host a Valuation Conference in South Africa in October 2025.
SAMOG THE SOUTH AFRICAN CODE FOR THE REPORTING OF OIL AND GAS RESOURCES	SAMOG Code updates were sent for public comments and the launch event will be communicated in due course.
SAMESG	Draft updates to the SAMESG Guidelines 2.0 and ESG definitions are in the process of being finalised and the updates will be shared when the consultation process is completed.
INDUSTRIAL	The Industrial Minerals Guidelines were completed and launched on 6 March. The SSC expresses its appreciation to the working committee for the good work. Access the guidelines here.

SAMCODES ESG Working Group Activities

Draft documents from the SAMCODES ESG Working Group have been released for comments. Feedback will be provided once all the comments have been incorporated.

International Liaison

The JORC Code update is in progress and consultation with stakeholders has been completed. Feedback will be provided on the anticipated adoption process once received.

CRIRSCO guidelines and definitions have been finalised and are available here.

Sifiso Siwela

IMSG 2025

IMSG 2025 at Stellenbosch

The (lucky) 13th edition of the Igneous and Metamorphic Studies Group took place at Stellenbosch University between the 19th and 22nd of January 2025. The meeting was hosted on campus in the Chamber of Mines building, nearby to Geology. This was our second post-COVID, independent (i.e., not conflated with the GSSA Geocongress as in 2022) IMSG, following the 2024 event at Oribi in KwaZulu-Natal in 2024.

This account commences with the trip out to the conference, since for the many of us who drive to these meetings, optimising our budgets and reducing our carbon footprints, there's plenty of South African geology to appreciate along the way.

In the accompanying photo, Ms Nancy Muriungi (Rhodes PhD candidate) admires the spectacular scenery (in beautiful weather) of the Cape Fold Belt in the Huis River Pass. This area shows folding to the east of the structurally complex syntaxis region

Nancy Muriungi (Rhodes PhD candidate) admires the spectacular scenery (in beautiful weather) of the Cape Fold Belt in the Huis River Pass.

where the north–south-trending northern limb of the Cape Fold Belt meets the east–west-trending southern limb.

The conference itself formally commenced with registration, reacquaintance and introductions at the traditional ice-breaker on Sunday evening, held in the department, and illustrated by the accompanying photo montage.

The first day of the conference this year was the traditional (albeit not mandatory, for conference organisers) field outing. Forty-five people appeared for the event, and enjoyed great weather and an interesting day out. Some of the stops had been experienced on a previous IMSG fieldtrip, but as always, visiting the same rocks with a different trip leader gives you new perspectives, often to the point where you're barely aware you've been there before.

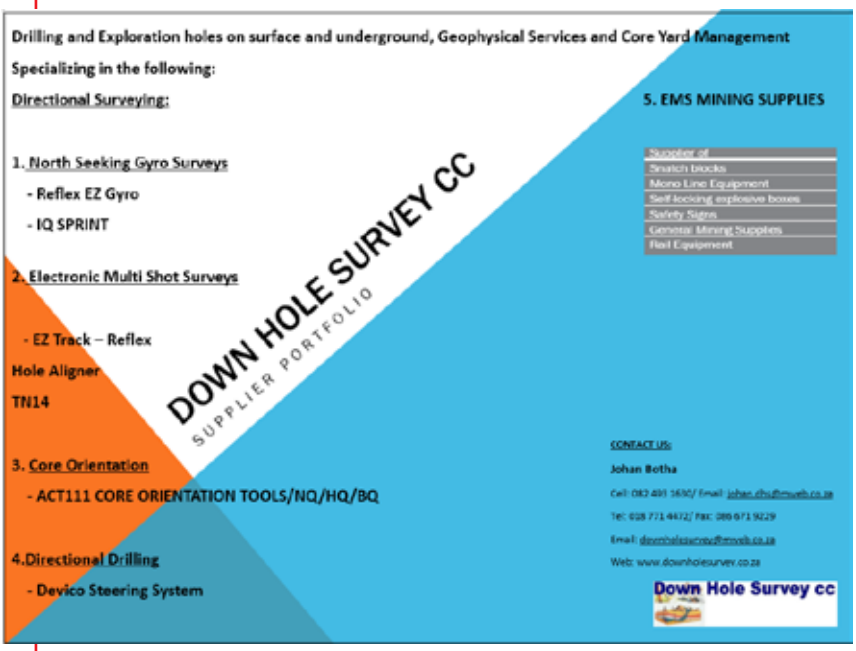
We began at Yzerfontein and worked up the coast from there to just north of Saldana Bay. Migmatites featured once again (similar to last year at Port Edward, KZN), but here were complemented by granitic breccia veins, assorted granites, and granitic tuffs. Unfortunately, just after lunch as we examined the tuff, your correspondent 'was poorly all over the car park, and some plants', courtesy of what was later diagnosed (by fellow academics, and later by a doctor, as a transient non-communicable ailment). Matt Mayne stayed behind and tended to this author for the afternoon, for which I am/was profusely grateful, while the rest of the group moved north for the next two hours. However, since the photos I've acquired that relate to that

time period consist mainly of some nice bird photos from Marlina Elburg (see pg 17), I conclude that while I was mainly oriented groundwards, others were gazing skyward.

Another photo montage follows. A picture is worth a thousand words, so they say, so here's a few thousand word equivalents. Sadly I'm not paid by the word, or word-equivalent, or in fact at all, for this contribution. All images below (and above) courtesy of this author except where otherwise noted.

On to the actual conference itself. The meeting featured 35 oral presentations, attended by 55 registered attendees. Of the participants, 21 were students, from eight universities (representing, alphabetically, the universities of Cape Town, Johannesburg, KwaZulu-Natal, Limpopo, Pretoria, Rhodes, Stellenbosch, and the Witwatersrand). Ten posters were presented, mostly by student contributors.

The sessions were thematically subdivided as follows:
Mafic rocks 'til tea, then Metamorphic (which was a nice return to form for the IMSG after seemingly a few years light on metamorphism, one of its core disciplines) 'til lunch. After lunch, Felsic Rocks, and three Bushveld-oriented talks to wrap up the day. The second day commenced with Tectonics & Mapping (also good to see), followed by Ultramafic & Mantle studies, which continued for the rest of the day. Lunches were hosted at the nearby food court on campus in *Die Neelsie*, the retail court and student centre with plenty of options to choose from at reasonable prices. For dinners there were plenty of good options in town, and a plethora of vineyards nearby, for those with more educated palettes and fatter wallets.



Trip leader Alex Kisters' feet were suitably festively adorned for the field outing. When the Canadian Minister of Finance presents the annual national budget, the tradition has been that they do this in a brand new pair of shoes. In this case, Alex said they weren't new, and nothing special. And then said this again to the next five or six people that walked up to him, asking about them. I think if he'd had a backup pair available at that point, he'd have changed them. (Photo: S. Büttner)

The conference dinner was a braai, held at the nearby Van Der Stel Sports Club. Participants built up their appetites in an impromptu cricket match, or by watching it and providing insightful analysis. The garbage can served as stumps and bails; not

quite the IPL, but this is (probably) how you get there, eventually.

As is traditional, awards (this year comprising caps and stainless steel Lizzard flasks from the Matie shop) were given to the best talks and posters, handed out by IMSG President Steffen Büttner. The awardees, in competitive fields as usual, were as follows. The best Honours Speaker (given to the best talk on an Honours project, in this case, regardless of what degree the student might currently be registered for, with the same going for the other awards) was given to **Tristan Reid** (SU) for his presentation '*An experimental investigation of the lithium concentrations required to form lithium-bearing minerals in pegmatites*'. The best Masters Speaker was deemed to be **Jena Moldenhauer** (UCT), for her talk on '*Volcanology and petrology of selected kimberlites from the Lulo kimberlite field, Angola'.* The Best PhD level Speaker was **Ariela Oliveira Mazoz** (SU) for her presentation '*Assessing fluid sources and timing of retrogression in the amphibolite facies metapelites of the Southern Marginal Zone of the Limpopo Belt - South Africa, via integrated U-Pb and Sm-Nd isotopic compositions of monazite and apatite*'. Last but not least, the Best Overall Poster (with no degree constraints) was by **Michelle Brits** (UCT), for her contribution '*Diamond growth and destruction constrained using diamond morphology and surface etch features, Roberts Victor Kaapvaal lamproite, and comparison with kimberlitic diamonds'.* The photographic evidence is provided below.

The talk award presentation was preceded by a formal thanks to the organising committee, and particularly (and as represented for this purpose by) IMSG conference organising committee chair Tahnee Otto. The funding contributors for the conference were also thanked at this time, and accordingly are listed here, consisting of the Deputy Vice Chancellor for Research at Stellenbosch University (who provided the largest contribution), the DSI-NRF Centre of Excellence for Integrated Mineral and Energy Resource Analysis (CIMERA), and the Research, Education, and Innovation (REI) Fund of the Geological Society of South Africa

Prof. Kisters gets the show on the road.

An "impossible" photo. To find out why, read on.

Not a pseudotachylite.

☞

Evidence of mantle involvement: mafic enclaves within diorite at Yzerfontein.

The fieldtrip moves on, leaving your correspondent (and this photographer) behind. (Photo: T. Otto)

(GSSA) (who provided R50k specifically for student support).

On a more personal note, we welcomed back IMSG regulars Trish and Grant, who reappeared with their son Jamie (see ice-breaker montage for evidence), after their absence in 2024.

Among the missing from our usual participants we note Craig Smith (who was dealing with an unplanned medical concern; he says he's fine now) and Matthew Huber (now at UKZN, and who was busy child-minding this year, so Elizaveta could attend). We hope to see them all back in future, along with members of universities not represented this time (such as the University of the Free State, who were probably busy getting ready for the GSSA Geocongress in June this year). We also hope to get new participants involved in 2026, specifically from the University of Limpopo and the new geology department at the University of Mpumalanga, since the 2026 meeting will be in their geographical backyard, hosted in the Barberton area.

The trip home was thankfully uneventful, and pleasantly picturesque. We look forward to 2026.

Steve Prevec

A "real" photo from the parking lot at Yzerfontein. The one earlier was taken from the ocean-side, and then flipped, to get the comparable legible effect. (There were too many cars in the way for this shot, by then.) This photo courtesy of T. Otto.

Thar be a contact. Presumably. (Photo: T. Otto)

Kelp gull (left) and two Oystercatchers, who are clearly talking about her. (Photo: M. Elburg)

The fieldtrip, sitting on a high-temperature assemblage, but not at all uncomfortable.

A Rock Kestrel, apparently listening to Alex Kisters (photo M. Elburg), evidently unlike at least some of the rest of us. "Where can I get some shoes like that?" is what she's thinking, I'm guessing. (They are also known as Common Kestrels, but they hate that.)

Great white pelicans, on their way somewhere north. (Photo: M. Elburg)

☞

The sit-down part of the meeting formally concluded with a wrap-up from the IMSG president, Prof. Büttner, which included a discussion regarding the plans for the next IMSG.

Best PhD-level Speaker: Ariela Oliveira Mazoz.

And away we go, to more convivial surroundings in town.

IMSG president Steffen Büttner closes the meeting.

MINSA initiative

The MINSA Lexicography Initiative

Amagama ayasichaza, ayasicacisa, kwaye, ngamanye amaxesha, asebenzela ukusilawula okanye ukusahlula.

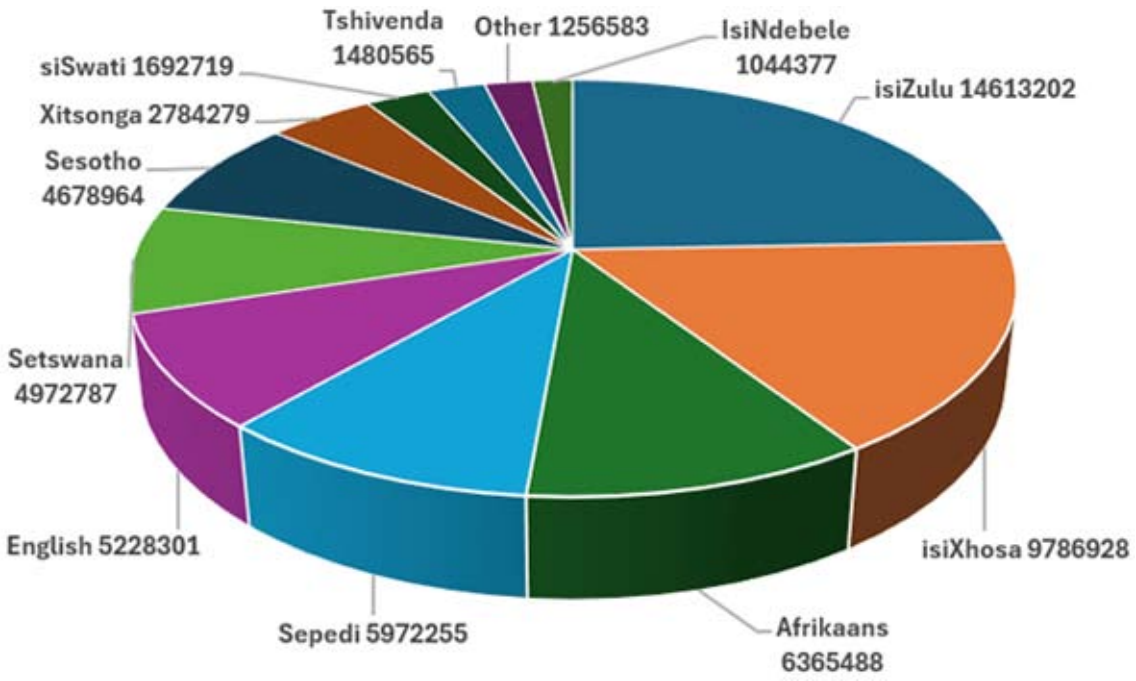
Words define us, they explain us, and, on occasion, they serve to control or isolate us.

From "The dictionary of lost words" by Pip Williams (translation into isiXhosa courtesy of Sinelethu Hashibi)

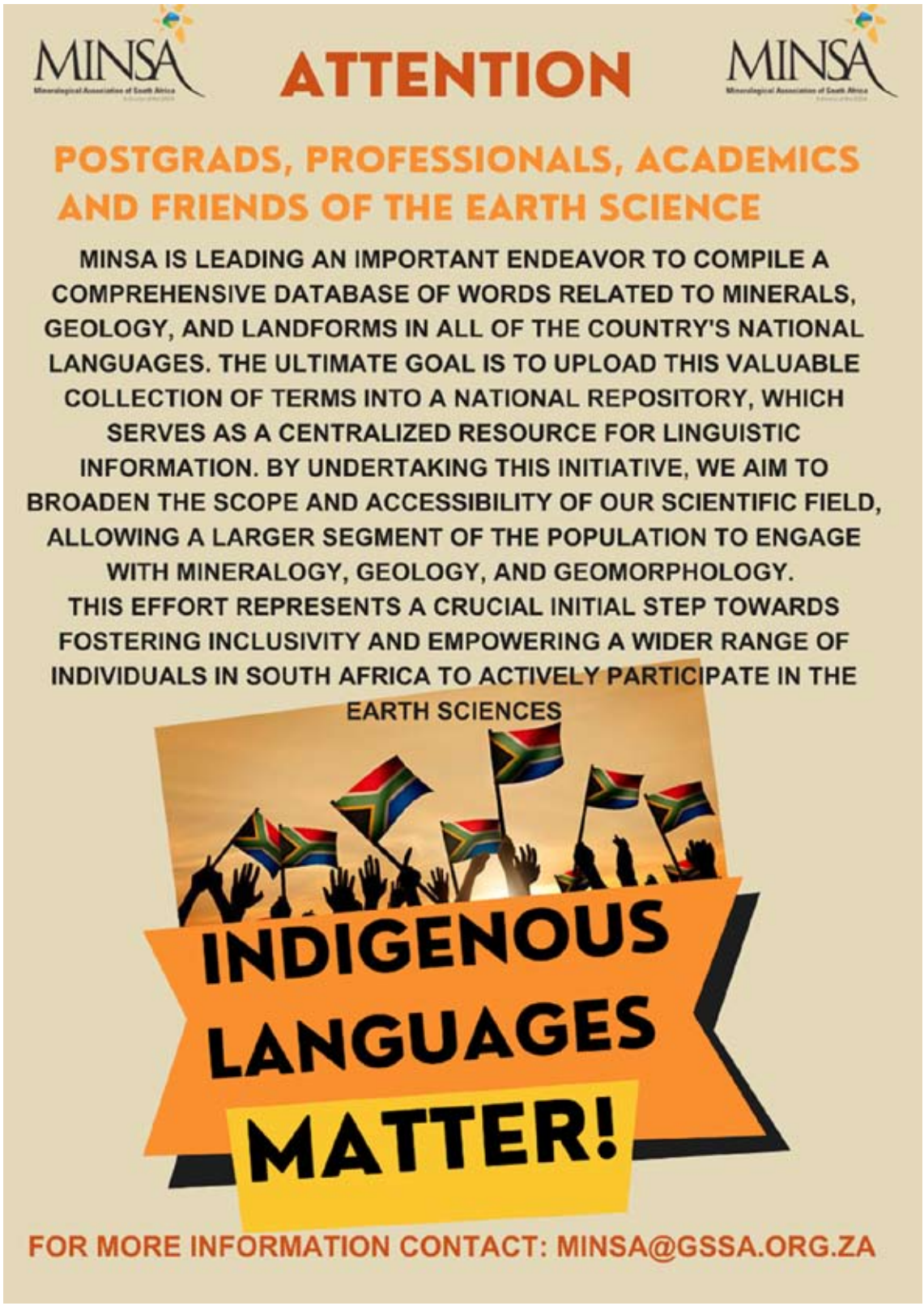
In many parts of the world, undergraduate enrolments into the earth sciences, especially for the hard rock sub-discipline, is on the decline. To some extent, this decline may be attributed to negative sentiments surrounding mining, with societal paradigms subscribing to the NIMBY (Not In My Backyard) and BANANA (Build Absolutely Nothing Anywhere Near Anyone) movements, often fuelled by social media narratives and influencers. Another possible reason for this decline is because we, as a community of practice, fail to adequately market ourselves and the importance of our discipline.

Towards rectifying the latter, earth science outreach and education is starting to receive its much needed, and well-deserved attention. Most of these initiatives are currently pitched in English, a global language that enjoys some dominance in the local and international earth sciences. However, in a context of the relative prevalence of South Africa's twelve national languages, English is only the fifth most commonly spoken home language (after isiZulu, isiXhosa, Afrikaans and Sepedi). This begs the question, "How effective can our outreach initiatives be if they are not being pitched to the youth of our country in their primary spoken language?"

Towards enhancing future earth science outreach initiatives, specifically with a view towards attracting new and eager young talent into the discipline, it is imperative that the discipline make itself as accessible as possible to as wide a variety of people as possible. This accessibility and inclusivity will only be optimised by drawing on the power of language.

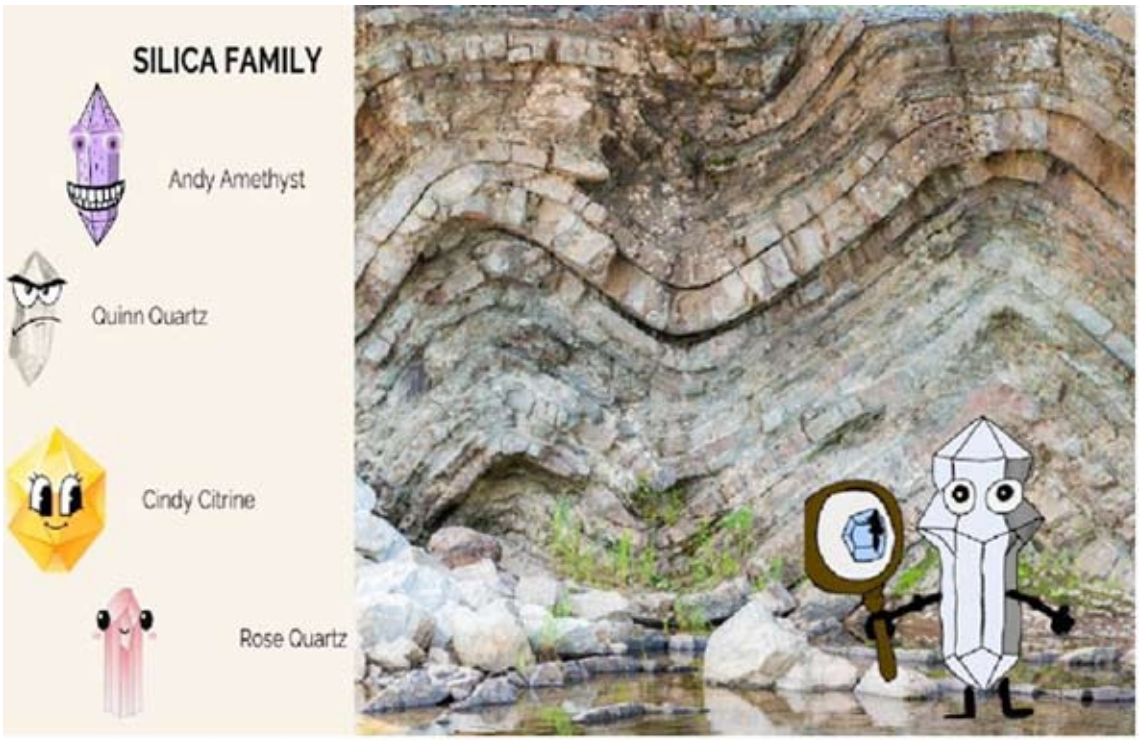


The prevalence of South Africa's home languages (data from Statistics South Africa's 'Cultural Dynamics in South Africa' (2025), based on Census 2022 and accessed from https://southafrica-info.com/).



A 2024 advert calling for community involvement in the lexicography initiative.

The Mineralogical Association of South Africa (MINSA) was successful in obtaining a grant from the 35th International Geology Congress (IGC) Legacy Fund, which has enabled it to pursue a lexicography exercise aimed at collating geological, mineralogical and geomorphological terms in South Africa's eleven spoken national languages. The initiative started out as a grass-roots community engagement exercise in which the general geological community was encouraged to submit translations of common geological terminology. The effort rendered mixed results, with a total of



Some rough ideas of where the collated word list may be useful in teaching and enthusing the next generation of South African earth scientists. (Image: J. Dykstra and P. Dinham)

deformed sandstone - vervormde sandsteen - ilitye lentlabathi elineziphene
**terms from Google translate*

161 translations submitted, though some of these translations conflicted between sources. To fast-track the process, MINSA enrolled professional help from the Stellenbosch University Language Centre. Currently we have a list of 182 geological terms that will be, as far as possible, translated into ten other languages. If fully successful, the result will be a list of >1800 geological terms collated into a repository that will be made publicly available for future outreach activities, teaching and learning interventions and general advertisement of the earth sciences. Should you be interested in more details about the initiative, you are welcome to contact minsa@gssa.org.za.

Bjorn von der Heyden

stereo photographs

Neilson Brothers' Early 20th Century Stereo Photographs of Witwatersrand Gold Mines

I recently acquired a collection of historical black-and-white stereo photographs of the Witwatersrand gold mines underground workings, and some surface images. These were taken by the Neilson brothers between 1904–1910.

One of three cardboard boxes each holding about 50 stereo-pair photographs, most from Crown Mines, and some from Nourse Mine and a few unlabelled.

Some of brothers' work has been described in an article published by Carol Hardijzer in the Johannesburg Heritage Foundation's Heritage Portal: 'The elusive Neilson brothers—Early 20th century deep-level mining photographers'. In another online blog, the author, Cherry Bomb(!), analyses early stereo mine images and provides some detail about the early stereo equipment that was used to view the paired images in 3D.

It appears the two brothers, Raymond and George Neilson, specialised in early mining photography. Hardijzer mentions that not much is known about the Neilsons other than they had business addresses in Germiston and Boksburg. Nearly all of their photographs are either numbered and/or have some mine names as well. Most of the images I have are from Crown Mines and several from Nourse Mine, but there are other known Neilson photos from Knights Deep, Modder Deep, State Mines Carson, Geldenhuis Deep, New Primrose, Robinson, Kleinfontein, Cinderella Deep, and Comet Mine. Based on their numbering system, Hardijzer estimates that at least 1,750 underground gold mine stereo-pairs exist, and perhaps another 1,000 that are numbered but with no mine name attached. This is a prodigious amount of underground photography, particularly for the time period. One only has to consider the logistics of lugging large cameras underground in those days, plus tripods and suitable lighting, into the active areas of the mines, where conditions were challenging even for the workers.

The stereo-pairs I have are all annotated by hand in white ink, on one of the two stereo photos. The black and white images are square and each pair is glued side-by-side on a rectangular stiff card. On either end of the card, the name appears, usually "R. Neilson Box 145 Johannesburg". The antique stereo viewer used to view these is made of wood, with a hinged handle that allows one to hold the viewer comfortably while viewing the stereo-pair (see photo). The card that contains the stereo-pair slots into two wire brackets on either end of a strip of wood that slides towards or away from the viewer until the pair comes into focus, in stereo. The viewer I have has a patent stamped on the underside, "PAT'D JULY 20 1902".

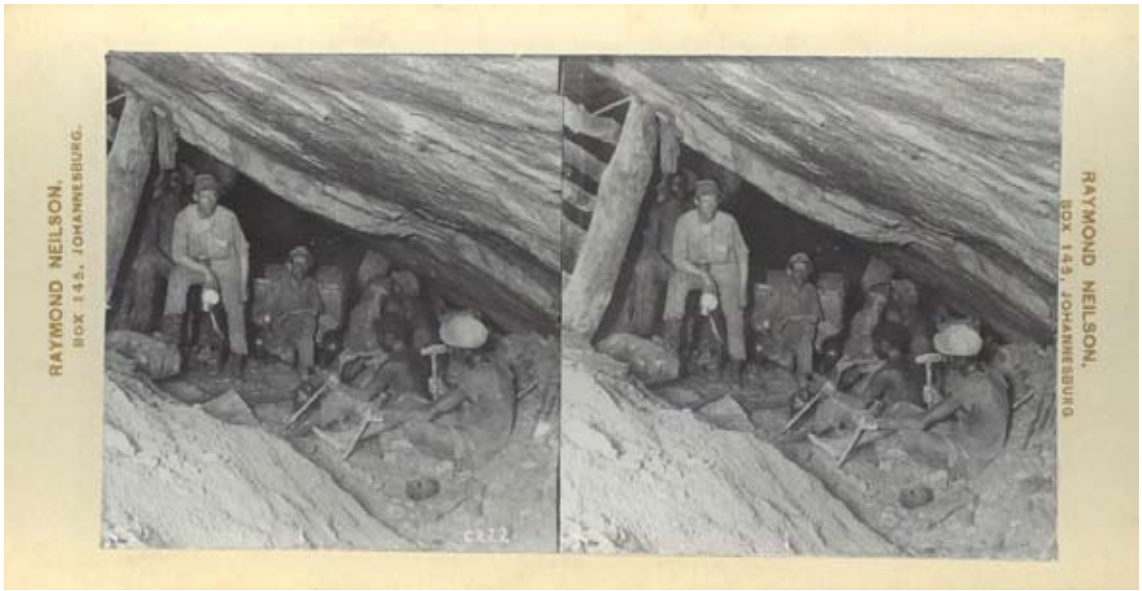
The most striking feature of the photographs is the working conditions, at that time, in the deep-level Witwatersrand gold mines. Many of the images show European and African mine workers in everyday clothes, no hard hats, some are barefoot. One photo shows what appears to be a visiting party of guests underground, accompanied by their small dog.

Here is a selection of photos, all from Crown Mines. The first two show the style of the paired images, while the remainder shows only one of the two.

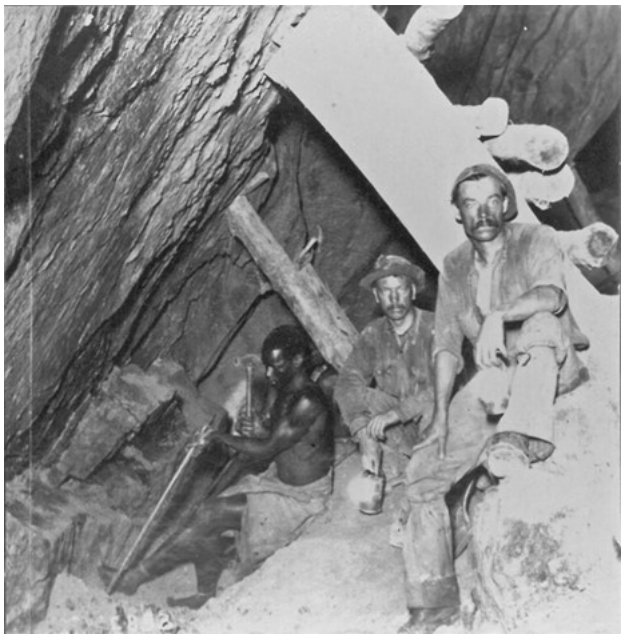
Bruce Cairncross

Two views of the antique stereo photograph viewer. The image on the left has a pair of stereo photos inserted in the wire frame holder. While looking through the view finder, this can move forwards and backwards until in focus and seen in 3D.

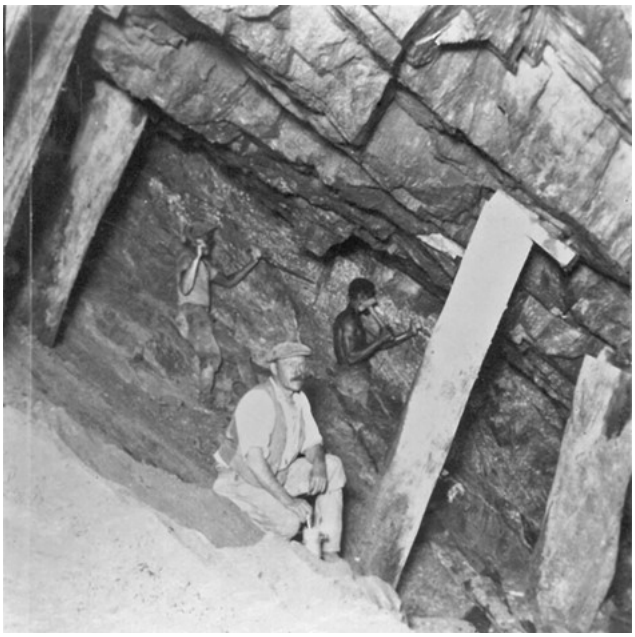
Typical stereo pair mounted on dark grey card with bevelled edges that slide easily into the viewer. The label reads "Timbered Stope, Crown Mines C537". The steeply dipping nature of the reef is clearly evident.



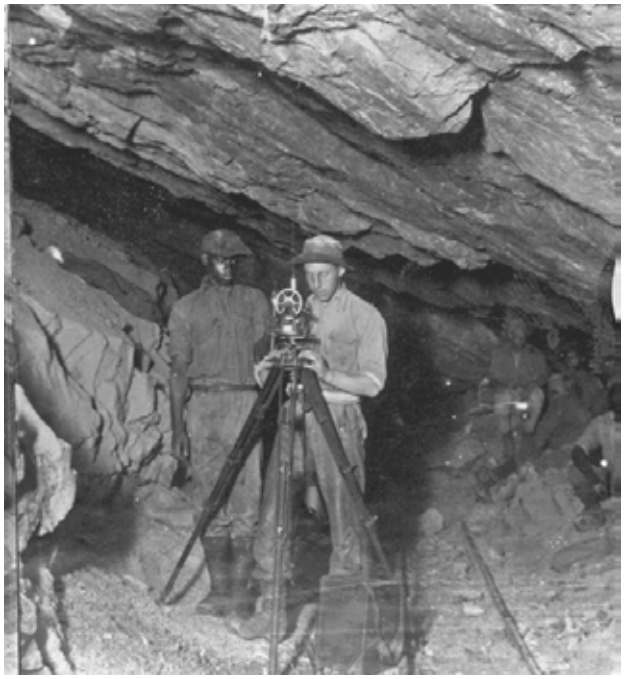
A second variety of images that were glued to pale yellow card with square edges. Both figures 1 and 2 have Raymond Neilson's name and address on both sides of the card. In this scene, two European miners look on as African workers are hammering at rock on the floor. Note the soft hats being worn (a theme throughout the series of photos), and how the workers have bare feet! Health and safety, as can be seen in other figures here, was not a serious matter. The miner leaning on his knee has a carbide miner's lamp.



Very steeply dipping strata, and steep-angled timber supports. Virtually all the photos show European miners with some or other form of soft hat or cap, and with ubiquitous droopy moustaches. Here both of them are holding lit carbide lamps. Note the barefooted African worker. Crown Mines C832.



This photo shows one of the pair of stereo photos. Two labourers are chipping away at the reef behind the seated miner. Note the dip on the rocks, the timber roof supports, and the carbide lamp in the miner's right hand. Crown Mines C858.

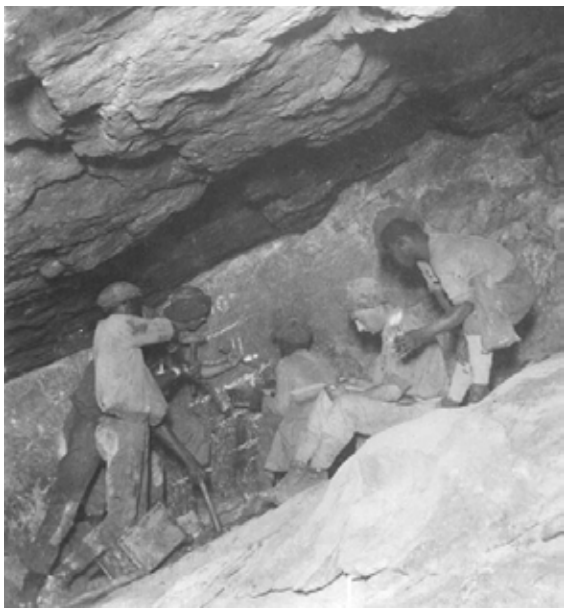


Underground surveying at Crown Mines C510. Note the plumb bob suspended on a line attached to the hanging wall for vertical reference.

Stacked cages taking personnel underground at No. 5 Shaft, Crown Mines.

Hand written label reads: "Tramming, Crown Mines C240". Again, note the barefoot labourers and the low, narrow workway. The labourer on the right appears to be holding a candle, while the one front-left has a carbide lamp.

"Charging a pophole C648". The miner is using the steel rod to ram the explosive into the hole while a labourer holds the carbide lamp for light. Note the fuse wire wrapped around one individual's neck!



Sampling the reef at Crown Mines. Sections have been marked off using chalk to delineate the sample intervals. The miner (geologist?) can be seen hammering with a steel chisel while the labourer sits holding a container to catch the fragments. A second miner sits and records the sampling.

The fitting shop at Crown Mines.

An extraordinary photograph. There has been collapse and fall of rock from the hanging wall (visible at the rear) and an injured mine worker is being rendered aid by two individuals. At the same time, the person on the left appears to be using a pry bar to lift a massive slab of rock, which appears to be on the lower part of the African worker's leg. Two carbide lamps are on the ground and the person on the right is hammering in a roof support, perhaps to stabilise the roof?

REGISTRATION WITH

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South African Council for Natural Scientific Professions

01 LEGAL COMPLIANCE NSP ACT (27 of 2003)

02 RECOGNITION AS A PROFESSIONAL

03 PUBLIC CONFIDENCE IN YOU AS A SCIENTIST

04 MARKETABILITY (EMPLOYERS REQUIRE REGISTRATION)

05 CODE OF CONDUCT – TRUST FOR ETHICAL VALUES

06 INPUT TO GOVERNMENT – SACNASP VOICING SCIENTISTS' INPUT AT MINISTERIAL LEVEL

07 NETWORKING – WEBINARS, WEBSITE NETWORKING PORTAL

08 POTENTIAL FAVOURABLE RATES FOR PROFESSIONAL INDEMNITY INSURANCE

09 CAREER ADVERTISEMENTS – EMPLOYERS ADVERTISE VACANCIES ON SACNASP WEBSITE AND SOCIAL MEDIA

10 VOLUNTARY ASSOCIATION EVENTS – NETWORK WITH FIELD OF PRACTICE PEERS AND GAIN VOCATIONAL CAREER ADVICE

11 FACILITATES LIFELONG LEARNING THAT IS CRUCIAL TO A PROFESSIONAL'S CAREER PATH – CANDIDATE MENTOR PROGRAMME

12 CONTINUING PROFESSIONAL DEVELOPMENT – ONLINE LEARNING

a.k.a. 570 m and the skinny beaches

Diamonds were formally discovered at Port Nolloth in 1925. Their discovery and mining have left a controversial legacy along the West Coast. The Geological Society of South Africa convened a conference and fieldtrip to celebrate 100 years of diamonds along the Namaqualand Coast (and into Namibia). This comprised two days of conference, followed by seven days in the field, visiting historical and current operations between Vanrhynsdorp and Oranjemund.

The conference venue at Letatsi Lodge, Vanrhynsdorp.

The conference was held at the Letatsi Lodge in Vanrhynsdorp, some 3 hours drive north of Cape Town. Primarily a wedding venue, Niel Hanekom (Events Manager) and his team pulled out all the stops to make our conference experience as seamless as possible. Their organisation was great and the food was amazing—quite possibly the best steak I have ever eaten, anywhere in the world (thanks Adrene).

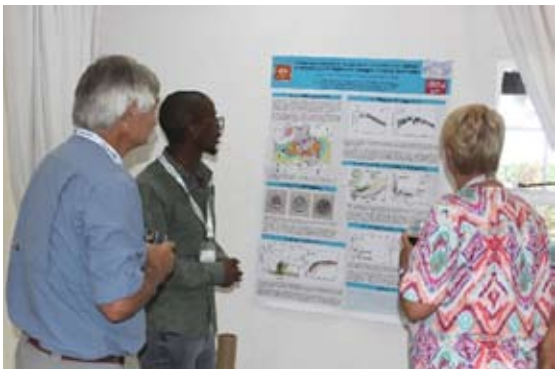
The first day started out transforming a wedding venue into a conference/exhibition centre. Much able-bodied help was provided by Letatsi Lodge personnel, GSSA staff, student volunteers and exhibitors, and soon things were looking good.

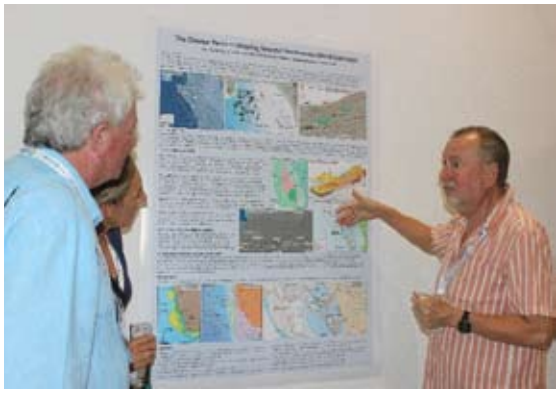
The conference started off with a wine and nougat tasting event at Lutzville Vineyards, where participants got into conference mood.

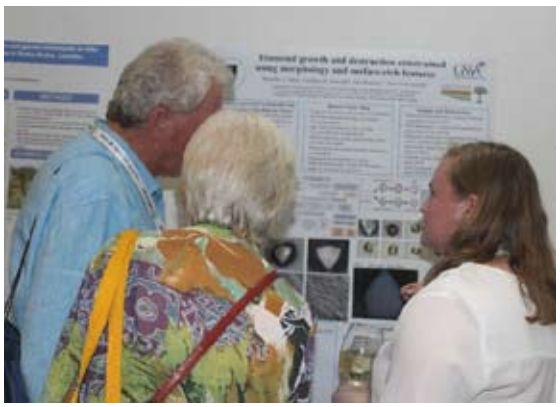
The conference was attended by 62 delegates from South Africa, Namibia, the UK, Switzerland and

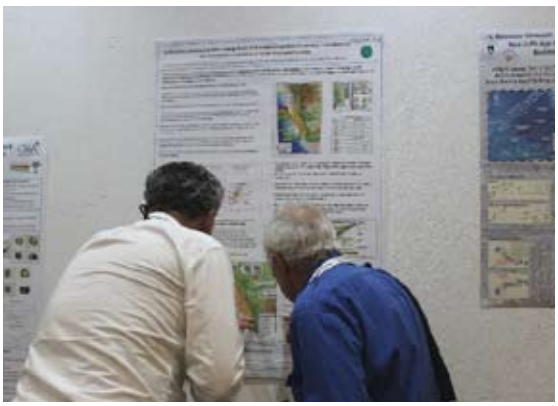
Wine and nougat tasting at Lutzville Vineyards.

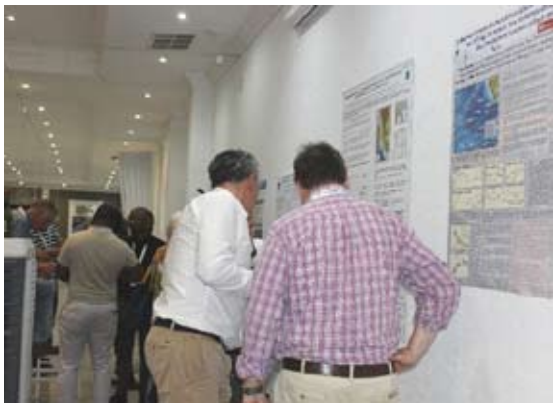
Angola. Some 26 oral lectures and seven posters were presented over two days. For those who missed the event, the Final Programme, Speaker Biographies and Abstract Volume, recordings of the proceedings and PDFs of many of the talks can be purchased through the GSSA (please send a request to Info@gssa.org.za).







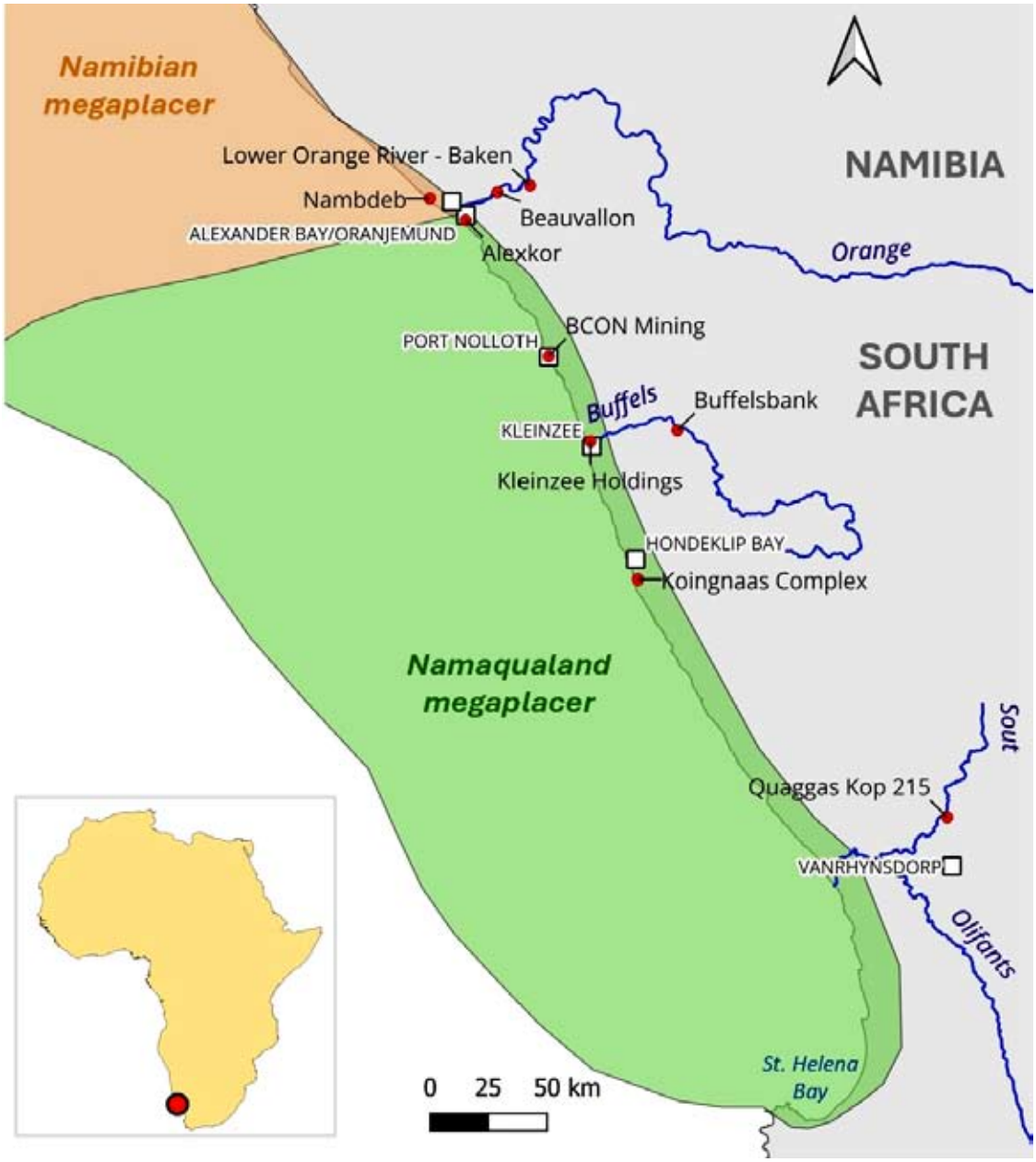




Food and fun at the Port Nolloth Country Club

The fieldtrip (with 28 delegates) visited various prospects and historical, as well as currently operating, mines between Vanrhynsdorp (Quaggas Kop) and Oranjemund (Namdeb). The base for the fieldtrip was the Port Nolloth Country Club—thanks very much to Mary-Lucia, Tana and their team for the lunch packs and the wonderful dinners.

The fieldtrip offered participants a detailed overview of the regional geology, mining history, the role of both small-scale and major industry players, and the challenges currently facing the sector.



Over the past century, the Namaqualand and Namibian megaplacers have together produced around 95% gem-quality secondary diamonds, totalling 123 million carats and 53 million carats respectively. These diamonds have held an average value of over $500 per carat.

In Namaqualand, diamonds are distributed along the west coast, from south of St. Helena Bay to Alexander Bay at the mouth of the Orange River. These secondary diamond deposits are found in various geological settings.

Some are preserved in ancient river systems, which trapped diamonds in alluvial terraces. For example, the Quaggas Kop 215 deposit demonstrates the transport by the paleo-Karoo River, which ceased carrying diamonds around 100 million years ago.

Numerous deposits mined along the Orange River (Lower Orange River–Baken and Beauvallon) and the Buffels River represent remnants of ancient riverbeds. These systems carved into the bedrock, concentrating diamonds in potholes and gullies. Many of these deposits are now buried beneath thick sand layers, making their extraction difficult and expensive.

In addition to fluvial deposits, diamonds also occur in marine environments. These were formed during past sea-level changes that caused shorelines to shift, again trapping diamonds in irregular bedrock near the palaeoshore. Mining companies such as Namdeb, Alexkor, Kleinzee Holdings (previously De Beers) and West Coast Resources have been active in these coastal zones for decades, extracting diamonds from both onshore and offshore deposits. These operations highlight the difficulty of locating diamond-bearing sediments beneath thick coastal cover or deep underwater.

Namdeb has pioneered a unique technique, beach accretion mining, for accessing marine deposits, including the construction of large accretion walls to push back the sea and expose diamond-rich areas now lying 25 m below the actual sea level. This method, managed along 120 km of coastal area, allows extraction of sediments that would otherwise be inaccessible using traditional offshore mining approaches.

Smaller companies such as BCON Mining also play an important role. These operators work in shallow waters using small marine vessels, with divers manually pumping gravel from potholes and depressions in the bedrock. Though smaller in scale, such operations target gravel deposits that large companies are not able to access.

The fieldtrip highlighted how the mining landscape has evolved over the history; areas once considered subeconomic or mines let under care and maintenance are now profitable again due to renewed planning and improved technology. However, even with good control on the grades, the challenges still remain due to their uneven distribution, and also in terms of size and colour. These heterogeneities affect recovery rates and overall project viability, especially in the face of fluctuating diamond prices, which strongly influence the profitability of both large and small-scale operations.

Ultimately, these megaplacers are more than just rich geological formations, they represent decades of adaptation, innovation and determination. As the industry moves forward, the history and ongoing development of mining in the harsh and remote landscapes of Namaqualand and southern Namibia will continue to shape the economy of the area.
The organisers would like to thank all of the venues and the companies that supported both the conference and the fieldtrip.

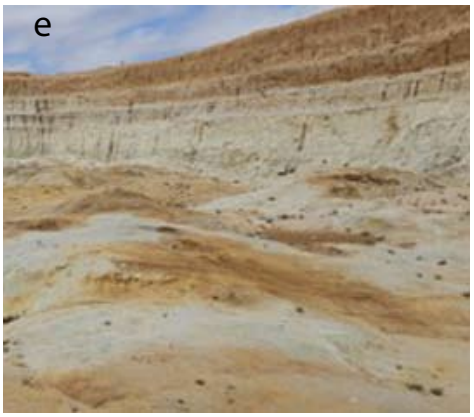
The conference organisers would also like to thank the various event and annual sponsors, without which the conference could never have succeeded. The conference also boasted a photo competition, with entries to reflect the spirit of Namaqualand. The three winners, whose photos will all be used as covers in upcoming *Geobulletins* are:

- First Place: Platbakkies (Mike de Wit)
- Second Place: The old HMS and sort house at Alexander Bay (Kabelo Mongalo)
- Third Place: The Fish River Canyon (Wony Diergaardt)

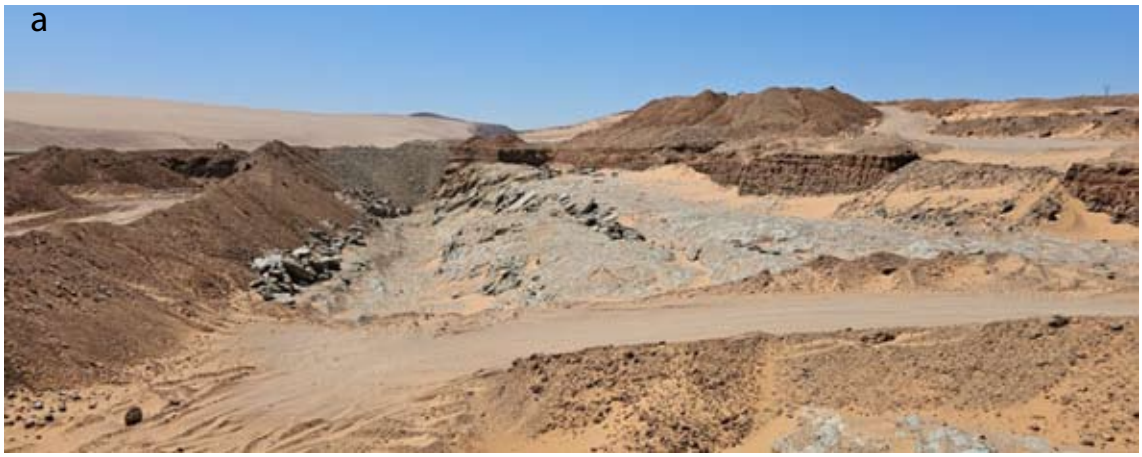
The organisers of the conference and fieldtrip would like to thank each and every delegate for sharing this once-in-a-lifetime event with us. We hope you enjoyed it as much as we did.

Compiled by ***Tania Marshall*** *and* ***Leonard Cornuz***

Quaggas Kop 215 deposit. a) Upper layer of gravel (+148 m) (not economical). Braided river system. The section on the picture is interpreted as bar tail (more sand than gravel). b) Basal gravel in scour/meander (+121 m). Everything is covered by scree material. c) Percussion scars on gravel of dolerite, jasper, quartz. d) Basal gravel found in the tailings.



Koingnass Mine. a) SL20 channel. b) Upper gravel layer; the lower one is covered (6869 channel). c) Boulder as fixed trap site (6869 channel). d) Typical "Bird Seed" gravels. e) Fine Green Sands cover much of the +50 m marine package (6869 channel).



Beauvallon Mine.
a) Baxter hole. Ave. 10 m of overburden.
b) Remnant gravel in a silcreted conglomerate.

Buffelsbank Mine below.
a) Augen gneiss bedrock with fine-grained sand cover. b) Dyke in augen gneiss bedrock. c) Zama zama tunnel.

Kleinzee. a) Discussing the bedrock features. b) Fluvial features.

Lower Orange Rive–Baken Mine.

Namdeb. a) Bedrock cleaning (seawall in the background).
b) Bedrock cleaning with Transvac.
c) Overburden removal (view from on top of the seawall).

BCon Mining. a) Learning about decompression sickness.
b) Tuff bags off the boats waiting to be processed.
c) Small mining vessels in Port Nolloth harbour.

Group Photo at Koingnaas Mine.

The venues and companies that hosted us.

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LIFESTYLE LODGE

COUNTRY CLUB PORT NOLLOTH

LOWER ORANGE RIVER
DIAMONDS

West Coast
Resources

ALEXKOR

NAMDEB
On Diamonds We Build

Quaggas Kop

Koingnaas

Kleinzee Holdings (Pty) Ltd

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Grootderm/Beauvallon Mine

Buffels River/Marine Mines

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First Place in the Namaqualand Diamond Centenary Photo Competition: 'Platbakkies' by Mike de Wit.

Second Place in the Namaqualand Diamond Centenary Photo Competition: 'The old HMS and sort house at Alexander Bay' by Kabelo Mongalo.

Third Place in the Namaqualand Diamond Centenary Photo Competition: 'The Fish River Canyon' by Wony Diergaardt.

geoheritage

Unveiling of Darwin's Bust on Simon's Town Jetty, 20 April 2025

Charles Darwin left Simon's Town aboard *HMS Beagle* on 18 June 1836 and docked in Falmouth, in SW England, on 2 October 1836. He was already regarded so highly by the geologists of London that he, in 1838, was invited to become the Secretary of the Geological Society of London, itself the oldest Geological Society in the world, founded in 1807.

Our Geological Society of South Africa was instituted in 1895 and our Western Cape Branch started in 1979. I am a member of its Geoheritage Group and we have erected a suite of interpretive plaques all over the Western Cape.

Andrew Darwin, great-great-grandson of Charles Darwin, speaking before unveiling the new bust, by Johan Steyn, of Darwin as the 27-year-old man he was when visiting Simon's Town in June 1836.

Two are in Hout Bay. One explains the geology of the manganese deposits above the NE corner of the bay, on the slopes of Constantiaberg. The other is on the viewpoint, opposite Hangberg, describing our world-famous Chapman's Peak Drive. Its geology is identical to that of Simon's Town, namely Cape Granite, 540 million years old, overlain by younger sandstones of the Table Mountain Group, about 500 million years old. These rocks, both at Hout Bay and Simon's Bay, are intruded by black dolerite dykes, about 130 million years old, best seen at Froggy Pond on the southern edge of Simon's Town.

During his short visit to the Western Cape, Darwin—a keen horse-rider—undertook a 4-day horse-ride from Cape Town to Paarl, Franschhoek, Houw Hoek and Sir Lowry's Pass. Only Paarl Rock impressed

John Rogers on the Simon's Town Jetty, explaining the role of the Geoheritage Group of the Western Cape Branch of the Geological Society of South Africa during the Unveiling Ceremony, on Easter Sunday, 20 April 2025, of the new bust of Charles Darwin. Veiled bust and submarine in the background. (Photo: David Broad)

Johan Steyn, Lucy and Andrew Darwin and Eddie Andrews, Deputy Mayor of Cape Town, with the new Darwin bust.

him, when compared to his exciting crossing of the Andes between Chile and Argentina.

He was taken to the Sea Point Contact beside Queen's Beach by Dr Andrew Smith, a Royal Navy surgeon and a biologist, based in Simon's Town. The Sea Point Contact is world-renowned, where the Cape Granite intrudes, in dramatic fashion, into the oldest rocks in the Cape Peninsula, the marine mudstones of the Tygerberg Formation of the Malmesbury Group, about 560 million years old. Darwin collected several samples there and shipped them to England.

At the time, in Europe, there was a raging controversy between Neptunian Geologists and Plutonic Geologists. Neptunian Geologists believed that all rocks were deposited underwater, so that all rocks were sedimentary, like the river-sandstones of the Table Mountain Group.

In contrast, the Plutonic Geologists were convinced that some rocks were derived from magma, deep within the Earth's Crust where temperatures are hot enough to melt all rocks. All miners in South Africa's gold and platinum mines need major ventilation to cool their working spaces, deep underground. The younger granite at the Sea Point Contact has so intricately intruded the dark mudstones of the older Tygerberg Formation that it was referred to as a 'migmatite', or mixed-up rock.

The Dutch schooner, Oosterschelde, in Simon's Bay on 20 April 2025.

Geoheritage

New sign installed on Simon's Town Jetty, describing the visit of Charles Darwin to Simon's Town in June 1836, aboard the HMS Beagle. Designed by Jim Hallinan of the City of Cape Town. Unveiled 20 April 2025.

In 2013, after a visit to the exquisitely restored Down House just south of London, where Charles and Emma Darwin raised a happy family of 10 children, my wife and I visited the Darwin section of the Sedgwick Earth Science Museum in Cambridge. There we found Darwin's boulder of 'migmatite' from the Sea Point Contact on display, intriguingly labelled '*Migmatite, South Africa*'. I left a message for the curator, suggesting that '*Sea Point, Cape Town'* be added to the label.

bronze plaques at the Sea Point Contact, but metal thieves stole them in 2005, twenty years ago.

In 2009, the world celebrated the 200th Anniversary of the birth of Charles Darwin, and the City of Cape Town, on Darwin's birthday on 9 February, unveiled new plastic plaques, which were of no use to metal thieves but which deteriorated rapidly in the South African sunshine.

Geological Society of South Africa plaque at the Sea Point Contact.

New ceramic plaques designed and installed by a team from the City of Cape Town, led by Councillor Nicola Jowell, Philip Smith, David Hart and Christoffel Smalberger. Musa Mhlanga of the University of the Western Cape, supervised by Professor Russell Bailie, was awarded his MSc in 2022 for his research on the Sea Point Contact.

Our Geoheritage Group then encouraged the City of Cape Town to replace them with ceramic plaques, with the incentive to be ready for the *Darwin200* initiative in 2025. The new plaques were installed by the City of Cape Town on 24 April 2025, in collaboration with our Geoheritage Group and Cape Heritage.

One plaque describes the visit of Charles Darwin and the other the latest geological research at the University of the Western Cape by Musa Mhlanga, from his excellent MSc thesis.

Charles Darwin is my GeoHero!

John Rogers

All photos, unless otherwise indicated, were supplied by the author.

Geoheritage

Sea Point Contact

welcome

Welcome Letter from the Chair of GeoCongress 2025

It is with great pleasure and enthusiasm that we announce that the 2025 GeoCongress is right around the corner.

This landmark event in the South African geological calendar will take place between 23–27 June, and promises to be a dynamic gathering of geoscientists from across the country and beyond. Under this year's theme, "Embracing change through collaboration", we aim to foster engaging discussions, showcase cutting-edge research, and strengthen connections across academia, industry and government.

GeoCongress has long been a platform for both established and emerging voices in the geosciences, and 2025 will be no exception. The programme will feature six keynote addresses by leading experts, diverse technical sessions, workshops, and field excursions—designed to reflect the evolving challenges and opportunities in our field.

As geoscientists, we find ourselves at the intersection of science and society, contributing to pressing issues such as resource sustainability, climate change adaptation, natural hazard mitigation, and technological innovation. GeoCongress 2025 invites you to be part of these crucial conversations, to share your insights, and to explore collaborative paths forward.

Whether you are a returning participant or a first-time attendee, we look forward to welcoming you to a memorable and enriching experience. We are confident that GeoCongress 2025 will offer not only a forum for scientific exchange but also a celebration of the vibrant and resilient geoscience community in South Africa.

We look forward to seeing you at GeoCongress 2025!

Warm regards,

Martin Clark
Chair, Local Organising Committee
University of the Free State UFS

GEOCONGRESS 2025
EMBRACING CHANGE THROUGH COLLABORATION

Geocongress Programme at a Glance

The full programme with presentation details can be found at https://geocongress2025.org.za/ .
The abstract volume will be published in digital format on the conference website prior to Geocongress.
There is still time to register as a delegate, but abstract submission is closed.

Monday 23 June

04:00	Beatrix Mine excursion	
07:30-08:30	Workshop registration	Geology Department
08:00-16:45	Resource Geology workshop	Geology Department
08:00	Kimberley excursion	
09:00	Florisbad excursion	

Tuesday 24 June

07:30-8:00	Workshop registration	Geology Department
08:00-13:00	Samcodes workshop	Geology Department
14:00-15:45	Cimera workshop	Geology Department
16:00-18:00	Drone Technologies workshop	Geology Department
17:00-20:00	Welcome function	EBW Lower foyer

Wednesday 25 June

08:00-08:45	Morning Tea	EBW Lower Foyer
08:45 – 9:30	Opening addresses	EBW Auditorium
9:30-10:15	Plenary #1	EBW Auditorium
10:15-10:45	AM Tea	EBW Lower foyer
10:45-12:15	Oral Presentations	
12:15-13:15	Lunch	Wynard Mouton foyer
13:15-14:45	Oral Presentations	
14:45-15:15	PM Tea	EBW Lower Foyer
15:15-16:00	Plenary #2	EBW Auditorium
16:00-17:30	Poster Session 1	EBW Lower Foyer

Thursday 26 June

07:45-08:15	Morning Tea	EBW Lower Foyer
08:15-9:00	Plenary #3	EBW Auditorium
9:00-10:15	Oral Presentations	
10:15-10:45	AM Tea	EBW Lower foyer
10:45-12:15	Oral Presentations	
12:15-13:15	Lunch	EBW Lower foyer
13:15-14:45	Oral Presentations	
14:45-15:15	PM Tea	EBW Lower foyer
15:15-16:00	Plenary #4	EBW Auditorium
16:00-17:30	Poster Session 2	EBW Lower Foyer
19:00-22:00	Gala Dinner	Modlec Hall

Friday 27 June

07:45-08:15	Morning Tea	EBW Lower Foyer
8:15-9:00	Plenary #5	EBW Auditorium
9:00-10:15	Oral Presentations	
10:15-10:45	AM Tea	EBW Lower Foyer
10:45-12:15	Oral Presentations	
12:15-13:15	Lunch	EBW Lower Foyer
13:15-14:00	Plenary #6	EBW Auditorium
14:00-15:00	Oral Presentations	
15:00-15:30	PM Tea	EBW Lower Foyer
15:30-16:15	Oral Presentations	
16:15-16:30	Closing Ceremony	EBW Auditorium

mineral scene

Sphalerite

Sphalerite (Zn,Fe)S was chosen as the featured mineral for this issue as it is a well-known sulphide mined for zinc. Perhaps the most famous deposits are the carbonate-hosted MVT (Mississippi Valley-type) deposits exploited extensively in the USA for lead and zinc. The sphalerite (and galena) is typically present in massive form in limestone or dolostone, but due to carbonate dissolution, cavity filling by secondary crystallisation of the sulphides produces aesthetical crystal specimens, some of which are shown here. Associated minerals are commonly galena, calcite, dolomite, fluorite and pyrite.

Sphalerite is not restricted to MVT deposits but occurs hydrothermally and as a secondary mineral. Such is the case in South Africa where the largest, euhedral sphalerite crystals known from the region are found in the Witwatersrand gold deposits.

Sphalerite was named in 1847 from the Greek "sphaleros", meaning mistaken or treacherous, because this zinc sulphide was often mistaken for galena, the lead sulphide, but yielded no lead. Although named in the 19th century, Georgius Agricola had already identified the mineral in 1546 and named it blende. Crystals have a typical resinous, waxy lustre and are most commonly dark-orange to amber, but can also be brown, black or, rarely, green. Trace amounts of iron cause the darkening of the colour and also a transition from transparent to opaque. Sphalerite is common in some sedimentary and hydrothermal ore deposits. Zinc is used in bronze and brass alloys and as a protective coating on steel (galvanising). It has further applications as a filler in paint and rubber, as an oxide in feed additives and soil rejuvenation and in special zinc batteries.

Bruce Cairncross
Department of Geology, University of Johannesburg (brucec@uj.ac.za)

A cluster of dark-amber, well-formed translucent sphalerite crystals with cubic purple fluorite, 7.2 cm. The specimen was collected in the Denton Mine, southern Illinois, USA. This was a Pb-Zn-Ag-Ba-fluorspar mine that operated from 1979 to 1993 (https://www.mindat.org/loc-3756.html).

Another Denton Mine specimen, 4.5 cm. Sphalerite is perched on fluorite and both are studded by small chalcopyrite crystals.

Transparent amber-orange sphalerite crystals on dolomite, associated with fluorite and calcite. Field of view is 3.2 cm. This is a specimen dating back to the 1960s, from the Penfield Quarry, Monroe County, New York, USA. The quarry extracted dolomite for road metal.

Massive sphalerite in a vein lined by white recrystallised dolomite, in grey dolomite, 16.5 cm. Bushy Park lead-zinc deposit, Griquatown district, Northern Cape Province, South Africa.

Stacked sphalerite crystals associated with white dolomite and yellow baryte. Field of view is 3.7 cm. Rosh Pinah Mine, Namibia.

Typical sphalerite displaying striations on the crystal faces, associated with yellow baryte, 5.1 cm. Randfontein Estates gold mine, South Africa.

A group of sphalerite crystals with minor pale yellow quartz, 7.6 cm. These were collected in the 1960s in the Free State Geduld gold mine, South Africa. A handful of these are known to exist and are the largest known southern African sphalerite crystals.

obituaries

Joachim Klaus Schweitzer †

Joachim (Jochen) Klaus Schweitzer
27 June 1955 to 3 February 2025

Dr Jochen Schweitzer

Jochen was born in Dernbach, in the Westerwald region of Germany, on the 27th of June, 1955. He described himself as a very energetic and adventurous lad, which an adult would interpret to mean a "naughty boy", unlike his brother who preferred a less hectic life. As a youth, Jochen acquired three important skills that stood him in good stead throughout his life, namely courage, self-confidence and optimism.

Jochen's father Friedrich was a school teacher, specialising in remedial teaching of young children. His methods gained great acclaim and his school at Westerburg became a centre for remedial education. This centre was named in his honour. He had very broad interests, especially in music (choral, piano and organ) and in nature, notably birds, plants and especially fossils. Jochen took particularly well to fossil hunting and frequently accompanied his father on fossil hunting expeditions. At home, Jochen spent many hours preparing the fossils they had collected. His father became an accomplished brachiopod specialist and even has a species named in this honour. Jochen's father was also a poet. Jochen compiled a biography of his father into which he wove the poems. Some of them were illustrated with comical sketches by his mother. The book was published by the Westerburg historical society.

Jochen attended the local primary and high schools in Westerburg. After leaving school, he completed his two years compulsory military training in the medical corps. He chose the medical corps because he believed he would acquire more useful life skills in that division than any other branch of the military. Moreover, it increased his access to the ladies.

Following his military training he enrolled at the Johannes Gutenberg University in Mainz where he completed his BSc (1978) and MSc (1982) degrees. It seemed his love of fossils led him into geology and especially palaeontology, a field in which he decided to specialise. However, as his studies progressed, he chose not to continue with palaeontology but to branch out into igneous petrology. His MSc supervisor was a famous geologist, Prof Alfred Kröner, who had spent many years as a Research Fellow and at one time Head of the University of Cape Town's Precambrian Research Unit. The title of Jochen's thesis was: "Geochemistry and

Jochen celebrating Shango's 12th Birthday on 1 April 2016.

The founders of Shango Solutions at a board meeting in 2016. From left to right: Dr Richard Stewart, Dr Jochen Schweitzer and Mr Peter Kramers.

petrogenesis of early Proterozoic intracratonic volcanic rocks in the Ventersdorp Supergroup, South Africa". Jochen thus forged deep links with South Africa long before he actually arrived here.

Having graduated with an MSc, Jochen needed to find a job and possibly set up a career. He came across an advert from the Bushveld Research Institute at the University of Pretoria, which was offering bursaries to suitable PhD candidates to carry out research on the Bushveld Complex. His application was successful and he arrived to take up his place in 1983. Matters were not quite straightforward though, because he brought with him a young wife and a daughter, then only a few months old.

Jochen's research topic was the petrology and geochemistry of the Dullstroom Group, which represents the transition between the acid volcanics of the Rooiberg Group (the largest acid volcanic province on Earth) and the mafic rocks of the Bushveld Complex (the largest layered mafic complex on Earth). This interface is exceptionally important in reconstructing Earth history at a critical time in the geological evolution of southern Africa, the more so because the Vredefort Dome formed around this time as well. The research work involved detailed geological mapping and sample collecting in an extremely remote part of the country. Field work was followed by petrographic and chemical analysis of the samples in the laboratory at the university.

Jochen's financial situation was very difficult because the bursary was insufficient to support him and his family. He took on extra work in the laboratory preparing samples for analysis in order to raise additional funds. He received payment based on the number of samples he prepared and often slept over on the floor of the lab to increase his sample production rate. Occasionally his cash flow situation was so bad that he would write bank cheques to pay for groceries, knowing full well that he did not have funds in his bank account to honour those cheques.

The bursary came to an end in 1987, but fortunately Jochen found employment at the Chamber of Mines

Jochen together with Mr Ken Lovell at the Naukluft hiking trail in Namibia in August 2002.

Jochen and Prof Sybrand de Waal at Shango's 5th birthday party on 1 April 2009.

Research Organisation (COMRO). He submitted his thesis to the University of Pretoria, but the external examiner ruled that the thesis as it stood did not meet the standards required for the award of the PhD degree. This was a devastating blow personally, although fortunately it had no implications for Jochen's position at COMRO.

The Chamber of Mines had been formed by the big gold mining companies soon after the discovery of gold on the Witwatersrand. They later pooled their resources to create COMRO in order to investigate matters of common interest. The gold mineralisation they were interested in occurred in sedimentary rocks, notably conglomerates of the Witwatersrand Basin. All of Jochen's research up to this point (both MSc and PhD) had been concerned with igneous rocks, which are very different from sedimentary rocks. It was a very steep learning curve for him to retool himself so as to be able to work alongside specialists in sedimentology. To make things worse, he was essentially alone as there were very few hands-on geologists at COMRO. Most were involved in applied fields such as mineral chemistry, geophysics and rock mechanics.

Over his first ten years at COMRO, Jochen mastered several fields of research and published papers and conference presentations dealing with gold mineralisation in various Witwatersrand Reefs, rock mechanic properties and the associated safety issues, underground remote sensing using radar, and mechanised mining techniques, especially at deep levels. An important achievement was the formation of the Ventersdorp Contact Reef and Kimberley reefs working groups. These reefs are developed across several different mine properties, but traditionally there had been very little collaboration between adjacent mines. Jochen persuaded the mining houses to cooperate fully in these groups and exchange technical information freely. As a consequence, an overall, comprehensive understanding of the VCR and the Kimberley reefs was obtained for the first time. The results of the VCR Working Group were presented at a dedicated conference, the proceedings of which were published as a special issue of the *South African Journal of Geology* in 1994. The findings of the Kimberley Reef Working Group were incorporated into a publication by the South African Committee for Stratigraphy entitled: "A revised stratigraphic

framework for the Witwatersrand Supergroup" in 2006.

His greatly improved financial situation and his mastery of the COMRO job requirements enabled him to return his attention to his PhD research. With more time on his hands he was able to analyse the data he had collected in much greater detail. He compiled his findings in eight full-length papers and conference abstracts. The augmented body of work was submitted to the external examiner who recommended award of the degree, which was presented in 1998.

In 1996, in recognition of his proven technical and managerial skills, Jochen was appointed Thrust Area Manager at COMRO. His responsibilities included management of the Geological and Geophysical divisions and fostering inter-division collaboration between Rock Engineering, Mining Engineering, Geophysics, Surveying, Geology and Mine Planning. There was a strong bias towards developing technologies that would be appropriate for very deep mines that would be developed in the future. Investigation of remote sensing techniques that could delineate ore bodies more precisely were actively pursued and included seismic profiling, borehole radar and radio-wave tomography, resistivity tomography and ground-penetrating radar.

Towards the middle of the 1990s, the mining houses entered into a state of decline. Many were unbundled and some moved their base of operation out of South Africa. Their commitment to COMRO declined. To protect the resources and expertise, the CSIR took over COMRO, renaming it MININGTEK.

In 2001, Jochen was appointed Programme Manager–Mining Systems in the CSIR's Division of Mining Technology. By this stage his work had become purely administrative. Fundraising had also become an important component of the work responsibility. Regular grants from the Chamber of Mines and government were declining and MININGTEK increasingly had to solicit contract work to bring in money.

Sightseeing in Perth prior to the Africa Down Under conference in 2018. From left to right: Prof Terence McCarthy, Erna McCarthy, Grace Coetzee and Jochen.

Jochen was just 46 years old at that stage and he didn't like the prospect of being a fundraiser and manager for the rest of his life. He longed for the excitement of physically working, both underground and in the field. Some of his colleagues felt the same, so he and two others decided to leave MININGTEK and form their own consulting company. They were Richard Stewart, a young geologist who had recently completed his PhD degree on the Central Witwatersrand goldfield, and Peter Kramers, a metallurgist who had developed backfill technology suitable for South African gold and platinum mines. They named their company "Shango Solutions". Shango is a word from the Venda language which means "earth". The company was inaugurated on 1 April 2004.

Finding suitable projects was tough at first, but Jochen's network of contacts in the industry and his reputation for getting things done saw the

workflow rise. Also in their favour was a global commodity boom, which commenced in the early 2000s. The staff complement grew steadily, but remained technically focussed. HR and Finance were outsourced. Jochen built up a mix of young technically savvy people and a few older, experienced individuals (some retired or semi-retired) to manage the wide range of projects that were taken on and also to mentor the younger staff members. He set the minimum qualification for employment as a geologist to be a BSc Hons degree. He also established ties with specialists in various disciplines not represented in-house. Particularly important was Jim Pooley of Bara Consulting who joined Shango on several evaluation and mining projects. Jochen's maxim was: "We don't know everything, but we know where to find it". The staff complement rose steadily from the original three to an average of around 30 currently.

Shango also took to employing students during their vacations (often selected on the basis of recommendations from their academic lecturers) and many of these went on to become permanent staff members. Several hundred young people thus had their first geological work experience at Shango. Often big projects would come in that required high-intensity work to begin with, especially data capturing, but only for short periods. To meet this need, Shango would employ graduates who were looking for work on short term contracts. Many of these ended up as permanent Shango staff members.

Shango undertook an incredible variety of projects, including water pollution studies, on-shore gas exploration, underground and surface geological mapping, capturing assay and geological mapping from defunct mines, estimating resource content in mine waste dumps, managing drilling programs, carrying out geological modelling, resource estimation, preparing competent persons reports and so forth. Shango also undertook target generation. It played a significant role in the discovery of additional gold resources along the western margin of the Free State gold field, which is now the subject of a White Rivers Exploration/ Harmony joint venture, and also identified a further two potential gold deposits within the Witwatersrand basin. Shango also identified the site where PTM discovered the Waterberg platinum deposit.

Jochen was fanatical about quality (QA/QC). All numeric data such as assays or sample coordinates were captured twice by different people. It is estimated that Shango has delivered about 1 600 reports to clients since its inception. Jochen proofed every single one. Although English was his second language, his knowledge of its grammar and spelling was simply amazing. He was also very fussy about formatting both of the text and diagrams. He set very high standards for his staff, not only in respect of content but also presentation.

Jochen believed that the success of Shango should be shared with less fortunate people. He teamed

Shango's 18th Birthday Party celebration in front of the office on 1 April 2022. From left to right: Jonathan Hainsworth, Ken Lovell, Jochen and Dr Sharad Master.

up with a former colleague who had formed an organisation called "Humanity at Last—Life Skills" (HALLS). The programme was aimed at reforming convicts who were serving long-term prison sentences. Shango provided financial and logistical support for their activities. This initiative ceased due to Covid and the death of its main proponent. The company now focuses its charity work on children through its support for EduFun, which enhances the schooling of grade 2 and 3 learners at a school in the informal settlement of Diepsloot.

In addition to his commitments at Shango, Jochen was also active in several societies, including the Geological Society of South Africa (vice-president, Professional Affairs), Fellow of the Southern African Institute of Mining and Metallurgy, South African Geophysics Society, Transvaal Task Group of SACS, Sedimentology Division of the GSSA (Secretary for four years), Chairman of the VCR Working Group, and Chairman of the Kimberley Reefs Working Group.

He was a very modest person and never tried to make himself appear more important than others. There are no dress codes at Shango. Jochen never had his own office but shared a large room with up to four other staff members, sometimes including vacation students. The remaining staff were scattered through two large open-plan rooms. Coffee was free and prior to Covid, lunch was also provided to the staff. The meals were restaurant quality. Initially they were prepared by a retired chef whose wife worked at Shango. Later they were specially prepared for Shango at The Doggies restaurant close to the office. Lunch was taken in a small thatched area known as the Boma, which had been built on a landing on the office fire escape. Those who could not fit around the table sat on the stairs. A few took lunch to their desks. When it rained, lunch was taken in the covered parking ground. Lunch at the Boma was not just an opportunity to eat but was also a place where wonderfully stimulating discussions took place. Visiting clients added to the level of interest. Beers and wine were free for anyone still at the office after 4:30 pm. Jochen also seemed to have an endless supply of jokes, which filled up the odd patches of silence. He was extremely generous. For example, to celebrate Shango's 10th birthday, he took the entire Shango staff for a two-week holiday in Westerburg, the town of his birth, which also coincided with the annual Kermis festival in the village. A wonderful time was had by all. The logistics were quite challenging because many of the staff did not have passports and most had not flown before.

Jochen built Shango into a flourishing geological consultancy and its list of regular clients includes all of the large mining companies operating in South Africa. Its reach extends over most of Africa and several overseas countries as well. As the years went by, Jochen became increasingly concerned about succession. He decided to devolve management onto a small Management Committee consisting of himself and four senior staffers with Stefanie Weise in the Chair.

Jochen was diagnosed with inoperable cancer in January 2023 and was put on chemotherapy. At that time, he and his partner Mary were building a house on a wildlife estate outside Barberton to which they planned to slowly retire. However, disaster struck in January 2024 when their home in Johannesburg caught on fire following a lightning strike. Extinguishing the fire resulted in severe water damage to their belongings. After a short stay in a hotel in Johannesburg the couple moved to their new Barberton home in February 2024. Jochen's treatment was relocated to a medical facility in Nelspruit. Contact with Shango was sustained by Zoom meetings. He continued to participate in Management Committee meetings and editing company reports until the end of January 2025. However, his health took a sudden downturn and he sadly passed away on the 3 February 2025. He was an outstanding, inspirational figure, and will be missed by many business associates, colleagues and friends.

Terence McCarthy

GSSA events 2025

Date	Event	Location
24–27 June	Geocongress 2025	UFS Bloemfontein
17 July	• Soft Skills for Geoscientists / Mentorship Group • GSSA AGM	JHB Country Club (Hybrid)
5 August	Introduction to Drilling Workshop	Online
5–6 September	Structural Geology Course & Fieldtrip	Southbroom, KZN Coast
9 September	Professionalism & Code of Ethics Workshop	Online
29–30 September	SAMREC/SAMVAL Compliance and JSE Reporting / 25th Anniversary of SAMREC	JHB Country Club (Hybrid)
TBD September	Data Analytics & Machine Learning	Online
21–22 October	Mineral Resources Mastery: Tools, Trends & Industry Insights	Online
12–13 November	African Exploration Showcase	JHB Country Club (Hybrid)
TBD	ESG Update	Hybrid
	New Cadastre System (with Minerals Council)	Online
	Updated SACNASP Bill (with SACNASP)	Online
	Marine Geoscience	Online & Site Visit
	Mapmaking (MINROM)	Online

Please send updated version

2024 rates for 2025

rates card 2025 incl VAT

1. ADVERTISING RATES (Incl. VAT & Agency Commission)

Geobulletin is published by the Geological Society of South Africa (GSSA) and appears quarterly during March, June, September and December each year in digital and print format.

	Per editionl 1-3 inserts	Per editionl 4 Inserts
Colour		
Full Pg F/C	R6 250.00	R5 500.00
Half Pg F/C	R3 750.00	R3 000.00
Quarter Pg F/C	R2 560.00	R2 000.00
Banner (horizontal)	R1 250.00	R1 150.00

Special Positions (Front & Back)	Inside Cover F&B R10 000.00	Outer Cover F&B R12 000.00

Professional Directory: R1 000.00

Size: 45 x 90 mm wide

Advertorial rate per page:

R7 500.00	R7 500.00

2. MECHANICAL DETAILS

Trim Size:	297 mm x 210 mm
Full Bleed	297 mm x 210 mm + 5 mm all round
Type Area:	Full Page: 275 mm x 190 mm
Half Page:	135 mm x 190 mm wide (Horizontal ad)
Quarter Page:	135 mm x 95 mm (Vertical ad)
Banner:	210 mm x 75 mm (Horizontal) + 5 mm all round
Screen:	300 DPI or more
Material:	E-mail high resolution PDF in CMYK

3. PRINTING MATERIAL

Material to be supplied as a digital PDF file. Accompanying images should be high resolution in CMYK format (NO RGB or Pantone colours). Any full page material to be trimmed to 297 x 210 mm must include a bleed of 5 mm all round. Any modifications supplied material will be charged to the advertiser at R300.00 per hour. Ads may contain a link to advertisers website.

4. DEADLINES FOR COPY AND ADVERTISING MATERIAL

March issue:	1 February 2025
June issue:	1 May 2025
September issue:	1 August 2025
December issue:	1 November 2025

5. CANCELLATIONS

At least 4 weeks prior to deadline

6. CIRCULATION

Geobulletin is issued in digital format to all members of the GSSA and its local and overseas exchange partners. A printed option is also available for those who opt for it, and the electronic version is available as an open access download on the GSSA website.

7. ADVERTISING BOOKINGS AND SUBMISSION

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8. ADDITIONAL CONTACT INFORMATION

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The design and layout of the adverts is the responsibility of the advertiser. If you wish to utilise the services of the GB graphics and layout supplier, please contact Belinda directly, well in advance of the advert submission deadline to make arrangements.

2025

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