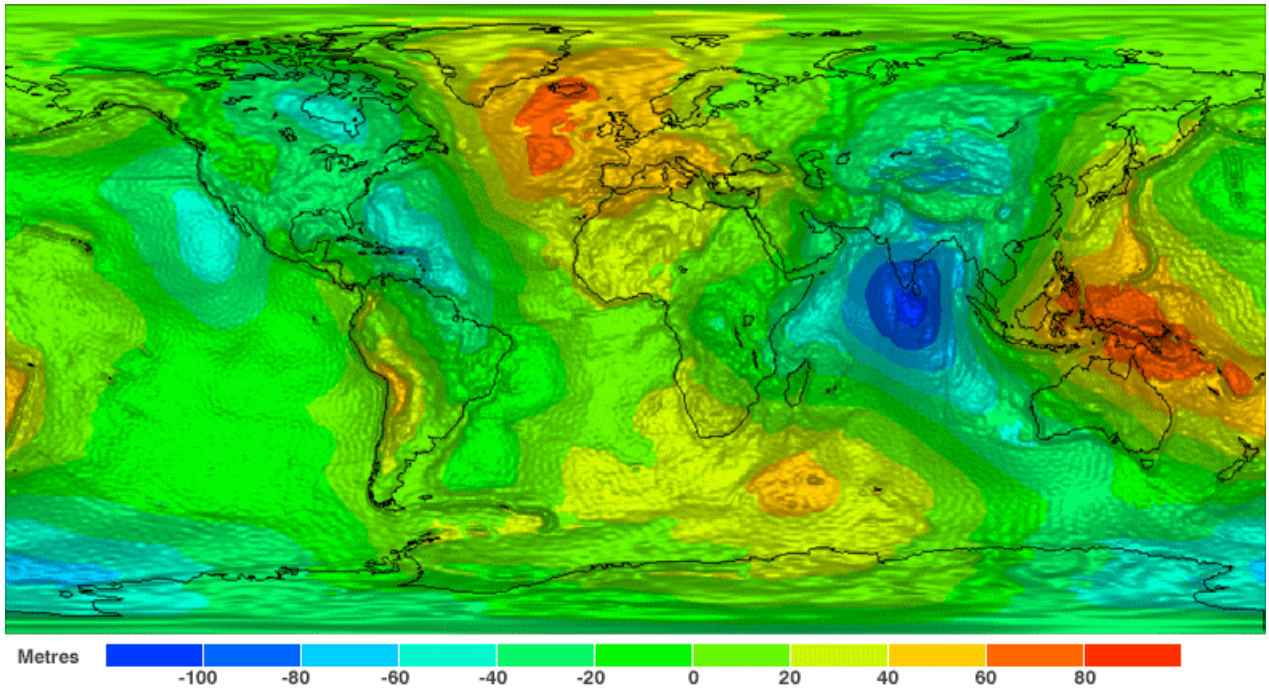


SOUTH AFRICAN GEOPHYSICAL ASSOCIATION

SOUTH AFRICAN GEOPHYSICAL ASSOCIATION

FOUNDED IN 1977



The new geoid as measured by Europe's Goce satellite

There is nothing new under the sun, but there are lots of old things we don't know....
Ambrose Bierce

NOVEMBER 2010

SAGA

Who makes up the current SAGA Comittee:

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President	Stoffel Fourie	Tshwane University	FourieCJS@tut.ac.za
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Past-President	Anton Wolmarans	De Beers	Anton.wolmarans@debeersgroup.com
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Membership	Lindsay Linzer	MeerCAT Geophys	Lindsay.Linzer@gmail.com
Conference Chair	Declan Vogt	CSIR	dvogt@csir.co.za
Technical Papers	Laurent Ameglio	EXIGESA	laurent@exigesa.com

Plus members Solomon Lepphoto, Agnes Jikelo, Fatheela Kaldine and Jaco Smit.

Western Cape Branch Committee			
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Vice chairman	Geoff Jackson	Tullowoil	Geoffrey.jackson@tullowoil.com
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FEES

Anyone wishing to join SAGA can please contact Charlene above.

Members	R250.00
Associate/affiliate members	R250.00
Student members	R60.00
Sustaining/institutional members	R2500.00/US\$775.00
Overseas members	US\$37.50
SADC Countries	R250.00

ADVERTISEMENTS

Anyone wishing to advertise in the SAGA newsletter must please contact the Editor (Gavin Selfe at gavin@sepman.co.za).

Rates (per issue) are as shown below;

½ page ad. b/w	R100/\$50	Full page b/w R200/\$100
Full colour full page (min. 2 issues)	R625/\$625	
Brochure insert (<5 pages)	R500/\$500	

Adverts must preferably be submitted in either MS Word, Pdf or Jpg format, or some other format readable by either Eg. Ascii, etc.

Manual and Course Notes Price List

(to order, contact SAGA administrator)

Manuals for Technicians

	<i>Local</i>	<i>Overseas</i>
The Magnetic Method *, AT Roux 1980. 71 p.	R40	US\$40
Technical Manual on Radiometrics *DJ Richards 1981	R25	US\$25
Electromagnetic Method*	R70	US\$70
J S V van Zijl & EO Kostlin 1986. 302p.		
S.A. Geophysical Review, Vol. 1 1996	R50	US\$40
S.A. Geophysical Review, Vol. 2 1998	R50	US\$40
S.A. Geophysical Review, Vol. 3 1999	R50	US\$40
Practical Manual in the Resistivity Method	R50	US\$50
J S V van Zijl 1985. 136p.		
Statistical Methods in Mining Seismology, A. Kijko	R100	US\$25

Course Notes

Aeromagnetics - P Hood & M Redford	R75	US\$75
Induced Polarisation - J Summer & K Zonge	R100	US\$55
Electromagnetics - G West & J MacNae	R110	US\$60
Seismic Interpretation - T L Davis 1987	R50	US\$40
Extended Abstracts 1st SAGA Technical Meeting	R25	US\$25
Extended Abstracts 2nd SAGA Technical Meeting	R25	US\$25
Extended Abstracts 3rd SAGA Technical Meeting	R25	US\$25
Extended Abstracts 4th SAGA Technical Meeting	R25	US\$25
Extended Abstracts 5th SAGA Technical Meeting	R50	US\$25
Extended Abstracts 6th SAGA Technical Meeting	R100	US\$50

*Students half price # Prices subject to change - copies made from masters

From the Presidents Desk

SAGA is in the process of organizing the next SAGA Meeting in Cape Town next year, under the leadership of George Smith. The next SAGA conference is a collaboration with Inkaba yeAfrica (for the third time already), GASA and the GSSA. The Geosynthesis Conference will be a major event and we ask all our members to advertise it widely to non-SAGA members.

The global economic crisis had an impact on the Geophysics community and also on the SAGA's planning. A fair number of our members were retrenched and/or relocated. This crisis also impacted on our ability to organise short courses and workshops, and we will now evaluate the economic environment for future events.

This edition of the SAGA Newsletter is the first from the pen of Gavin Selfe. Gavin has done a sterling job and I hope that this Newsletter is the first of many to come. Thank you, Gavin.

We wish all of our SAGA members a Merry Christmas and a very prosperous 2011. Please be safe while you enjoy the end of the year festivities and the well deserved break. Best Wishes, Stoffel Fourie

From the Editors pen

Well it's been a busy year, 2010, and as always it has flown past faster than ever. Apologies for the fact that this is the first newsletter this year, in 2011 we are going to do a lot better. In this issue we report back on the health of our association, Wits University geophysics, Inkaba yeAfrika and AfricaArray as well as abuse our right to publish the usual gamut of poor jokes and irrelevant asides.

SAGA is proud to announce that one of our own, Dr Susan Webb at Wits University, has been elected as the second vice president for the Society of Exploration Geophysicists (SEG). Sue is also the SEG 2010 Honorary Lecturer for Africa and the Middle East. Hearty congratulations to you Sue.

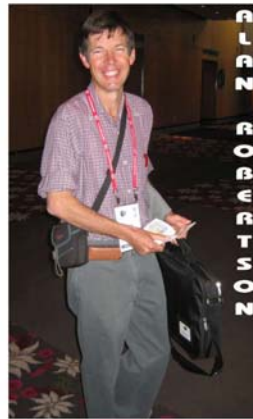
Our cover image, the new geoid generated by the Goce satellite, has an article all to itself in this issue. It's very interesting I must say.

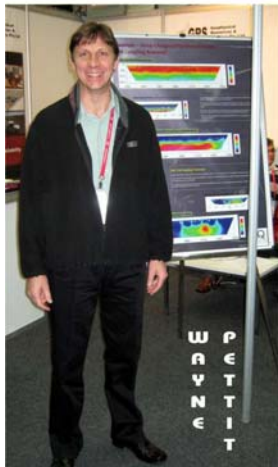
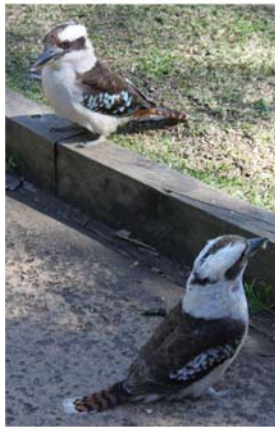
The SAGA conference held in Swaziland in Sept 2009 was magnificent and people are still talking about it. We say a BIG congratulations to the organising committee. The papers were excellent in quality, the venue superb and some of the parties legendary, particularly the 'House on Fire'. I like your work, Stefaans.

The ASEG this year was held in Sydney and it was an excellent conference requiring four (yes, 4) streams at times to accommodate all the papers. It was very well attended internationally and a number of SAGA faces were seen there. An astonishing number of papers were given on mapping ground water quality and aquifers with airborne EM. This could well be the next big thing in our profession. Watch this space.

As Stoffel mentioned, HUGE excitement is being generated by next years combined SAGA/GSSA/GASA conference in Cape Town (see page 9). Never before have we joined forces with the geologists and geo-statisticians in an event of this magnitude. This could well turn out to be the best conference any of us have ever attended. BE THERE, or miss out on the earth science event of the decade, at your peril !!

SAGA MEMBERS SEEN AT THE ASEG AUGUST 2010





(Pics by Gordon Cooper - thanks Gordon)



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GeoSynthesis 2011

Conference & Exhibition

CALL FOR PAPERS & PARTICIPATION

Integrating the Earth Sciences 28 August – 2 September 2011

Cape Town International Convention Centre
Cape Town
South Africa

Presented by: SAGA (South African Geophysical Association), GSSA (Geological Society of South Africa) & GASA (Geostatistical Association of South Africa)
In association with: ILP (International Lithosphere Program) & Inkaba yeAfrica

GeoSynthesis 2011 is an exciting new information exchange forum which will enable improved understanding between the earth science disciplines and between industry, research and policy makers. Over 500 delegates are expected to attend.

It will incorporate a 3-day multi-track conference programme and pre- and post- conference workshops and field trips, an exhibition, a cocktail party and a dinner providing an ideal opportunity to encourage and enhance mutual interaction between delegates, speakers, exhibitors and sponsors.

THEME: Integrating the Earth Sciences

GeoSynthesis 2011 offers an opportunity to contribute to an exciting new forum where the main aim is to encourage greater integration between earth science disciplines. With this objective in mind you are invited to submit a proposal for a paper or a poster. Your contribution may be aligned to (but not limited to) one or more of the following themes.

- Africa's Crust and Mantle
- Africa's Mineral & Hydrocarbon Resources
- Africa's Energy
- Africa's Geoheritage and Africa's Geofuture

CALL FOR PAPERS AND POSTERS

See web site for details on how to submit proposals

www.geosynthesis.org.za

Deadline Dates:

31 January 2011 submission of titles and contact details
31 March 2011 submission of 2 page abstracts
30 April 2011 notification of selected papers

TARGET AUDIENCE

Geoscientists and companies involved in:

- exploration and exploitation of mineral and hydrocarbon resources
- engineering and the environment
- research and development

Policy makers from across Africa

Suppliers of equipment, products and services wishing to gain a better understanding of the future needs of industry

Academics

Undergraduate and postgraduate students

EXHIBITION

Cost: R18,000 per 9 square metre module including shell scheme, fascia name, spot lights, power point and 2 tickets for the cocktail party and dinner. See website for exhibition layout to select your stand: www.geosynthesis.org.za

SPONSORSHIP OPPORTUNITIES

Various types of commercially viable sponsorship opportunities are available to sponsors for GeoSynthesis 2011

1. Gold, Silver and Bronze sponsorship.
2. Name branding of functions.
3. Sponsorship of a variety of specific items.

See web site for details: www.geosynthesis.org.za

ACCOMMODATION

A range of hotels situated within walking distance of the CTICC are available ranging from 2 stars to 5 stars.

These can be booked via the conference online registration form.

See web site for details: www.geosynthesis.org.za

WORKSHOPS AND FIELD TRIPS

Pre- and post- conference workshops and field trips will be available including the Cape Peninsula, the Tanqua Karoo, the wine regions of Robertson and Worcester valleys, the Southern Namaqua Metamorphic Province and the West Coast.

See web site for details: www.geosynthesis.org.za



www.geosynthesis.org.za

SAGA membership status and the health of our society-

Charlene Skipp has kindly made the following figures available to the editor:

- **Current student membership** = 46
- **Current members** = 375
- **Student members who joined in 2010** = 12
- **Members who joined in 2010** = 27

Happily new members, including students, are still joining us. That is great news. On the downside, many of the 375 current members are not paid up for 2010. We appeal to you to support the association and pay your dues.

People on the Move

It is with sadness we say goodbye to several of our colleagues who continue to leave our shores for the greener pastures of Australia and Canada. As much as we hate to see them go, we wish them well in their new lives overseas.

Kazek Trofimczyk, ex-Anglo American, now BHPB based in Perth.

Ockert Terblanche, still with Anglo American but now in Perth.

Keith Fisk, Geotech, now in Perth.

Magdel Combrinck, Geotech, now in Calgary.



Any idea what this is??



Hint: picture was taken in 1956...

It's a hard disk drive from 1956... with **5 MB** of storage!

In September 1956 IBM launched the 305 RAMAC, the first 'SUPER' computer with a hard disk drive (HDD). The HDD weighed over a ton and stored a 'whopping' 5 MB of data.

Do you appreciate your 8 GB memory stick a little more now?

Africa is witnessing the birth of a new ocean, according to scientists at the Royal Society.

Geologists working in the remote Afar region of Ethiopia say the ocean will eventually split the African continent in two, though it will take about 10 million years.

Lead researcher Tim Wright who is presenting the research at the Royal Society's Summer Exhibition, described the events as "truly incredible".

Used to understanding changes in the planet on timescales of millions of years, the international team of scientists including Dr Wright have seen amazing changes in Afar in the past five years, where the continent is cracking open, quite literally underneath their feet.

In 2005, a 60km long stretch of the earth opened up to a width of eight metres over a period of just ten days.

Hot, molten rock from deep within the Earth is trickling to the surface and creating the split.

Underground eruptions are still continuing and, ultimately, the horn of Africa will fall away and a new ocean will form.

'A smaller Africa'

Dr James Hammond, a seismologist from the University of Bristol - who has been working in Afar - says that parts of the region are below sea level and the ocean is only cut off by about a 20-metre block of land in Eritrea.

"Eventually this will drift apart," he told the BBC World Service. "The sea will flood in and will start to create this new ocean."

"It will pull apart, sink down deeper and deeper and eventually... parts of southern Ethiopia, Somalia will drift off, create a new island, and we'll have a smaller Africa and a very big island that floats out into the Indian Ocean."

The researchers say that they are extremely lucky to be able to witness the birth of this ocean as the process is normally hidden beneath the seas.

The team hope to conduct experiments in the area that will help understand how the surface of the Earth is shaped.

They believe that the information they glean from observing the shaping of the Earth will help scientists better understand natural hazards such as earthquakes and volcanic eruptions.

By Matt McGrath
BBC News Science

A bit of humour in the form of a recent email doing the rounds. Don't give up your day jobs just yet, my geophysicist friends !!

Dear Sir,

Kindly informed that we have a highly innovative solution for your Gold explorations sector. Our experiences indicates that Mr. Ahmed Mahuob is unique all over the world using his eyes to see deep in earth and on the top of the surface, he will demonstrate his skills viability in front of you to surprising you by his unique skills as he has been tested and experienced in Iraq in the nineteen and they were astounded by his skills, but in that time Iraq was not able to do anything for him so he return back to Yemen.

We knew that the estimated investment required for exploring and drilling Gold locations in Yemen would be of \$ 3000.000.000 to \$10.000.000.000, which is not guaranteed to return back if the location is dry or contains a little oil. But if you are using our guy's skills you will be sure 100% that you have Gold and how much Gold you have if its profitable or not, besides he can tell you exactly where is the best location to mining locations that could be in the center of the locations to produces more Gold and for a long time, which is going to make a big different in your company profits history.

A likely service will cost you of \$ 500.000 gross for exploring every single location and you will have the following benefits:-

- He can see any type of Minerals under the ground not only Gold or Oil and you can ask him to see anything far from you on the surface.*
- He can see deep in earth to 40 K.M and also behind the mountains to 60 KM (That's mean you will know exactly what is behind the mountains further till 60 KM on the surface).*
- Easy to move with him to any where you want and he can discover more new locations as long as we want him to do that.*

Note: Be kindly informed that we are not going to accept any money to be transferred to our accounts unless you make sure that our results are correct 100% (This is mean when you drill the locations and start produces oil, we are going to get cheques from you that we can not use unless you start producing Gold and this will be clearly indicated in our contract).

We believe that this issue will be confusing and mysteries, but the best way to say yes or No is to test the guy in any place and any way you think is best to make sure that he is right or not.

If you'd like to proceed to the next stage we would expect to sign a mutual non-disclosure agreement, and await your advice on this.

Yours Sincerely,

** Name removed*

Our Cover Story.....

It is one of the most exquisite views we have ever had of the Earth.

This colourful new map shown on our cover traces the subtle but all pervasive influence the pull of gravity has across the globe.

Known as a geoid, it essentially defines where the level surface is on our planet; it tells us which way is "up" and which way is "down".

It is drawn from delicate measurements made by Europe's Goce satellite, which flies so

low it comes perilously close to falling out of the sky.

Scientists say the data gathered by the spacecraft will have numerous applications.

One key beneficiary will be climate studies because the geoid can help researchers understand better how the great mass of ocean water is moving heat around the world.

The new map was presented here in Norway's second city at a special Earth observation (EO) symposium dedicated to the data being acquired by Goce and other European Space Agency (Esa) missions.

Europe is currently in the midst of a huge programme of EO development which will see it launch some 20 missions worth nearly eight billion euros before the decade's end.

The Gravity Field and Steady-State Ocean Circulation Explorer (Goce) is at the front of this armada of scientific and environmental monitoring spacecraft.

Imaginary ball

Launched in 2009, the sleek satellite flies pole to pole at an altitude of just 254.9km - the lowest orbit of any research satellite in operation today.

The spacecraft carries three pairs of precision-built platinum blocks inside its gradiometer instrument that sense accelerations which are as small as 1 part in 10,000,000,000,000 of the gravity experienced on Earth.

This has allowed it to map the almost imperceptible differences in the pull exerted by the mass of the planet from one place to the next - from the great mountain ranges to the deepest ocean trenches.

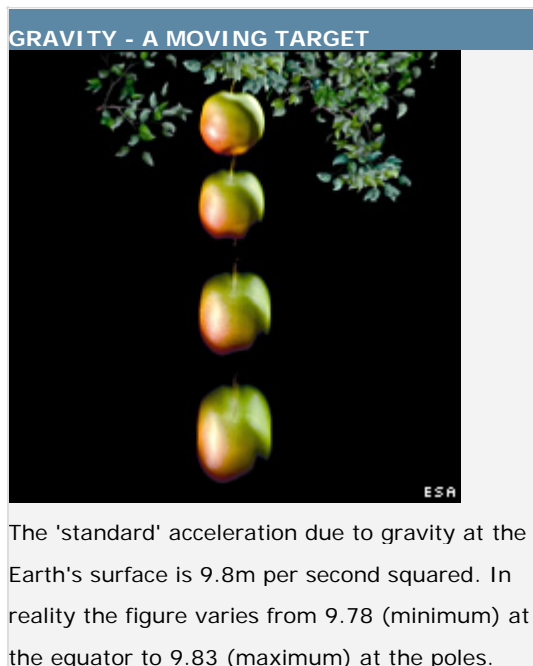
Two months of observations have now been fashioned into what scientists call the geoid.

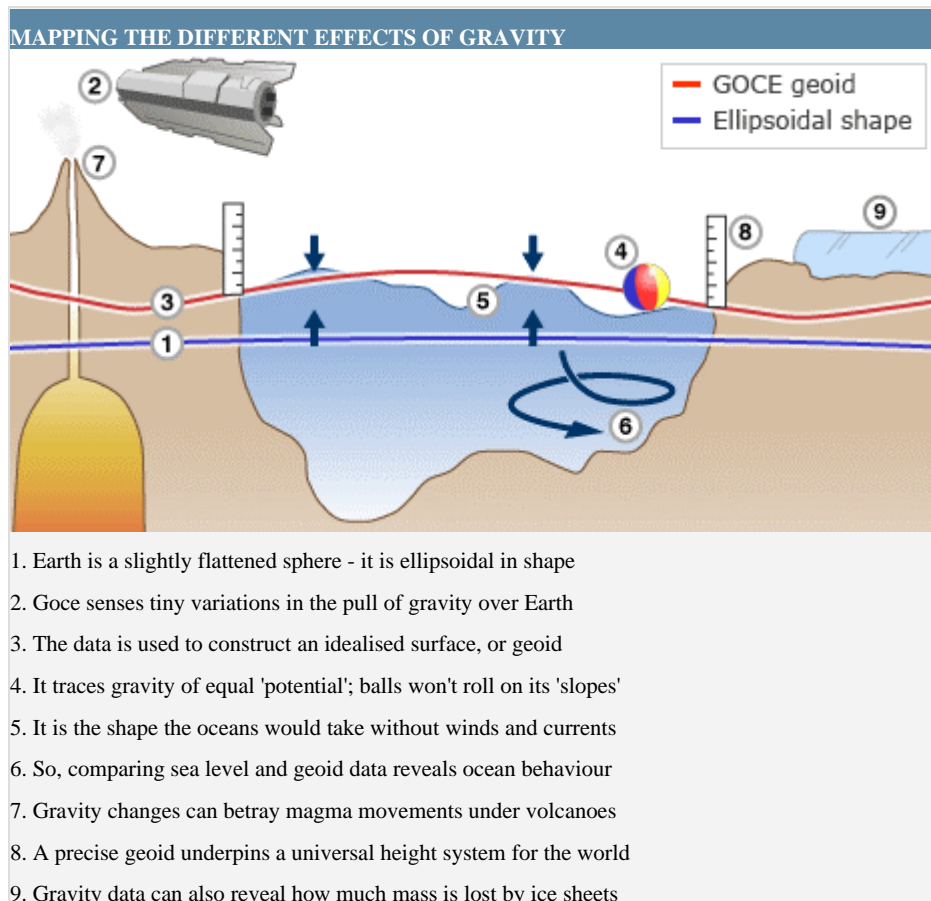
"I think everyone knows what a level is in relation to construction work, and a geoid is nothing but a level that extends over the entire Earth," explained Professor Reiner Rummel, the chairman of the Goce scientific consortium.

"So with the geoid, I can take two arbitrary points on the globe and decide which one is 'up' and which one is 'down'," the Technische Universitaet Muenchen researcher told BBC News. In other words, the map on this page defines the horizontal - a surface on which, at any point, the pull of gravity is perpendicular to it.

Put a ball on this hypothetical surface and it will not roll - even though it appears to have "slopes".

These slopes can be seen in the colours which mark how the global level diverges from the generalised (an ellipsoid) shape of the Earth.





The geoid is of paramount interest to oceanographers because it is the shape the world's seas would adopt if there were no tides, no winds and no currents.

If researchers then subtract the geoid from the actual observed behaviour of the oceans, the scale of these other influences becomes apparent.

This is information critical to climate modellers who try to represent the way the oceans manage the transfer of energy around the planet.

But a geoid has many other uses, too. Having a global level underpins a universal system to compare heights anywhere on Earth.

In construction, for example, it tells engineers which way a fluid would naturally want to flow through a pipeline.

Geophysicists will also want to use the Goce data to try to probe what's happening deep within the Earth, especially in those places that are prone to quakes and volcanic eruptions.

"The Goce data is showing up new information in the Himalayas, central Africa, and the Andes, and in Antarctica," explained Dr Rune Floberghagen, Esa's Goce mission manager.

"This is, in one sense, not so surprising. These are places that are fairly inaccessible. It is not easy to measure high frequency variations in the gravity field in Antarctica with an aeroplane because there are so few airfields from which to operate."

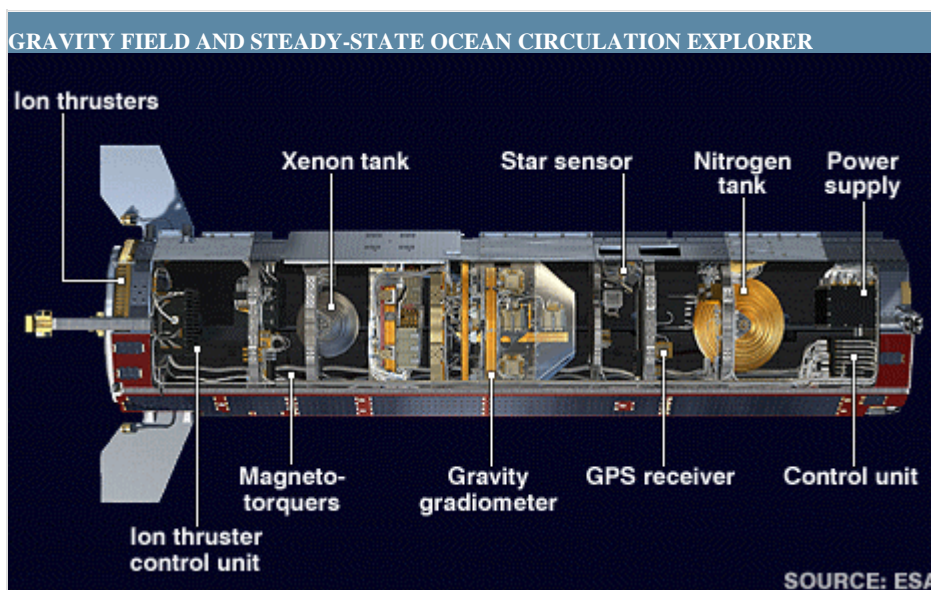
Goce's extremely low operating altitude was expected to limit its mission to a couple of years at most. But Esa now thinks it may be able to continue flying the satellite until perhaps 2014.

Unusually quiet solar activity has produced very calm atmospheric conditions, meaning Goce has used far less xenon "fuel" in its ion engine to maintain its orbit.

Ultimately, though, that fuel will run out and the residual air molecules at 255km will slow the satellite, forcing it from the sky.

By Jonathan Amos

Science correspondent, BBC News, Berge



The 1,100kg Goce is built from rigid materials and carries fixed solar wings. The gravity data must be clear of spacecraft 'noise'

The 5m-by-1m frame incorporates fins to stabilise the spacecraft as it flies through the residual air in the thermosphere

Goce's accelerometers measure accelerations that are as small as 1 part in 10,000,000,000,000 of the gravity experienced on Earth

The UK-built engine ejects xenon ions at velocities exceeding 40,000m/s; the engine throttles up and down to keep Goce at a steady altitude

Bad Joke

What's the first thing a modern geophysicist is likely to say to you?
"Do you want chips with that burger?"

WITS NEWS

David is the former president of the Wits Students Geophysics Society (WSGS) for the academic year 2010, which is a student chapter for students with interest in geophysics. There was one WSGS event this year on the Wits campus, where Mr. Ajay Lala, Mr. Ismael Zarruka and David were voted in as officers of the student chapter. Darren Burrows of Fugro Airborne gave a talk at this event, which Fugro sponsored with pizzas and drinks. David was one of the fortunate 53 student leaders who attended the Student Leadership Symposium (SLS) in Denver, USA, with other counterparts from 31 countries.

SLS, which is funded by Chevron, gives student-leaders across the globe the opportunity to intermingle with diverse cultures and customs among the participants. Application processes are completed online which can be found on the Society of Exploration Geophysics (SEG) website www.seg.org

The symposium ran over two days, the 16th and 17th of October 2010. The students also got the rare chance of attending the SEG annual meeting held in Denver, USA. This was a great experience for David and the other students, because there were a lot of companies in the exhibition area and they could answer the questions most students have with regards to student funding and employment opportunities. Each student chapter representative received four new books published by SEG. The titles of the books received are: Methods And Applications In Reservoir Geophysics, Geophysics Under Stress: Geomechanical Applications of Seismic and Borehole Acoustic Waves, Geophysics Today: A Survey of the Field as the Journal celebrates its 75th Anniversary, and Heavy Oils: Reservoir Characterization and Production Monitoring.



Geophysics MSc Student: David Ngobeni is studying Geophysics with the University of the Witwatersrand. He is the outgoing president of WSGS.

Wits Geophysics - Gordon Cooper

The year was a very busy one for Gordon, with much travel involved. The first trip of 2010 was to Capri in April for the 2nd EGM International Conference, organised by Prof. Maurizio Fedi and colleagues from the University of Naples. The conference focussed on non-seismic geophysical methods, and was well attended. After the conference Gordon spent 3 days teaching at the University of Naples, and managed to fit in visits to Vesuvius and Pompeii.



Capri.

In June Gordon attended the EAGE Conference in Barcelona to see what all the seismic oil exploration people were up to. However, it seemed that most of the people Gordon talked to at the conference were more interested in the World Cup football, which was taking place in South Africa at the time!



The next conference for Gordon was the ASEG in Sydney in August (see the photos elsewhere in this newsletter) where Gordon gave a short course on advanced potential fields data processing. The course was well attended (sold out) and seemed to go well.

Barcelona

AfricaArray – Sue Webb

The AfricaArray international geophysics field school attracted 27 participants this year from all over Africa and the US. We were more than ably hosted by Anglo Platinum at the “Anglo House” near the Der Brokken project. The site offered the students an exciting mix of challenges from characterising a variety of dykes to determining overburden thickness in a region that is prospective for mining. The Wits Honours students were joined by five US students funded by the US National Science Foundation’s (NSF) Partnerships for International Research and Education (PIRE) program and eight students from all over Africa funded by the Society of Exploration Geophysicists’ Projects of Special Merit program. With this large number of students involved, Wits senior instructors (Sue Webb, Mike Jones and Ray Durrheim) were assisted by three instructors from the US (Melissa Nunley, Mouse Reusch and David Reusch) and South African graduate students and a geophysical technician (Hlmphe Malephane, David Ngobeni and Zibusiso Gumede). Special thanks to Stephan van As of Anglo Platinum for hosting us and letting us visit the core shed for a day of geology and physical properties. The party was one to remember! Thanks to De Beers and Anglo American for the loan of equipment. A big thank you to the CSIR for the loan of GPR equipment and the participation of Mpho Nkwana. The field school provides an excellent training ground for students to learn survey planning, equipment usage and interpretation and integration of data sets. They also learn to work in diverse multitiered groups.

Wits Geophysics will be hosting the AfricaArray annual meeting from November 19-22, 2010 at Wits University – please join them for some exciting developments in climate change studies.



AfricaArray International Geophysics Field School 2010 - group photo.

The Society of Exploration Geophysicists (SEG) 2010 Honorary Lecturer for Africa and the Middle East is Susan Webb of Wits University (*Very well done Sue – Ed*). To date she has been to Capri, Germany (courtesy of Eyjafjallajökull), Botswana, Namibia, Ghana, Nigeria and Egypt. She will continue with lectures in Oman, UAE, Kuwait and Qatar. She will finish the tour with an invited talk at the Colloquium on African Geology in Johannesburg in January. The title of her lecture is: Deep Gravity – Long Wavelengths and Measured Moho.

Susan Webb has been elected as the second vice president for the Society of Exploration Geophysicists (*Excellent, well done again !! – Ed*) and invites suggestions from all SAGA members for interactions with SEG. As part of her duties, Sue was able to attend the SEG annual meeting in Denver in October, where she caught up with several South Africans including George Smith. George was there advertising the upcoming Geosynthesis Conference coming up in Cape Town. Sue then spent a productive week in Boulder working with Dr. Carol Finn of the USGS.

David Ngobeni is working on his MSc on the SEG funded Geoscientists without Borders project that was awarded to Wits University with Sue Webb as PI. This project combines humanitarian, students and geophysics in a project to help the Dayspring Children's Village with their water problems by quantifying the effect that invasive trees have on their water by using geophysics. The project provides an ideal site to introduce a variety of students to geophysics as it is close to Johannesburg.

With Trond Torsvik as lead author, Sue Webb and Lew Ashwal of Wits University were coauthors on a Nature paper published in August entitled "Diamonds sampled by plumes from the core mantle boundary". The paper generated much global media interest and even some local media interest with an article appearing in Business Day about this novel method of generating kimberlites that explains the locations of kimberlites and the large gaps in kimberlite ages.

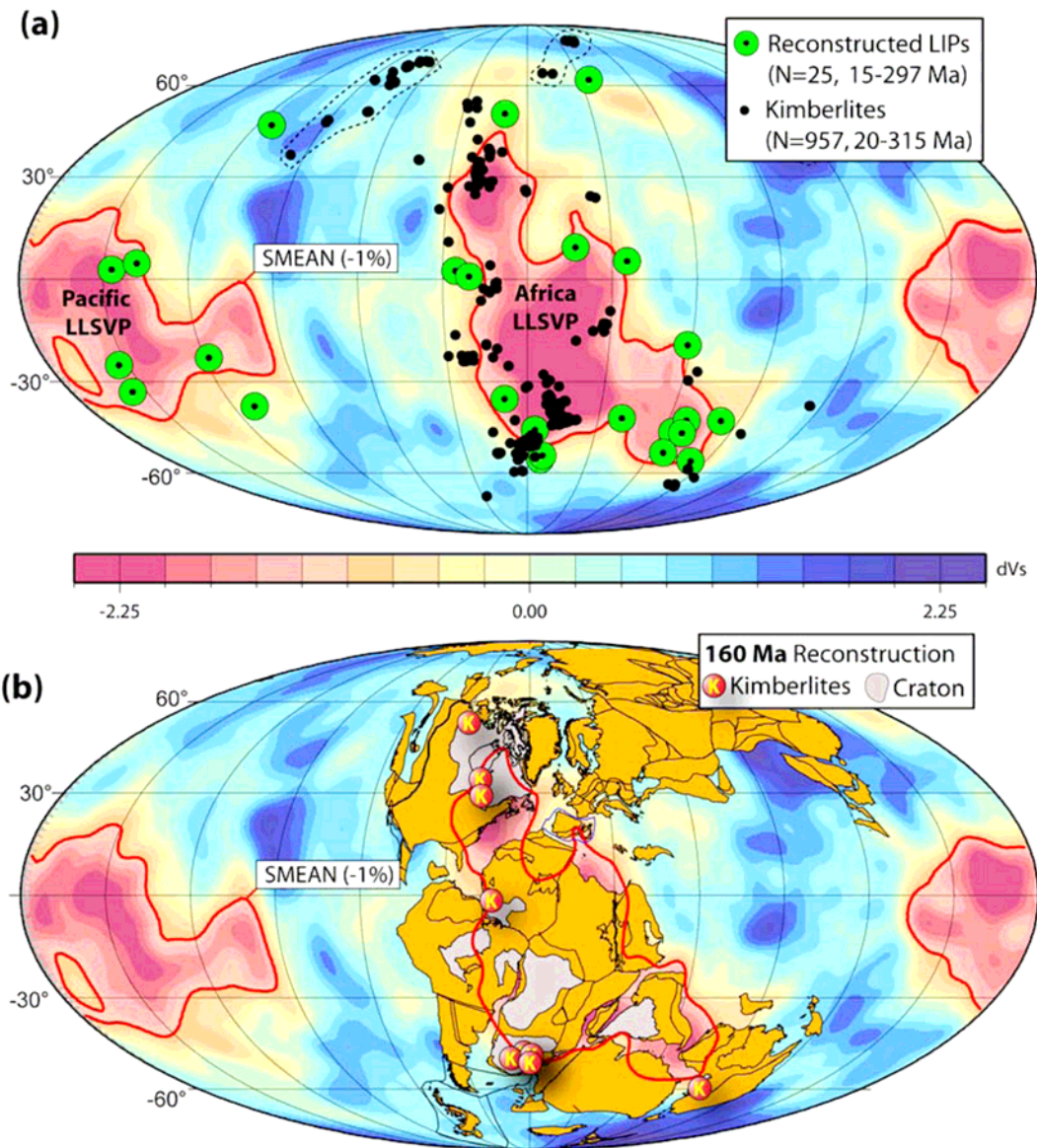


Figure 1 (Torsvik, Burke, Webb & Ashwal)

Figure from paper: Large low seismic velocity provinces (LLSVP) and the locations of kimberlites at the time of eruption for the past 320 Myr.



L to R: David Ngobeni, Wits MSc Student, Craig Beasley former SEG president and SAGA conference participant, Rhonda Jacobs GWB administrator, and Susan Webb, SEG 2nd vice president at the GWB booth at the SEG annual meeting in Denver.

Inkaba yeAfrika

There are now 104 students enrolled in Inkaba yeAfrica (up from 85 as reported in the mid-2010 report).

An Inkaba yeAfrica meeting, the 7th Annual Workshop, took place during the week 1-5th November 2010 in Potsdam, Germany. 50 RSA honours/MSc/PhD students from 8 different universities in RSA were flown out for this and the host, GFZ-Potsdam, put on a number of short courses for them. All students had to present their work in oral and poster formats. We believe cultural exchanges like this can have surprising effects on the practice of science - science camps for young students in effect, where young scientists can mingle with experienced international scientists, some highly acclaimed, on a one-to-one basis.

Such intimate international meetings and exchanges are creating a universal, globe-spanning culture of science with widespread ramifications, focused on inspiring the next generation of leading scientists and fostering relations and networks among young researchers. The meeting is about them and their dreams and aspiration that will likely guide them in RSA into new fields of interdisciplinary earth science.

I look forward to the next SAGA meeting where perhaps we can give this Inkaba yeAfrica type of meeting even greater exposure in Cape Town.

Maarten de Wit

(Fantastic work Maarten, that is really encouraging, we tip our hats to the great work you guys are doing – Ed).

Exploration Geophysics in Africa – how are we doing these days?

We all know that straight after the December 2008 economic collapse, the first half of 2009 was very difficult in the mining and exploration business. Retrenchments were common and many of our colleagues foresaw hard times looming for a decade or so. The diamond exploration companies were perhaps hardest hit of all; when the world's richest diamond mine, Jwaneng, closes down completely for 12 weeks, it's fair to say that things are dire. Large-scale diamond exploration programs in the DRC, Angola and CAR were stopped overnight and geologists particularly were laid off in numbers.

Well I'm pleased to report back to all those aspiring geophysics students out there that things are not so bad and you can continue studying. In a funny twist of fate it turns out that although geologists are employed in far greater numbers than geophysicists when times are good, the reverse is partially true when times are bad. Many big companies nowadays employ only one or two senior geophysicists for their entire continent-wide set of exploration programs, and expect them to hire and oversee consultants and contractors on a large scale to get the work done. This works well on two fronts; one, there is no need to retrench geophysicists when the paw-paw hits the fan and two, there is far more scope for self-employment these days, and for consultants and contractors to play a larger role than in the past. The latter removes some of the cyclical uncertainty and job insecurity from a career in exploration geophysics, and can also lead to more job satisfaction and enjoyment.

So how is exploration geophysics doing in Africa? Well, in some sectors it is booming. While diamonds are only just starting to see some weak recovery, exploration for copper, nickel, gold and uranium in Africa is doing well. Much of this work is out of country and travel is a must, but that is the nature of the business. Africa-based geophysicists are also working further and further afield, with a lot of new business developing in places like Mauritania, on the Arabian Peninsula and in the Gulf states. Even countries in Asia, particularly India, are becoming great sources of exploration work for geophysicists based in southern Africa.

If there are any words of advice on survival to new geophysicists setting out on a career in the exploration business, and this could just as well apply to geologists, these would (in my opinion) be:

- Don't restrict yourself to one commodity, but try and get all round experience in gold, base metals, diamonds and industrial minerals.
- The same applies to geophysical techniques; try and get as much varied experience as possible, with whatever ground and airborne techniques and datasets that you can. Don't specialise too much, too soon!
- Have a fallback position. Don't ignore what you can learn from those around you. Learn about geochemistry, geology, project management, GIS, 3D orebody modelling and laboratory management; you never know when these skills might be called upon, your work will be more interesting, and they could save your bacon one day.

Editor