

35TH INTERNATIONAL GEOLOGICAL CONGRESS

27 AUGUST - 2 SEPTEMBER 2016 | CAPE TOWN, SOUTH AFRICA



CONFERENCE GUIDEBOOK

www.35igc.org



IUGS
International Union of Geological Sciences



mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA



Council for Geoscience
Applied Geoscience Solutions



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WELCOME MESSAGE

We take great pleasure in welcoming our delegates and accompanying persons to Africa and the 35TH International Geological Congress (IGC). We have no doubt that this event will prove to be a successful, rewarding and memorable experience.

A diverse scientific programme, informative workshops and short courses, unique field trips and day tours, exceptional exhibits together with entertaining social functions, offer something appealing to all participants. The approximate 5 000 abstracts received cover most topical aspects of the geosciences encompassed by three core topics: *Fundamental Geoscience*, *Geoscience in the Economy* and *Geoscience in Society*. Leading plenary and keynote speakers will present the latest advances in a variety of subjects ranging from planetary geology to climate change.

The other IGC held in South Africa took place in 1929 and many superlative examples of African geology were highlighted to the international geological community for the first time during that event. With that in mind, part of the scientific programme of the 35TH IGC and many of the field trips have been designed to provide comprehensive reviews, updates and information about the progress made by the Geosciences in Africa since the 1929 congress. In line with this Pan-African theme, two special publications have been prepared for delegates: The first publication, entitled '*Africa's Top Geological Sites*', presents a 44-chapter review of outstanding geological features and landforms found on the continent. The second publication is a special *Episodes* volume, as is customary with international geological congresses. This volume, entitled '*Great Mineral Fields of Africa*', highlights some remarkable mineral deposits located on the continent.

We are greatly indebted to our sponsors and exhibitors, the Board of the 35TH IGC Foundation and the Local Organising Committee for their significant contributions towards the successful hosting of this special, African geoscientific event. We thank all delegates and presenters for supporting the congress and welcome you to Cape Town.

Dr. Richard Viljoen, Co-president, 35TH IGC

Dr. Jeanette McGill, Co-president, 35TH IGC

Dr. Greg Botha, Secretary General, 35TH IGC



INDIAN SUBCONTINENT

The Natural Choice for 36th IGC!



The International Geological Congress (IGC), considered to be the Olympics of Geological Sciences is going to be organized in India after a gap of 56 years. 36th IGC, a global platform to advance the cause of Earth Sciences is being hosted by the Ministry of Mines [MoM] and the Ministry of Earth Sciences [MoES], Government of India with active support from the Indian National Science Academy and science academies of co-host neighboring countries, viz. Bangladesh, Nepal, Pakistan and Sri Lanka. The Congress is being organized by an autonomous organization, the 36th International Geological Congress. The Geological Survey of India is the nodal organization for this event.

The country with mighty Himalayas and its glaciers, icy peaks, deep gorges and vast alluvial plains, cold and warm deserts, mangroves, rain forests and mesmerizing sun drenched beaches, each with its own unique enticing geology has attracted the world since ages. The sub-continent offers everything from Archaean crustal nuclei to present day volcanism which is a must see for geo-tourist bugs.

The Indian sub-continent with its unique diversity of terrain and people invites the world Geoscientific community to converge in India during the 36th session of IGC at Delhi in year 2020. The Congress with theme **GEOSCIENCE: The Basic Science for Sustainable Future** will be offering an opportunity to collaborate for developing Geoscience for a better tomorrow.

The 36th Session of IGC will typically cover the entire gamut of Geoscience with its themes and will have all geologically important sites packaged for Field Excursions. This Congress driven by dictum 'Science for all and not for Profit' aims to make it affordable and accessible for students, young researchers and geoscientists from underdeveloped countries through its unique Geohost Program and a special youth Geohost program for International Union of Geological Sciences (IUGS) member countries.

Visit 36th International Geological Congress

Stand (GG5)

for a chance to participate in an exciting **Lucky Draw**.



Make sure you are in India for 36th IGC to experience the Mystic Continent with all its flavor and above all its unique geology!

**36th International
Geological Congress**
2 - 8, March, 2020
Delhi, INDIA

Contact:

36th International Geological Congress Secretariat
C-II, Pushpa Bhavan, Madangir Road,
New Delhi-110062, INDIA
Tel: + 91-11-29965750, 26057035
Email: igc.delhi2020@nic.in
Website: www.36igc.org





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SPONSORS & PARTNERS

SPONSOR: KEYSTONE



Exxaro Resources Limited

Exxaro Resources Limited is one of the largest South Africa-based diversified resources groups, with interests in the coal, titanium dioxide, ferrous and energy markets and current business interests in South Africa, Botswana, Republic of the Congo, Inner Mongolia and Australia. The company is the second-largest coal producer in South Africa with current production of almost 40 million tonnes per annum (Mtpa), and is listed on the JSE Limited. Although our company is just eight years old, our pedigree and wealth of skills stretch back over decades as a company rooted in South Africa and respected among its peers for its innovation, ethics and integrity. Based on a well-executed strategy, solid returns, access to funds and quality resources, Exxaro Resources Limited is a unique listed investment opportunity into its chosen commodities. Exxaro Resources Limited was one of the top 10 mining companies globally in terms of total shareholder returns in 2012, and remains on track to add significant value to all stakeholders in the longer term.

SPONSOR: DIAMOND



VALE

Vale is a Brazilian-based resources company with a diversified global portfolio of iron ore, base metals, fertiliser, logistics, manganese and coal assets. The company is the world's leading producer of iron ore, iron pellets and nickel. Vale's mission is to transform natural resources into prosperity and sustainable development. The company employs more than 200,000 employees and contractors globally. Vale is actively undertaking exploration projects in the Americas, Australasia and Africa in alignment with the company's mission, vision and values.

SPONSOR: PUBLICATION & 35 IGC SAGPGF



Pangea Exploration (Pty) Ltd.

Pangea is a Johannesburg-based exploration and development company with a multi-decade track record of entrepreneurial success, shareholder value creation and proven operating experience in Africa. Pangea has specific expertise in asset identification and appraisal, mining finance, project de-risking from exploration stage to development and project management.

SPONSOR: PUBLICATION (GEOHERITAGE OF AFRICA)



Acacia Mining

Acacia Mining PLC (LSE: ACA) is Tanzania's largest gold miner and one of the largest producers of gold in Africa. We have three producing mines, all located in Northwest Tanzania: Bulyanhulu, Buzwagi, and North Mara and a portfolio of exploration projects in Tanzania, Kenya, Burkina Faso and Mali. Our approach is focused on strengthening our three core pillars; our business, our people and our relationships in order to achieve our ambition of creating a leading African Company. Acacia is a UK public company, listed on the Main Market of the London Stock Exchange with a secondary listing on the Dar es Salaam Stock Exchange.

SPONSOR: GOLD



AngloGold Ashanti

AngloGold Ashanti, a gold mining company with a globally diverse, world-class portfolio of operations and projects, is headquartered in Johannesburg, South Africa. AngloGold Ashanti is the third largest gold mining company in the world, measured by production. Our portfolio of 19 operations in nine countries, comprises long-life, relatively low-cost assets with differing ore body types located in key gold-producing regions. A number of these assets are strongly leveraged to energy costs and currencies. These operating assets are supported by greenfield projects in Colombia and a focused exploration programme. Our business activities span the full spectrum of the mining value chain and are concerned with the impact of our activities on the varied and many communities and environments in which we operate. Our goal is to create sustainable value for shareholders, employees, and social partners through safe and responsible mining practices and capital discipline. AngloGold Ashanti's core strategic focus is to generate sustainable free cash flow by focusing on five key business objectives, namely: people, safety and sustainability; ensuring financial flexibility; actively managing all expenditures; improving the quality of our portfolio; and maintaining long-term optionality. AngloGold Ashanti has an attributable Ore Reserve of 51.7Moz of gold and an attributable Mineral Resource of 207.8Moz.

SPONSOR: REGISTRATION



The MSA Group PTY Ltd.

The MSA Group, Africa's leading mineral exploration consultant, provides Exploration, Geology, Regional mapping, Mining and Environmental Consulting services. MSA's services range from targeting, geological mapping, geochemical sampling and initial assessment, to turn-key exploration and project management of exploration programmes, to Mineral Resource Estimation. Our Mining studies team undertakes Due Diligence studies and Valuations, Mine planning and Optimisation and Scoping and Feasibility Studies. MSA also provides comprehensive environmental consulting services across all industries. MSA routinely reports on all the major mining stock exchanges. MSA has attained ISO 9001 certification for quality, OHSAS 18001 certification for health and safety and SANAS ISO/IEC 17025 accreditation for our diamond exploration laboratory.

SPONSOR: SILVER



BAUER Maschinen GmbH

Specialist foundation engineering equipment from the BAUER Maschinen Group is the global benchmark in the industry. Customers all over the world place their trust in the unmatched quality of Bauer machinery when it comes to buying rotary drilling rigs, trench cutters, duty-cycle cranes and drilling accessories. Together with their specialized subsidiary company, the group can offer the right equipment for nearly any foundation application. It ranges from pile drivers with diesel or hydraulic powered hammers, anchors, slurry mixing and separation, soil improvement and soil mixing. It also includes systems for well drilling and for blastholes, as well as systems for trenchless installation and rehabilitation of sewer and utility lines. Teams of civil engineers, foremen, operators and mechanics are ready for assisting customers of Bauer Maschinen in starting up complex projects and in training customer's staff on their projects or in special training courses in the head office.



Bushveld Minerals Ltd.

Bushveld Minerals is an AIM-listed company exploring and developing projects on the Bushveld Complex in South Africa. The company targets projects that combine favourable cost-curve positioning, relatively low-capex and near term production profile, and potential for scale in well-understood geographies. Bushveld Minerals boasts an attractive portfolio of assets in 3 focused platforms: Bushveld Resources - a multi-commodity company housing the Vanadium Project and the P-Q Iron Ore and Titanium Project; Greenhills Resources - has a tin portfolio with a near-term production profile; and Lemur Resources - ASX-listed and owner of the Imaloto Coal Project in Madagascar, leveraging a strong balance sheet to develop new opportunities.



Randgold Resources Ltd.

Randgold Resources Ltd. is an Africa-focused gold mining and exploration company listed on the London Stock Exchange and Nasdaq. Its mission is to create value for all its stakeholders through the discovery of multi-million ounce gold deposits and their development into sustainably profitable world-class mines. Its operations include Morila and the Loulo-Gounkoto complex in Mali, one of the largest of its kind in the world, the Kibali joint venture in the Democratic Republic of Congo, which is managed by Randgold, and the Tongon mine in Côte d'Ivoire. In 2014, attributable production from its mines exceeded 1 million ounces. Randgold has extensive groundholdings in the gold regions of Western and Central Africa, exploration programmes across all these areas, and a large portfolio of targets and prospects.



VM Investment Company (Pty) Ltd.

VM Investment Company (VMIC) is a principal investments and corporate advisory company developing investment platforms in key growth sectors of the African economy, informed by a firm belief in the continent's rich resources and its potential to grow into a global economic powerhouse. VMIC targets investment opportunities in primary industries with relatively simple business models that offer significant scale opportunities. Given its team of principals' extensive experience in the natural resources sector, the company naturally has a preference for natural resource opportunities across the value chain - exploration, mining, mining services and beneficiation. VMIC was established in 2006 and since then has developed a portfolio of mineral exploration and beneficiation businesses in several commodity groups across Africa.

AUDIT SPONSOR



Venmyn Deloitte

Venmyn Deloitte is an internationally focused, South African based, independent mining and minerals management advisory business, which also has a presence in the Deloitte London office. The company has strong links with minerals and mining companies, together with merchant banks and financial institutions around the world. Specialist services have recently extended to include corporate financial advice, international compliance assignments, the identification and facilitation of strategic partnerships between project promoters and financiers, and environmental liability and sustainability reviews adopting the Equator Principles.

MY IGC APP



Anglo American

Anglo American is a globally diversified mining business. Our portfolio of world-class competitive mining operations provides the raw materials—like platinum, copper and diamonds—to meet the growing consumer-driven demands of the world's developed and maturing economies. We work together with our key partners to unlock the long-term value not only for our shareholders, but also for the communities and countries in which we operate.

SPONSOR: 35 IGC SAGPGF



Royal Bafokeng

In 2010, following a restructuring of the joint venture, RBPlat gained a 67% majority interest in the Bafokeng Rasimone Platinum Mine (BRPM) joint venture (JV) in the North West province of South Africa and took over operational control of the JV. In November of the same year it became the first and only community owned company to list on the JSE. Its broad-based ownership structure provides stability, certainty and sustainability. Benefits in the form of social and economic development flow to the community from this ownership.



Royal Haskoning DHV

Royal Haskoning DHV is an independent, international engineering and project management consultancy with a 135-year track record. Backed by the expertise and experience of 6,500 colleagues across the world, RHDHV's professionals combine global expertise with local knowledge to deliver a multidisciplinary consultancy service for the entire living environment. RHDHV's 25-year track-record as expert consultants to the mining industry acts as a conduit for channelling integrated advisory services into South Africa and across the world. RHDHV's commitment is to leverage their experience and expertise to deliver a broad range of tailored services and solutions to all stakeholders thereby enhancing society together.

SPONSOR: PLENARY / POST GRADUATE FUND



Harmony Gold Mining Company Limited

Harmony Gold Mining Company Limited (Harmony) is a gold-mining and exploration company, with more than six decades of experience. Harmony has operations in South Africa and in Papua New Guinea, one of the world's most well-known gold mining regions and one of the world's premier new gold regions respectively. Harmony produced 1.08Moz of gold and was South Africa's third largest gold producer and the twelfth largest in the world in FY15.

SPONSOR: BUSINESS CENTRE



Chamber of Mines of South Africa

The Chamber of Mines of South Africa is a mining industry employers' organisation that supports and promotes the South African mining industry. The Chamber serves its members and promotes their interests by providing strategic and advisory input. A key role of the organisation is to facilitate intersection among mining employers to examine policy issues and other matters of mutual concern to crystallise and define desirable industry standpoints. A variety of initiatives are in place to promote collaboration between members. Consultation and collaboration are voluntary and never encroach on the autonomy of members. The Chamber also acts as a principal advocate for mining in South Africa to government, communicating major policies endorsed by its members. A further vital function of the organisation is to represent some sectors in collective bargaining with organised labour.

SPONSOR: WELCOME DRINKS



Sibanye

Sibanye is an independent, South African domiciled and focused mining group, which owns and operates high-quality gold and uranium operations and projects. In line with Sibanye's strategy, it entered into two separate transactions to acquire the platinum assets of Anglo American Platinum Limited's Rustenburg Operations and Aquarius Platinum Limited in 2015.

SPONSOR: LUNCHTIME DRINKS



Assmang (Pty) Ltd.

Assmang Proprietary Limited is a company incorporated in the Republic of South Africa. The Company mines manganese ore at the Black Rock Mining Complex, iron ore at Khumani and Beeshoek Mines in the Northern Cape Province and chrome ore at Dwarsrivier Mine in Mpumalanga province. The Company also produces manganese alloys at its works at Cato Ridge in the KwaZulu-Natal province and charge chrome from recovered slag at its Machadodorp smelter in the Mpumalanga province which was placed on care and maintenance in 2015. Cato Ridge Alloys Proprietary Limited, a joint venture between Assmang (50%), Mizushima Ferroalloys Company Limited (40%) and Sumitomo Corporation (10%), both of Japan, produces refined manganese alloys at Cato Ridge Works. Incorporated in 1935, Assmang is controlled jointly by Assore Limited and African Rainbow Minerals with each holding 50% of the issued share capital and voting rights of the Company. Both shareholders are listed on the JSE Limited. The bulk of the Groups production is exported to the Far East, Europe, India and the United States of America.

SPONSOR: SOCIAL FUNCTION



Nedbank

Nedbank is one of SA's largest banks, with alliances and subsidiaries across Africa. Operating mainly from Johannesburg and London, Nedbank CIB provides financing solutions to junior, mid-tier & major mining companies with projects in Africa. M&A and specialist equity capital raising advisory services; capital goods financing using Export Credit Agency and other insurance products; trade finance, from product stockpile to the end customer, and commodity trading and structuring are also offered.

SYMPOSIUM SPONSOR



Leica

Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures. It is one of the market leaders in compound and stereo microscopy, digital microscopy, confocal laser scanning microscopy with related imaging systems, electron microscopy sample preparation, and surgical microscopes.



Pan African Resources PLC

Pan African Resources is a mid-tier, African-focused precious metals producer with quality assets in South Africa, currently producing in excess of 200,000oz of gold and 8,000oz of PGM's per annum. The group's assets include: - Barberton Mines: low cost, high grade gold mines and the BTRP in Mpumalanga; - Evander Mine: a gold mine and tailings plant in Mpumalanga with a strong project pipeline; - Phoenix Platinum: the Chrome Tailing Retreatment Plant in the North West province; - Uitkomst Colliery: an existing operational high grade thermal export quality coal deposit in KwaZulu Natal.

SPONSOR: SPEAKER GIFT



Eikendal

Nestled on the foothills of the majestic Helderberg Mountain, Eikendal is renowned for consistently producing quality wines and boasts an impeccable 34-year history of winemaking excellence. Our wines capture finesse and character, representing our fertile terroir, and can be enjoyed on any occasion! Spend a relaxing day tasting our award-winning wines or enjoying our Pizza & Wine Pairing. Try your hand at fly-fishing or enjoy a superb lunch at Giovannis. Indulge yourself in a luxury stay at our 4-star lodge, nestled among our vineyards. Come and enjoy the Eikendal Experience!

PARTNERS



Council for Geoscience
Applied Geoscience Solutions



INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)

The International Union of Geological Sciences (IUGS) is one of the largest and most active non-governmental scientific organisations in the world. Founded in 1961, IUGS is a member of the International Council of Science. IUGS promotes and encourages the study of geological problems, especially those of worldwide significance, and supports and facilitates international and interdisciplinary cooperation in the earth sciences.

Currently, IUGS gives special consideration to:

- International standards
- Geoscience education
- Geoscience information
- Environmental management and hazards.

IUGS commissions, task groups and initiatives are concerned with a wide range of geologic research of direct interest to governments, industry and academic groups within the earth sciences. IUGS believes that it is of mutual benefit to establish close links with other organisations engaged in geoscience activities, and especially those organisations whose work relates to some of the major activities of IUGS.

CONGRESS BOARD AND COMMITTEES

The Board of the 35TH IGC Foundation NPC (non-profit company) is headed by Mr. Mike Teke, and the members of the Board are:

- Mr. Sipho Nkosi, Exxaro Resources Limited
- Mr. Steve Phiri, Royal Bafokeng
- Ms. Khanyisile Kweyama, Business Unity of SA (BUSA)
- Prof. Bruce Rubidge, Wits
- Prof. Gerhard von Gruenewaldt
- Dr. Richard Viljoen (ex officio, as Co-president of the Local Organising Committee)
- Dr. Jeannette McGill (ex officio, as Acting Co-president of the Local Organising Committee).

♦ LOCAL ORGANISING COMMITTEE

CO-PRESIDENT & PUBLICATIONS CHAIR	Richard Viljoen	VM Investment Company and Geological Consultant
CO-PRESIDENT & GEOHOST CHAIR	Jeannette E. McGill	Council for Geoscience (CGS) Board Member and Chairperson CGS Technical Committee
SECRETARY-GENERAL & FIELD TRIP CHAIR	Greg Botha	Council for Geoscience
FINANCIAL CHAIR	Craig Smith	Geological Society of South Africa (GSSA)
SPONSORSHIP CHAIR	Mike Wuth	Consultant
SCIENTIFIC CHAIR	Laurence Robb	University of Oxford
GEOHOST CO-CHAIR	Bertus Smith	University of Johannesburg
GEOHERITAGE CHAIR	Genevieve Pearson	Phoenix Geoconsulting
VOLUNTEER CHAIR	Elna van Niekerk	University of South Africa
OAGS / UNIVERSITY LIAISON	Wlady Altermann	University of Pretoria
YOUNG EARTH SCIENTISTS LIAISON	John Paul Hunt	Council for Geoscience
SECRETARIAT	Danie Barnardo	Council for Geoscience
	Juanita van Wyk	Council for Geoscience
PROFESSIONAL CONGRESS ORGANISERS	Lesley Ferreira	Cebisa Conferences
	Crystal Kasselmann Juanita de Lange	Centeq Events

Exxaro is one of the largest and JSE-listed black-owned, South Africa-based diversified resources companies, with current business interests in South Africa, Republic of the Congo and Australia, net assets of US\$2.2bn and a market capitalisation of US\$1bn as at 31 December 2015. Exxaro produces around 42 million tonnes of coal per annum, the majority for the national energy utility, Eskom, and the remainder for export and other domestic clients.

Minerals power much of the global economy and especially that of South Africa. The extraction of natural resources directly accounts for about 8.3% of the country's GDP and just over 30% of the country's merchandise exports. About 90% of South Africa's total electricity generation is derived from power stations fuelled by locally mined coal. Mining directly employs nearly half a million people and another half a million indirectly, accounting for 1 million of the 8 million people formally employed in South Africa. The industry returns billions of rands to the economy in operating costs, salaries and wages, capital expenditure, taxes, royalties, dividends and interest.

At Exxaro, we recognise that our business exists within the context of a society and has a contribution to make to the development of this society. We regard Exxaro as a tenant of its host communities, not the landlord, and a successful relationship with communities is fundamental to our business success and growth. We therefore balance a portfolio of social, environment and economic growth objectives and manage these according to the six-capitals model within our sustainability framework.

About 3% of Exxaro's profit is spent on community initiatives with R300 million budgeted for social and labour projects in the 2013-2017 period. The need to find sustainable solutions is of critical importance in the journey towards strategic, integrated, impactful

socio-economic development and drives our transformation thinking even more so during the current global downturn.

Our strategy rests on five pillars:

- 1** We aim to demonstrate responsibility and accountability through engagement, legislative compliance, transparent reporting and diligent resource management in order to build inclusive wealth for all our stakeholders while aiming for an optimal footprint, limited and managed environmental impact and building an economically viable community that can sustain itself beyond the life of mine.
- 2** Exxaro aims to develop strong leadership and empowered employees to ensure a safe, healthy and skilled workforce.
- 3** We aspire for excellence in the way that we sweat our assets through productivity and efficiency improvements in order to increase the profitability of our operations and services.
- 4** We aim to deliver sustainable value and growth for shareholders through development and operation of a diversified portfolio of mining assets.
- 5** And finally, we aim to nurture a culture of innovation as the key to sustainability and competitiveness.

◆ SCIENTIFIC PROGRAMME COMMITTEE

ADVISORY PANEL	
Dr. Lynton Jaques	CHAIR Scientific Programme Committee, 34th IGC, Brisbane.
Prof. Abera Mogessie	President, Geological Society of Africa, and Professor, Department of Mineralogy & Petrology.
Prof. Gert-Jan Reichart	CHAIR Scientific Programme Committee EGU 2014, Vienna, and Head of the Marine Geology Department, Royal Netherlands Institute for Sea Research/Professor, Department of Earth Sciences – Geochemistry, Faculty of Geosciences, Utrecht University.
Dr. Carol Finn	President, American Geophysical Union and Senior Research Geophysicist, United States Geological Survey, Denver, Colorado.
SPC COMMITTEE	
Prof. Laurence Robb	CHAIR Visiting Professor, University of Oxford.
GEOSCIENCE FOR SOCIETY	
Prof. Gillian Drennan	Associate Professor, School of Earth Sciences, University of the Witwatersrand.
Dr. Gabrielle Schneider	Director, Namibian Uranium Institute.
Mr. Ed Swindell	Vice-President, Professional Affairs, Geological Society of South Africa.
GEOSCIENCE IN THE ECONOMY	
Prof. Annette E Goetz	Chair of Geology, Keele University, United Kingdom.
Prof. Paul Nex	Associate Professor, School of Geosciences, University of the Witwatersrand.
Prof. Ray Durrheim	SARCHI Chair of Exploration, Earthquake and Mining Seismology, School of Geosciences, University of the Witwatersrand.
FUNDAMENTAL GEOSCIENCE	
Prof. David Reid	Emeritus Professor, Department of Geology, University of Cape Town.
Prof. Marion Bamford	Professor, Evolutionary Studies Institute and Centre of Excellence in Palaeosciences, University of the Witwatersrand.
Prof. Steve McCourt	Emeritus Professor, School of Agricultural Earth and Environmental Sciences, University of KwaZulu-Natal.
WORKSHOPS	
Dr. Grant Bybee	Lecturer, School of Geosciences, University of the Witwatersrand.
YES (Young Earth Scientists Network) REPRESENTATIVES	
Dr. Tanvi Arora	Secretary General, YES Network and Scientist, National Geophysical Research Institute, Hyderabad, India.
Mr. Wang Meng	President, YES Network and Advanced Geologist, China Minmetals Corporation, China.
Mr. J.P. Hunt	Liaison





GENERAL INFORMATION

◆ VENUE ADDRESS AND CONTACT DETAILS

Cape Town International Convention Centre (CTICC)
Convention Square, 1 Lower Long Street,
Cape Town, 8001, South Africa
Tel: +27 (0)21 410 5000

◆ SYMPOSIUM VENUE

(Additional to the CTICC - across the road from the CTICC)

Convention Square, 1 Lower Long Street,
Cape Town, 8001, South Africa
Tel: +27 (0)21 412 9999

Venues used are located: Old Harbour Lobby level (basement level) and Mezzanine Level.

◆ REGISTRATION

Registration will take place in the Jasminium Restaurant on the ground floor of the CTICC. All delegates need to register before they may access the congress sessions and the exhibition. Delegates with outstanding payments must settle their account at the Finance Desk in order to gain access to the congress.

REGISTRATION DATES AND TIMES:

DATE	TIME
Sunday, 28 August	10:00 - 20:00
Monday, 29 August	07:00 - 18:00
Tuesday, 30 August	07:00 - 18:00

DATE	TIME
Wednesday, 31 August	07:00 - 18:00
Thursday, 1 September	07:00 - 18:00
Friday, 2 September	07:00 - 14:00

◆ ACCESS – NAME BADGES

Congress attendees are required to wear their name badge at all times to access the congress sessions and the exhibition. Congress sessions are not open to exhibitors or accompanying persons.

NAME BADGE REPLACEMENT: Attendees who misplace their name badge are welcome to visit the Finance Desk with photo identification to obtain a replacement. The cost of a replacement name badge is R600 each.

◆ BUSINESS CENTRE

Brought to you by Chamber of Mines

The Business Centre may be used by attendees for relaxing between presentations and for charging devices. The Business Centre will be located in the Jasminium Conservatory on the lower level of the CTICC from 28 August to 2 September 2016. Presenters, delegates and exhibitors are welcome to use the charging stations during the congress opening hours.

• BUSINESS SERVICES

The Business Service Centre is located in the Reception Area on the ground floor of the CTICC. The closest Bureau de Change is either the Nedbank or ABSA bank branches located outside the CTICC.



ADDITIONAL SERVICES:

- Business and secretarial services, such as photocopying, faxing, binding, laminating, typing and email, are available at the Exhibition Services Desk opposite the CTICC coffee shop, Coffee on the Square
- Printing (see Printing Services)
- Freighting (enquire at the Exhibition Service Desk in the exhibition halls).

◆ CATERING – EARLY MORNING TEA, MID-MORNING TEA, LUNCH AND AFTERNOON TEA

All congress catering will take place in the exhibition halls on the ground floor of the CTICC. Early morning and mid-morning tea and coffee, lunch, and mid-afternoon tea and coffee are available to all registered delegates and exhibitors.

◆ CERTIFICATE OF ATTENDANCE

An electronic certificate of attendance will be issued within 30 days from the last day of the conference, on request to delegates with fully paid up registrations who attended the congress.

◆ CURRENCY

The rand (symbol 'R'; code 'ZAR') is the South African currency. The rand is divided into 100 cents (symbol 'c').

◆ DIETARY REQUIREMENTS

The CTICC is Halaal certified. Attendees who listed special dietary requirements on their conference registration form are invited to collect their lunches from the special meals service point in the exhibition halls. Attendees attending the Theme Dinner should inform catering staff of these requirements on their registration form.

◆ ELECTRICITY

South Africa: 220/230 V*50 Hz

◆ EMERGENCY CONTACT DETAILS

Doctors Direct:

+27 (0)72 137 1363 / ER24 +27 (0)21 551 6823

**Chris Barnard Hospital, 181 Longmarket Street,
Cape Town 8001:**

Phone: +27 (0)21 480 6111

Police Station:

+27 (0)21 467 8079

◆ FIRST AID

An intermediate life support paramedic will be on duty throughout the event. Attendees will find the paramedic in the Garderobe area of the Registration Foyer on the ground floor of the CTICC. The CTICC also has a medical facility room on –1 Level in the P3 parking area for additional medical support.

◆ INSURANCE

As the conference fee does not include insurance, all attendees are strongly advised to arrange their own travel insurance. Health and accident insurance cover is especially recommended and must be purchased in the attendee's country of origin.

◆ INTERNET ACCESS

Complimentary WiFi is provided from Sunday, 28 August to Friday, 2 September. As the WiFi is primarily for use of the 35TH IGC App and for conference social media interaction, we request that attendees refrain from downloading sizeable documents which will slow the speed. Please be aware that the WiFi speed in South Africa is not of the same rate available in other countries.



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◆ MEDIA DESK

The Media Desk is located in the Registration Services Area, Strelitzia Restaurant on the ground floor of the CTICC. Please contact Nalene de Klerk for all media-related questions and accreditation:

Landline: +27 (0)11 317 3861

Cellphone: +27 (0)81 411 6089

Email: nalene@reputationmatters.co.za

◆ MESSAGES

Attendees are able to message and contact one another after downloading and logging in to the MY IGC App. Congress organisers will broadcast any venue or symposium changes via this App.

◆ MOBILE PHONES AND ELECTRONIC EQUIPMENT

Please consider presenters and other delegates by ensuring mobile phones are set to SILENT or TURNED OFF during all congress sessions.

◆ PARKING

Parking in P1 and P3 is available for attendee use. Attendees requiring a parking voucher should visit the information desk in the CTICC Reception Area on the ground floor.

◆ PRINTING SERVICES

Delegates or exhibitors may contact the company below for printing services.

Lisa Saville

Hotink Print and Design

55 Long Street, Cape Town

Tel: +27 (0)21 422 1208

Email: lisa@hotink.co.za

Web: www.hotink.co.za

Please visit their exhibition stand at G15.

◆ PROGRAMME ROOM ALLOCATION

Attendees will find a folded Theme/Symposium Venue allocation grid in their name badge pouch for quick and easy reference.

◆ RESPONSIBILITY CLAUSE

The organising committee will do their utmost to ensure that your attendance at the conference is enjoyable and worthwhile. No responsibility will be accepted for any partial or total cancellations or changes to the programmes, for whatever reason, without notice. The submission of a registration form was indicative of your acceptance of these conditions.

◆ SAFETY AND SECURITY

(A comprehensive safety procedure is included in this programme)

◆ SECRETARIAT CONTACT DETAILS

Landline: +27 (0)21 910 1913

Fax: +27 (0)21 910 0471

Email: 35igc@allevents.co.za

◆ SPEAKERS' PREPARATION ROOM (SPEAKER READY ROOM) MEETING ROOMS 1.71 – 1.74

The Speakers' Preparation Room (Speaker Ready Room) is located on the first floor of the CTICC in meeting suites 1.71, 1.72, 1.73 and 1.74.

All presenters are required to check into the Speaker Ready Room at least 24 hours before their presentation. Detailed guidelines are provided on the website. Presenters will not be able to use personal laptops in the meeting rooms while delivering their oral presentation. All presentations MUST be loaded from the Speaker Ready Room. Please note that Speaker Ready Room personnel are not responsible for the safekeeping of any devices such as memory cards, disks, laptops, and so on.





SPEAKER READY ROOM OPERATING HOURS:

DATE	TIME
Sunday, 28 August	10:00 - 20:00
Monday, 29 August	06:00 - 19:00
Tuesday, 30 August	06:00 - 19:00

DATE	TIME
Wednesday, 31 August	06:00 - 19:00
Thursday, 1 September	06:00 - 19:00
Friday, 2 September	06:00 - 15:30

◆ TIME ZONE

GMT/UTC +02:00

◆ TRANSPORT

No transport is provided for delegates and they are recommended to use Uber or local metered taxis.

SHUTTLE TRANSPORT

Delegates are required to arrange their own transport to and from Cape Town International Airport. Below are the preferred shuttle companies for the conference.

• CITI HOPPER

Pre-book an airport shuttle online at:

<http://www.citihopper.co.za/booking3x.html> or email bookings@citihopper.co.za

Scheduled/Shared shuttles

- R150 per person
- R50 per spouse/partner/child accompanying a delegate.

Private transfers

- 1 to 3-seater = R280
- 9-seater = R550
- 13-seater = R650.

• GREENCAB

Book an airport shuttle and pay securely online at:

<https://thegreencab.co.za/booking-forms/35th-international-geological-congress-online-transfer-booking/>

Shuttle rate

- R150 per person for a one-way transfer.
- Shuttles will depart every 30 minutes on the dedicated arrival days.

• MYCITI

MyCiTi is a bus-based transit system that delivers fast, comfortable and cost-effective urban mobility with segregated right-of-way infrastructure, rapid and frequent operation, and excellence in marketing and customer service.

For more details, visit: <http://myciti.org.za/en/home/> and <http://myciti.org.za/en/routes/interactive-routes/>

• GAUTRAIN (GAUTENG ONLY)

The Gautrain service offers rapid transport between OR Tambo Airport and Sandton, the Johannesburg CBD and Pretoria. The Gautrain's train, bus and parking services are fully integrated and may be used separately or jointly. For more information, visit <http://join.gautrain.co.za/>

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Rogério Junior (mechanic) and Michael Junio Braga Pereira (mechanical technician)
at Capitão do Mato Mine - Nova Lima, Minas Gerais.

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Photos: Marcelo Coelho

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GEOHOST PROGRAMME

GeoHost is an assistance programme designed and developed by the IUGS to support the attendance of young and financially disadvantaged geoscientists to attend the IGC.

The GeoHost programme has provided 81 applicants with full conference attendance support and a further 66 applicants with registration fee support. In addition, the programme has provided 18 applicants with additional support through associated sponsorships.

The GeoHost Committee would like to extend a special thank you to all the funders of the GeoHost programme:

- The Department of Science and Technology (DST) and National Research Foundation (NRF) provided full conference attendance support to 35 young scientists and 28 delegates from low income countries.
- Pangea Exploration (Pty) Ltd provided registration fee support to 33 South African-based young scientists.
- The Geological Society of South Africa's REI fund provided full conference support to 3 young scientists and 3 delegates from low-income countries. In addition, the Society provided registration fee support to 11 young scientists with GSSA membership.
- Royal Bafokeng provided registration fee support to 12 post-graduate students from the University of Johannesburg.
- Royal Haskoning DHV provided registration fee support to 13 South African-based young scientists.
- The National Science and Technology Forum ProSET fund provided full conference attendance support to 4 young scientists from South Africa.
- The Harmony Gold Mining Company Limited provided registration fee support to 6 South African-based young scientists.
- The African Minerals Development Centre provided full conference attendance support to 3 delegates from African countries.
- Shango Solutions provided full conference attendance support to 3 young scientists from South Africa.
- The Society of Economic Geologists and the Timothy Nutt Fund provided full conference attendance support to 1 young scientist from South Africa.
- The International Council for Science's Regional Office for Africa provided flight tickets for 3 scientists from African countries.

Thank you to our GeoHost partners.



OTHER FORUMS

◆ HOT TOPIC LOUNGE

Brought to you by the American Geophysical Union

The American Geophysical Union (AGU), in cooperation with the IGC, is sponsoring the Hot Topic Lounge to promote discovery and innovation in the earth and space science community and to advance science, by enabling scientists to collaborate and develop solutions, and communicate their findings to the public.

All delegates are encouraged to continue their discussions from the scientific sessions in the Hot Topic Lounge and use this space to meet and forge valuable international collaborations. Delegates are welcome to take this opportunity to deepen their knowledge through extended discussion with conference speakers, and to develop their skills by taking part in the authoring, reviewing and career development workshops.





SOCIAL PROGRAMME

TIME	DATE	FUNCTION	VENUE	DRESS CODE
17:45 - 20:00	28 August	WELCOME FUNCTION / ICE-BREAKER The Welcome Ice-breaker is included in the registration fee for delegates, exhibitors and accompanying persons. Should you wish to book and pay for additional tickets (R500 per ticket), please use your registration profile to book and pay.	Exhibition Area, CTICC	Smart Casual
17:00	28 August	ACCOMPANYING PERSONS ORIENTATION AND WELCOME	Accompanying Persons Lounge, CTICC	N/A
07:00 - 09:30	29 August	GEOHOST RECEPTION (INVITATION ONLY)	Marimba Restaurant, CTICC	Smart Casual
18:30 - 21:00	29 August	IUGS RECEPTION FOR NATIONAL DELEGATES (INVITATION ONLY) (No transport provided)	Artscape Theatre (450 meter walk from CTICC)	Smart Casual
12:00 - 14:00	30 August	GERMAN COMMITTEE – IUGS LUNCH (INVITATION ONLY)	Marimba Restaurant, CTICC	Smart Casual
19:00 - 23:00	30 August	KOREAN NIGHT (INVITATION ONLY)	Westin Ballroom	Smart Casual
19:00 - 23:00	30 August	CHINESE DELEGATION DINNER (INVITATION ONLY)	Marimba Restaurant, CTICC	Smart Casual
19:00 - 21:00	31 August	DINNER HOSTED BY 36TH IGC, INDIA (INVITATION ONLY)		Smart Casual
20:00 - 23:00	1 September	THEME DINNER Themed Dinner tickets are additional costs of R1 300 per ticket. Please book and pay using your online registration profile. (Pre-registration only) (No transport provided)	Zip Zap Circus Tent, DF Malan Street, Foreshore, Cape Town	Smart Casual
17:45 - 19:00	Daily: 29 August - 1 September	HAPPY HOUR Happy Hour is designed to provide a forum for poster viewing, browsing the exhibitions and general networking. Happy Hour will open to delegates, exhibitors and accompanying persons on a cash bar basis.	Poster and Exhibition Area, CTICC	N/A
18:00 - 20:00	31 August	STUDENT GEO-QUIZ (Registration at the EAGE stand)	Hall 4 B1, CTICC	N/A
18:00 - 20:00	29 August and 1 September	MOVIE NIGHT (All attendees invited)	Hall 4 B1, CTICC	N/A
10:00 - 16:00	Daily: 11:00, 12:00, 15:00, 16:00	FREE WINE TASTING & SALES and DIAMOND AND TANZANITE WORKSHOP & SALES (Pre-registration only via Albert Dreyer Knights Catering & Events - albert@knightsevents.co.za)	Diamond Works Show Room (across from CTICC), Ground Floor, Metropolitan Life Centre, 7 Walter Sisulu Avenue, Cape Town	N/A

◆ SOCIAL EVENT TICKETS

Welcome Ice-breaker tickets with drink vouchers will be issued for pre-registered delegates during registration. A cash bar will also be available.

Attendees are requested to collect and sign for their Theme Dinner tickets and drinks vouchers at the Theme Dinner Desk in the Delegate Services Area, Strelitzia Restaurant on the ground floor of CTICC. Delegates wishing to purchase additional tickets are welcome to visit the Theme Dinner Desk to book (R1 300 per ticket). A cash bar will be available.



◆ ACCOMPANYING PERSONS' PROGRAMME

The orientation and welcome for accompanying persons will be held at 17:00 on Sunday, 28 August in the Accompanying Persons' Lounge at the CTICC.

The accompanying persons' registration includes:

- The orientation and welcome
- An orientation pack including a small gift
- Access to the Spouses' Lounge stocked with water, tea and coffee
- Access to the exhibition between 09:00 and 10:00 daily, and during the Opening Ceremony on 29 August
- One tour (Gold, Diamond and Tanzanite tour)
- Attendance at the Welcome Reception

The accompanying persons' registration package excludes access to the Theme Dinner. Tickets may be obtained at an additional cost R1 300 per person, if required.

A complementary Gold, Diamond and Tanzanite half-day tour is included in the accompanying persons' registration package. Africa is famous for its gemstones and this opportunity to visit specialist jewellers and view their exclusive gold, diamond and tanzanite jewellery collections should not to be missed. The tour will depart from the CTICC Reception Foyer daily at 12:30. Please be advised that pre-registration is required.

Accompanying persons are welcome to access the Tours Desks at the CTICC to book tours and activities.

◆ TEST YOUR GEOSCIENCE KNOWLEDGE IN THE GEO-QUIZ

AND WIN TRAVEL GRANTS TO THE EAGE CONFERENCE & EXHIBITION IN PARIS, FRANCE!

Student delegates are invited to participate in the Geo-Quiz and test their knowledge and skills by competing with and against fellow students! The winning student team will receive travel grants to the 79th EAGE Conference & Exhibition 2017, to be held from 12–15 June 2017 in Paris, France.

• GEO-QUIZ

Date: Wednesday, 31 August 2016

Time: 18:00 – 20:00

Location: Hall 4 B1, CTICC

Contact Kirsten Brandt at kbt@eage.org for more information or to register with a team of three students. Onsite registration at the EAGE booth is possible until **16:00 on 31 August**.

• HOW IT WORKS

- Each team consists of three students.
- Each team receives one remote control.
- Once a team has selected 'A', 'B', 'C' or 'D', their answer is final.
- The questions are shown on a screen.
- Teams answer the questions under time pressure.

• THE QUESTIONS

The quiz consists of several rounds with questions related to different geoscience fields – mainly geology, although other fields may include petroleum geoscience, geophysics, petrophysics and drilling. The level of questions will become progressively more difficult with each round.

• WIN TRAVEL GRANTS

A great prize awaits the winning student team, who will receive full travel funding to the EAGE 79th Conference & Exhibition to be held from 12–15 June 2017 in Paris, France. Here, the team will participate in the global EAGE Geo-Quiz and compete against students from all over the world. Hurry! Spaces are limited.



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◆ TOURS & FIELD TRIPS

• TOURS

Cape Town and its surrounds offer much for discerning visitors to see and do. Cape Town is a tourist-friendly city, and tours and activities are easy to organise. One recommended highlight is a visit to the iconic Table Mountain – one of the world's top 10 natural wonders.

Attendees are invited to visit the Tour Desks located in the Additional Registration Services Area, Strelitzia Restaurant, on the ground floor of the CTICC:

- **The Ilios Travel Desk** to book **tailor-made tours and activities**
- **The DHM Travel Desk** to book **accompanying persons' tours**

All tours will depart from the CTICC. Attendees are requested to meet in the CTICC Reception Area at least 15 minutes before the tour departure time.

• FIELD TRIPS

Attendees are invited to visit the **Grosvenor Tours Desk** located in the Additional Registration Services Area, Strelitzia Restaurant, on the ground floor of the CTICC to book any travel services required. Attendees who have booked field trips directly with a ground operator are requested to contact that operator directly.



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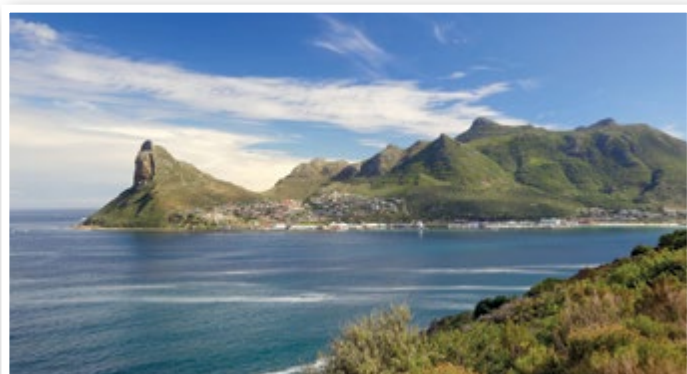
Developing an integrated thermal coal mining and IPP asset in Madagascar



BUSINESS MEETINGS

◆ IUGS BUSINESS MEETINGS

DATE	MEETING / FUNCTION	TIMING	VENUE
Thursday, 25 August	IUGS BUREAU MEETING <i>(INVITATION ONLY)</i>	09:30 - 17:00	Hotel
Friday, 26 August	IUGS EXECUTIVE COMMITTEE MEETING <i>(INVITATION ONLY)</i>	09:00 - 17:00	The Boardroom, 1st Floor, CTICC
Saturday, 27 August	IUGS EXECUTIVE COMMITTEE MEETING <i>(INVITATION ONLY)</i>	09:00 - 16:00	The Boardroom, 1st Floor, CTICC
Sunday, 28 August	1st IGCC MEETING <i>(INVITATION ONLY)</i> Order of bid presentations: 09:30 - 10:00 Germany; 10:15 - 10:45 Korea; 11:00 - 11:30 Russia; 11:45 - 12:15 Turkey	09:00 - 13:00	MR1.51, 1st Floor, CTICC
Monday, 29 August	IUGS RECEPTION FOR NATIONAL DELEGATES <i>(INVITATION ONLY)</i>	18:30 - 21:30	Artscape Theatre
Tuesday, 30 August	IUGS MEETING WITH AFFILIATED ORGANISATIONS <i>(INVITATION ONLY)</i>	18:00 - 20:00	2.61-2.63, 2nd Floor, CTICC
Tuesday, 30 August	IUGS FINANCE COMMITTEE MEETING	18:00 - 21:00	The Boardroom, 1st Floor, CTICC
Wednesday, 31 August	IUGS-IGC COUNCIL MEETING <i>(INVITATION ONLY)</i> (Registration material starts 08:30)	09:30 - 17:30	Roof Terrace, 2nd Floor, CTICC
Thursday, 1 September	IUGS-IGC COUNCIL MEETING <i>(INVITATION ONLY)</i> (Registration material starts 08:30)	08:30 - 17:15	Roof Terrace, 2nd Floor, CTICC
Thursday, 1 September	2nd IGCC MEETING <i>(INVITATION ONLY)</i>	18:00 - 19:00	1.61, 1st Floor, CTICC
Friday, 2 September	IUGS EXECUTIVE COMMITTEE HANDOVER MEETING <i>(INVITATION ONLY)</i>	Lunchtime: 13:15 - 14:15	2.41-2.43, 2nd Floor, CTICC



◆ OTHER BUSINESS MEETINGS

DATE	VENUE	BM#	TITLE	TIME	CONTACT
29 August	1.61	BM05	Business Meeting of IUGS Commission on Geoscience For Environmental Management	18:00 - 20:00	brian@amarker.freserve.co.uk
29 August	1.62	BM06	International Commission on the History of Geological Sciences (INHIGEO)	18:00 - 21:00	barry.cooper@unisa.edu.au
29 August	1.41-1.42	BM11	IAMG General Assembly	18:00 - 21:00	christien.thiart@uct.ac.za
29 August	1.64	BM15	IUGS Task Group on Global Geoscience Professionalism Business Meeting	18:00 - 21:00	edswindell@telkomsa.net
29 August	1.43-1.44	BM19	Meeting with British Geological Survey (BGS), Natural Resources Canada (NRCan) and Geoscience Australia (GA) on existing collaborations and scope of future collaborations	18:00 - 21:00	debashis.saha.gsi@gov.in
29 August	2.41-2.43	BM21.1	CGMW Bureau Meeting 1	18:00 - 21:00	ccgm@sfr.fr
29 August	2.44-2.46	BM27	Sub-commission of Ediacaran Stratigraphy Business Meeting	18:00 - 21:00	xiao@vt.edu
29 August	1.52	BM31	Business Meeting of Indian Geological Congress Members	18:00 - 21:00	bhabeshsarkar2005@gmail.com
29 August	2.61-2.63	BM36	IAEG Richard Wolters Prize Adjudication	18:00 - 20:00	Louis.VanRooy@up.ac.za
29 August	2.64-2.66	BM39	Business Meeting of the International Sub-commission on Jurassic Stratigraphy (ISJS)	18:00 - 21:00	S.P.Hesselbo@exeter.ac.uk
29 August	Aud 2	BM26	Business Meeting of the ICS Sub-commission on Stratigraphic Classification	18:00 - 20:00	mrose.petrizzo@unimi.it
30 August	Aud 2	BM07	Business Meeting of the International Union of Geological Sciences (IUGS)/International Association of Geochemistry (IAGC) Task Group on Global Geochemical Baselines	18:00 - 20:00	alecos.demetriades@gmail.com
30 August	1.61	BM09	IUGS Commission on Geoscience Education, Training & Technology Transfer Business Meeting	18:00 - 21:00	j.m.frias@igeo.ucm-csic.es
30 August	1.62	BM18	CGI Council Meeting 2016	18:00 - 21:00	Kristine.Asch@bgr.de
30 August	2.41-2.43	BM21.2	CGMW Bureau Meeting 2	18:00 - 21:00	ccgm@sfr.fr
30 August	2.44-2.66	BM43	AGID General Assembly	18:00 - 21:00	afia@agni.com
30 August	1.63	BM28	Geological Society of Africa Council Meeting	18:00 - 20:00	mogessie@uni-graz.at
30 August	1.64	BM34	IAEG Aggregate Commission Meeting (C17)	18:00 - 21:00	Tugrul@istanbul.edu.tr
30 August	1.41-1.42	BM38	Business meeting of the International Sub-commission on Cretaceous Stratigraphy	18:00 - 21:00	huberb@si.edu
30 August	2.64-2.66	BM14	YES AGM	18:00 - 21:00	yeswangmeng@gmail.com
31 August	1.43-1.44	BM41	Organisational Meeting of the Geological Society of America	18:00 - 21:00	vmconnell@geosociety.org
31 August	1.62	BM04	Heritage Stone Task Group (HSTG)/IGCP Project 637/IAEG Commission (C10 - Building Stones and Ornamental Rocks)	18:00 - 21:00	barry.cooper@unisa.edu.au
31 August	1.63	BM08	Business Meeting of the International Association for Geoethics (IAGETH)	18:00 - 21:00	jmfrias2011@gmail.com
31 August	1.64	BM12	International Geoscience Education Organisation (IGEO) Council Meeting	18:00 - 21:00	bronte.nicholls@asms.sa.edu.au
31 August	1.61	BM20	Business Meeting of International Commission on Stratigraphy (ICS)	18:00 - 20:00	Stan.Finney@csulb.edu
31 August	1.41-1.42	BM22	CGMW General Assembly	18:00 - 21:00	ccgm@sfr.fr

DATE	VENUE	BM#	TITLE	TIME	CONTACT
31 August	2.44-2.46	BM24	Business Meeting of the International Sub-commission on Devonian Stratigraphy	18:00 - 21:00	slavik@gli.cas.cz
31 August	2.61-2.63	BM25	General Assembly of the International Association for Promoting Geoethics (IAPG)	18:00 - 21:00	giuseppe.dicapua@ingv.it
31 August	2.41-2.43	BM33	IGC P632 Business Meeting	18:00 - 21:00	jgsha@nigpas.ac.cn
31 August	2.64-2.66	BM37	IAEG General Assembly	18:00 - 20:00	louis.vanrooy@up.ac.za
31 August	1.52	BM42	German National Committee for IUGS Business Meeting	18:00 - 21:00	bismuth@gfz-potsdam.de
1 September	Aud 2	BM02	Business Meeting of the ICS Sub-commission on Quaternary Stratigraphy	18:00 - 20:00	mjhead@brocku.ca

♦ WORKSHOPS (PRE CONGRESS)

REGISTRATION: 08:00 – 09:00, CTICC, first floor, Outside Meeting Room 1.40.

SESSION START: 09:00 – 10:00
Tea Break 10:00 – 10:30

SESSION RESUMES: 10:30 – 12:00
Lunch Break 12:00 – 13:00

SESSION RESUMES: 13:00 – 14:30
Tea Break 14:30 – 15:00

SESSION RESUMES: 15:00 – 17:00

DATE	VENUE	WKSHP	TITLE
27 August	1.62	WK29	Bits of Maths and Stats for Prospectively Modelling
27 August	1.61	WK30	Criteria for Identifying Contourite Deposits
27 - 28 August	2.61-2.63	WK4	Global-scale Geochemical Mapping (27 August in venue; 28 August field trip)
27 - 28 August	Offsite	WK9	Geoscience Information for Teachers (GIFT)
27 - 28 August	1.63	WK15	Geochemical Reaction Modelling
27 - 28 August	1.43-1.44	WK33	Use of Ground Truth Data to Develop and Enhance Regional Earth Models (CTBTO)
27 - 28 August	1.64	WK12	Gold Deposits: Their Geology, Geochemistry and Genesis (SEG Workshop)
28 August	1.62	WK1	Hyperspectral Core Imaging: An Emerging Technology for Geological and Mining Applications
28 August	MS1.53	WK3.5	Social Responsibility and Sustainability: Education and Practice
28 August	2.41-2.43	WK6	Drilling Short Course
28 August	1.61	WK13	Economic Geology 101 Short Course
28 August	MS1.52	WK14	Understanding the Role of Groundwater in the 21st Century
28 August	1.41-1.42	WK25	Porphyry and IOCG Deposits: Genesis Links and Differences
28 August	2.64-2.66	WK24	Remote Sensing for Mineral Exploration
28 August	2.44-2.46	WK27	Working with Interoperable Geoscience Data
28 August	2.61-2.63	WK28	Vectoring to mineralisation using exploration geochemistry
28 August	Roof Terrace	WK32	Development and Implementation of Collaborative e-Infrastructures and Data Management for Global Change Research

PLENARY SPEAKERS

Distinguished invited speakers will give presentations on major contemporary themes in the geosciences in plenary sessions to be held each day, Monday to Friday, from 12:15 to 13:15 in Auditorium 1 of the CTICC, with live streaming to the CTICC Ballroom West, Ballroom East and Exhibition Hall.

◆ PLENARY SESSION 1



IS AFRICA DOING ENOUGH TO PROMOTE ITS MINERAL ENDOWMENT?

Mr. Siphso Nkosi

◆ PLENARY SESSION 2



GRAND CHALLENGES IN METAL LIFE CYCLES

Prof. Thomas Graedel
(sponsored by Harmony)

◆ PLENARY SESSION 3



BREACHING THE BOUNDARIES BETWEEN SCIENCE AND PROFESSION – AN IMPERATIVE FOR GEOSCIENCE IN THE SERVICE OF SOCIETY

Ms. Ruth Allington

◆ PLENARY SESSION 4



AFRICA, HUMANS AND THE GLOBAL CLIMATE

Prof. Bob Scholes

◆ PLENARY SESSION 5



GEOLOGICAL CYCLES AND THE GENERATION OF THE CONTINENTAL CRUST

Prof. Chris Hawkesworth
(sponsored by Geological Society of South Africa)

◆ PLENARY SESSION 6



PALAEOBIOLOGICAL INSIGHTS FROM FOSSIL BONES

Prof. Anusuya Chinsamy-Turan

◆ PLENARY SESSION 7



DRILLING BENEATH THE HYPE – TECHNICAL CHALLENGES FOR THE EXPLORATION OF SHALE GAS

Prof. Joseph Cartwright

◆ PLENARY SESSION 8



AFRICA ALIVE CORRIDORS – A 3,5 BILLION YEAR GEOLOGICAL, BIOLOGICAL AND CULTURAL BIOGRAPHY OF AFRICA

Prof. John Anderson

◆ PLENARY SESSION 9



MINING INDUSTRY AND SOCIETY – THE NEW CHALLENGING FRONTIER

Prof. Michel Jébrak

◆ PLENARY SESSION 10



DAMAGING EARTHQUAKES IN AFRICA – THEIR SEISMOTECTONIC BACKGROUND AND SEISMIC HAZARD IMPLICATIONS

Prof. Mustafa Meghraoui

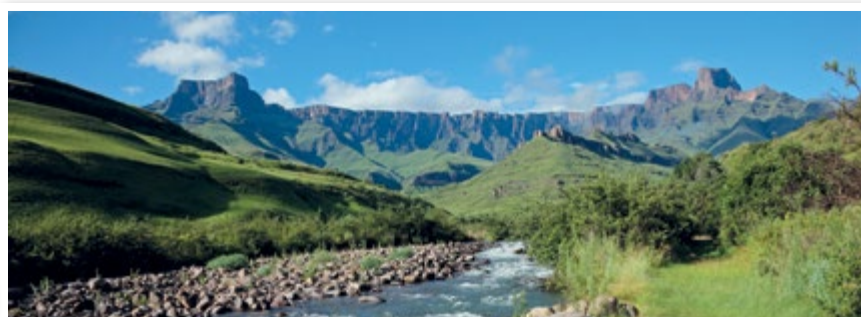
PROGRAMME OVERVIEW

◆ MONDAY, 29 AUGUST 2016 • OPENING CEREMONY • 09:00 – 11:15

PROGRAMME

MC AND SAFETY BRIEFING	Mr. Gugulethu Cele
WELCOME	35 TH IGC Secretary General: Dr. Greg Botha
CO-PRESIDENTIAL WELCOME	35 TH IGC Co-president: Dr. Jeannette McGill 35 TH IGC Co-president: Dr. Richard Viljoen
KEYNOTE ADDRESS BY THE DEPARTMENT OF MINERAL RESOURCES	Minister of Mineral Resources, Mr. Mosebenzi Zwane (MP)
IUGS PROGRAMME	Dr. Roland Oberhänsli
ADDRESS BY THE NEWLY ELECTED ICSU PRESIDENT	Dr. Daya Reddy
ADDRESS BY THE SECRETARY OF THE IGP–UNESCO	Dr. Patrick McKeever
ADDRESS BY IUGS PRESIDENT & CITATION FOR THE EMILE ARGAND AWARDEE	Dr. Roland Oberhänsli
KEYNOTE BY PROF. JUDITH A MCKENZIE	Prof. Judith A McKenzie
ADDRESS BY KEYNOTE SPONSOR: EXXARO RESOURCES LIMITED	Exxaro Resources Limited: Mr. Mxolisi Mgojo
PROGRAMME OVERVIEW	Scientific Programme Chair: Prof. Laurence Robb
LEGACY PROGRAMME	Legacy Chairperson and 35 TH IGC Co-president: Dr. Richard Viljoen
FIELD TRIPS OVERVIEW	35 TH IGC Co-president: Dr. Jeannette McGill
CLOSING	Local Entertainment

Delegates and honourable guests are invited to join the 35IGC delegation for Tea/Coffee in the Exhibition Halls, ground floor, CTICC.



DOB SA 44888/E

YOU'VE ARRIVED

the moment you board

EMIRATES BUSINESS

Relax in comfort and enjoy gourmet cuisine, over 2,500 channels of entertainment and then lie back on a fully flat bed.

Hello Tomorrow





LATE CHANGES TO THE SCIENTIFIC PROGRAMME

Late cancellations of presentations and changes to the published scientific programme will be advised each morning electronically using the monitors in the CTICC. Delegates are advised to check the monitors regularly.

POSTER SESSIONS

Poster sessions will take place from Monday, 29 August through to Thursday, 1 September from 17:45 – 19:00 in the exhibition halls. A cash bar will be available at the end of the daily programme during the 'Happy Hour'. The poster session on Friday, 2 September will be held from 12:15 – 14:00.

A list of the posters to be presented each day will be listed in your daily programme.

◆ POSTERS

Presenters will find their poster board on presentation day using the poster board number assigned to their abstract number and title.

Posters should be put up before 08:00 on the morning of the presentation and removed by 19:30. Posters remaining after will be removed and recycled.

Staff at the Poster Assistance Booth located in the Hall 2 Garderobe are available to assist with queries and poster location. Presenters are required to provide their own poster-mounting supplies and are required to use only double-sided tape, TikTak or Prestik.

YES PROGRAMME

The Young Earth Scientists (YES) Network will coordinate a number of activities, functions and scientific sessions at the conference for its members and other young scientists. Look out for the YES presentations at various scientific sessions throughout the programme.

◆ YES LOUNGE: ART GALLERY, 1ST FLOOR, CTICC

The YES Network invites all young scientists to meet, network and share ideas at the dedicated YES Lounge in the Art Gallery on the 1st floor of the CTICC. YES will also be available at the IUGS booth to help direct members.

◆ YES ANNUAL GENERAL MEETING (AGM): TUESDAY, 30 AUGUST

The YES Annual General Meeting (AGM) 2016 will be held in room 2.64–2.66 from 18:00 – 21:00 on 30 August. The report by the President, Secretary General and Vice President will be presented at the AGM and all YES National Committee Members will vote on some pending YES Network issues. YES members and national representatives, as well as congress attendees who would like to join the YES Network, are welcome to attend.

◆ YES NETWORK SOUVENIR

Delegates who are registered YES members are invited to visit the YES Lounge to collect a complimentary gift of outdoor clothing kindly sponsored by KROCEUS (Earth Scientists).

◆ YES SOCIAL EVENTS

The YES Network will coordinate various events and activities throughout the duration of the IGC. Attendees should contact the YES Network regularly for updates. Visit the YES Lounge for more information.

◆ YES TOUR OF THE GEOLOGY OF CAPE TOWN

SOLD OUT: Saturday, 3 September: A one-day tour of Cape Town's rocks and mountains, with a focus on the local geology. The tour will be led by Ms. Ndivhuwo Cecilia Mukosi (cmukosi@geoscience.org.za) and Mr. JP Hunt from the Council for Geoscience, South Africa.

DST PROFILE

The vision of the Department of Science and Technology (DST) is to create a prosperous society that derives enduring and equitable benefits from science and technology. Its mission is to develop, coordinate and manage a national system of innovation that will bring about maximum human capital, sustainable economic growth and improved quality of life for all.

When the DST was established in 2004, it was assigned a leading role in modernising South Africa's economy.

The 2002 National Research and Development Strategy (NRDS) was well received in the science system, and substantial financial resources invested by the government, partners and stakeholders have seen significant progress in the attainment of the strategy's objectives. These include an integrated approach to human capital development, investment in science and technology infrastructure, and improving the strategic management of the public science and technology system to optimise its contribution to wealth creation and an improved quality of life.

Another important DST strategy, the Ten-Year Innovation Plan (2008-2018) was developed to help drive South Africa towards sustained economic growth and a knowledge-based economy. The Plan introduces five "grand challenges" that continue to receive priority attention from government and researchers, to find ways of bridging the "innovation chasm" between research results and socio-economic benefits. For this to be achieved, government through the DST has been making important investments in human capital development, knowledge production, and the exploitation of such knowledge for commercial purposes.

The five "grand challenges" include strengthening the bioeconomy, growing space science and technology, assuring energy security, responding to global change (with a focus on climate change), and contributing to a global understanding of shifting social dynamics in development.

A quick look at the events and milestones of the past few years reveal that the country is positioning itself among global leaders in innovation, science and technology. One of the most iconic indicators in this regard is the country's remarkable work as

part of the global science project to build the world's largest radio telescope, the Square Kilometre Array, much of which is being hosted in the Northern Cape. The project has attracted considerable financial investment in infrastructure and skills advancement.

In additive manufacturing, DST-funded work is driving and funding the national development and adoption of metal and polymer additive manufacturing technology to position South Africa as a competitor in the global market. Through the Collaborative Programme in Additive Manufacturing and the Aeroswift Technology Platform, it is developing and improving design capabilities specifically for the additive manufacturing industry, as well as building a platform for the production of large titanium structures, with a very specific focus on the aerospace industry.

With science and technology critical elements in the growth and development of Africa, the DST is also playing a leading role in the development, integration and unification of the continent. The Department continues to strengthen its science, technology and innovation relations through a diverse portfolio of bilateral and multilateral relations, including with the BRICS grouping (Brazil, Russia, India, China and South Africa) and the European Union.

South Africa is also building muscle in the areas of health research, earth observation, renewable energy and the beneficiation of metals. Information and communication technology are being used in pilot projects to show how technologies can benefit South Africans, especially in previously marginalised communities, in respect of education needs, among others. The DST's Technology Localisation Programme is being used to improve the competitiveness of small and medium enterprises.

As required by the National Development Plan, the DST will continue its efforts to provide South Africa with enduring benefits from science, technology and innovation.

For more information contact Zama Mthethwa, Account Executive. Zama.Mthethwa@dst.gov.za or www.dst.gov.za



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

◆ YES AWARDS

The YES Network and the 35TH IGC will present three awards during the Closing Ceremony:

- the **Best Poster from a Young Earth Scientist at the 35TH IGC**
- the winner of the **Outstanding Young Earth Scientist Award**
- the winner of **Best Abstracts Competition in Applied Geochemistry** (supported by the YES Network and the IUGS/IAGC Task Group on Global Geochemical Baselines).

◆ YES SCIENTIFIC SESSIONS

The YES Network has proposed a number of sessions within the scientific programme. Specifically, the sessions entitled '*Interrelationship between Deformation and Metamorphism during Orogenesis*' and '*Field-based Geoscience Education: A YES Network Comparison*' were proposed by YES and supported by YES members and the broader IGC community.

YES contributions in the programme may be identified by the YES logo.

◆ YES TRAVEL GRANTS

The YES Network arranged a number of travel grants to support the attendance of YES members at the 35TH IGC. These include the IAMG–YES Student Travel Grant Programme and the IAS Travel Grant for sedimentology-related contributors.

◆ YES CONTACTS

For further information, contact:

Meng Wang (YES Network President): yeswangmeng@gmail.com

Tanvi Arora (YES Secretary General): tanvi.gpy@gmail.com

Ndivhuwo Cecilia Mukosi (YES South Africa): ncmukosi@gmail.com

CONFERENCE PUBLICATIONS AND MEMORABILIA

A range of publications and memorabilia are available for delegates to purchase as mementoes of the congress and as valuable collectors' items.

- Two commemorative publications highlight many unique features of African geology.
 - '**Africa's Top Geological Sites**' provides an overview of many of the continent's outstanding geological features and landforms, as well as its fossil records, meteorite impact features, and magnificent precious and semi-precious stones in 44 beautifully illustrated chapters. Delegates who requested a copy of this publication and paid their R180 are invited to collect their book from the GSSA stand.
 - '**The Great Mineral Fields of Africa**', a special Episodes congress volume, presents a review of many world-famous mineral deposits found on the African continent. Delegates who indicated that they would like a free copy are invited to collect their book from the GSSA stand.
- A special set of '**10 first-day cover stamps**' depicting several of South Africa's geological highlights have been printed by the South African Post Office.
- Other items prepared especially for the 35TH IGC include a desk calendar with 12 top geological sights and 10 posters depicting the artwork of renowned South African geo-artist Maggie Newman.

These mementoes are available from the Council for Geoscience stand, the GSSA stand and the IUGS stand in the exhibition halls.

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It is Venmyn Deloitte's ability to provide a comprehensive range of technical and financial services that makes it an exceptional advisory company, especially in the preparation of concise regulatory compliant reports and documents on public domain transactions. The team of dedicated professionals at Venmyn Deloitte is made up of geologists, mining and processing engineers, environmental scientists, computer scientists and chartered accountants with collectively over 100 years of experience in the assessment and evaluation of mining projects.

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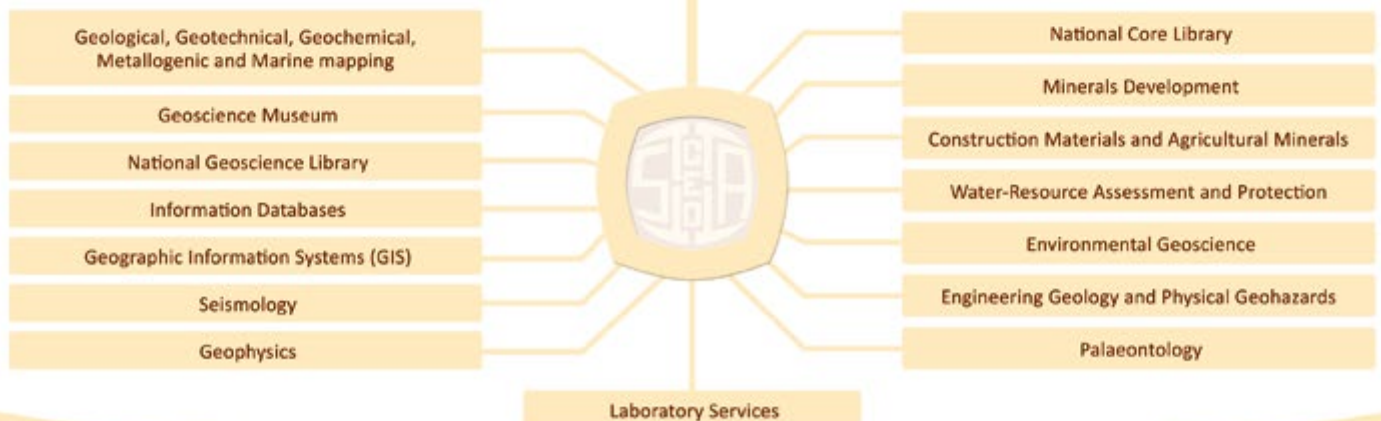
COUNCIL FOR GEOSCIENCE

The Council for Geoscience has been mandated to be the custodians of geotechnical information, to be a national advisory authority in respect of geohazards related to infrastructure and development, and to undertake reconnaissance operations, prospecting research and other related activities in the mineral sector; and to provide for matters connected therewith.

"Quoted from Geoscience Act 100 of 1993"



WHAT WE DO



EXHIBITIONS

The GeoExpo is located in the exhibition halls located on the ground floor of the CTICC.

TIME	DATE	FUNCTION	VENUE
17:00 - 20:00	28 August	Welcome Reception / Ice-breaker	Entire lower level of the CTICC
08:45 - 17:00	29 August	Exhibition Open	Entire lower level of the CTICC
08:45 - 17:00	30 August	Exhibition Open	Entire lower level of the CTICC
08:45 - 17:00	31 August	Exhibition Open	Entire lower level of the CTICC
08:45 - 17:00	1 September	Exhibition Open	Entire lower level of the CTICC
08:45 - 17:00	2 September	Exhibition Open	Entire lower level of the CTICC

Exhibitors will be allowed early access to prepare and restock their stands before the exhibition opens. Exhibitors are required to be at their stands at least 15 minutes before the exhibition opens.

Please note: The exhibition opening hours will have some flexibility to match those of the conference. It is in the exhibitors' best interest to ensure their stands are manned at all times during the conference.

◆ MESSENGERS FROM THE MANTLE

Attendees are invited to visit the '*Messengers from the Mantle*' exhibition in the Roof Terrace Foyer. The formation of diamonds form the centrepiece of the exhibition, which is told through a unique Southern African geological archive. '*Messengers from the Mantle*' treat rocks as time capsules of past journeys and present processes, that through detailed investigation, continue to reveal fascinating insights into the evolution of our planet.

◆ PECKING NATURAL SCIENCE-ART ORGANISATION (PNSO)

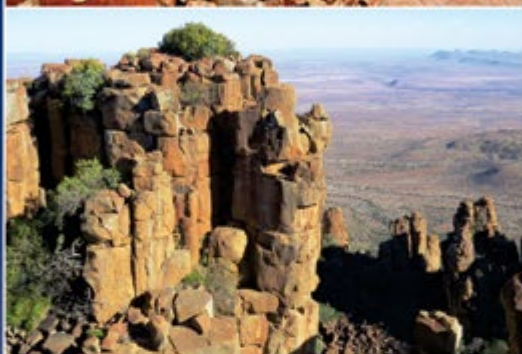
Attendees are invited to visit the '*Pecking Natural Science-art Organization*' (PNSO) exhibition in the Auditorium 1 Foyer. PNSO is a leading science art institution that focus on creation and research. Founded by science artist ZHAO Chuang and science fairytale writers YANG Yang and TANG Zhenting in 2009, PNSO has been working together with top research institutions. Their work and publications include fossil restoration, constellation art, mythology research, children's literature and early education.

◆ EXHIBITORS

STAND	ORGANISATION	STAND	ORGANISATION
A1	International Association For Mathematical Geosciences	C1	Royal Society Publishing
A3	Sandvik (Pty) Ltd.	C2	Gemstones
A4	United Spectrometer Technologies CC	C3	Wirsam Scientific
A5	Taylor and Francis Group Limited	C4	SEPM Society for Sedimentary Geology
A6	New Resolution Geophysics	C5	CAMECA
A7	SEG	C6	International Association Of Sedimentologists (IAS)
A8	GIGSA	C7	SACNASP
A9	Geological Society of Africa	C8	Qotho Laboratory Services
A13	EAGE	C9	Commission For The Geological Map Of The World
B1	African Mineral Standards (AMIS)	C10	Mine Health and Safety Council
B2	PROJECTS IN KYRGYZSTAN AND TAJIKISTAN	C11	Mintek
B3	Elsevier	C12	Geological Society Of America
B4	Jeannette Unite Art Studio	C13	Geological Survey of Japan, AIST
B5	African Gems And Minerals	C14	The Geological Society Of London
B6	Jeannette Unite Art Studio	C15	Geovariations SAS
B7	Beijing Deyan Technology Co., Ltd.	C16	Beak Consultants GmbH
B8	Ucp Africa (Pty) Ltd	C17	TerraCore
B9	University of Stellenbosch	C18	UNISA
B10	Set Point Laboratories	C19	Assegai Geophysics
B11	ZEISS	C20	Micromine
B12	SRK Consulting (South Africa)	C21	Panalytical



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The Geological Society of South Africa is Proud to be a Partner in the

35th International Geological Congress

We welcome our international colleagues to Cape Town, and wish them a successful Congress and an enjoyable visit to South Africa.

The Geological Society of South Africa (GSSA) is a Non-Profit Voluntary Association of Earth Scientists, with a focus on geology and earth science in South Africa and the wider African continent. The Society was formed in 1895 in response to the need to understand and document the newly found South African mineral wealth, and for 120 years has maintained its standing as a leading African professional society.

Since its inception the goals of the GSSA have been to promote the study of the earth sciences, to promote and protect the best interests of earth science practitioners, the profession, and its members. GSSA members are expected to uphold the highest professional and ethical standards for the professional and public good.

The GSSA publishes the South African Journal of Geology, a peer reviewed scientific journal focused on African geology. Geobulletin is a quarterly news bulletin designed to inform members and non-members of news and events of importance to the membership and the public.

Delegates are invited to visit the GSSA stand in the exhibition hall for more information.

email info@gssa.org.za

GSSA
5 Hollard Str, Marshalltown,
Johannesburg, 2000, South Africa.

P.O. Box 61809, Marshalltown, 2107,
Johannesburg, South Africa.

www.gssa.org.za

◆ EXHIBITORS, cont.

STAND	ORGANISATION	STAND	ORGANISATION
C23	Intertek	EE6	Korea Institute of Geoscience and Mineral Resources
C25	Leica Microsystems	EE7A	BAUER Maschinen GmbH
C26	Kwazinto African Crafts	EE7B	Vale Exploration
C27	Leica Microsystems	EE8	U.S. Geological Survey
C28	Bureau Veritas Minerals	EE9	BRGM - French Geological Survey
C29	F.W. Breithaupt & Sohn GmbH & Co. KG	EE10	International Continental Scientific Drilling Program ICDP
C30	DMT Kai Batla Pty Ltd.	F15	Bruker
C31	Aciei Geomatics (pty) Ltd.	F16	Coresafe
C32A	University of Pretoria	F17	TECT Geological Consulting
C32B	Council for Geoscience	F18	XPotential Geoscientific Consulting
C33A	Universidad Nacional De Colombia	F19	Beta Analytic
C33B	China University of Geosciences	F20	Acacia Mining
C34A	University Of Johannesburg	F21	AAPG
C34B	North West University	FF1	Bruker
C35B	ICSU Regional Office For Africa	FF2	WESTERNEX
C37	Advanced Geosciences Europe SI	FF3	Digital Surveying
D2	Maxwell Geoservices	FF4	International Union of Geological Sciences (IUGS)
D3	OLYMPUS	FF5	International Union of Geological Sciences (IUGS)
D4	Geo-Explore Store (Pty) LTD	FF6	Council for Geoscience
D5	Activation Laboratories Ltd. (Actlabs)	FF7	Geological Society Of China
D6	Spectral Evolution	FF8	Geological Society Of China
D7	Geotech Airborne Limited	FF9	SciAps Inc.
D8	Southern Mapping	FF10	REFLEX
D9	Phoenix Geophysics Ltd.	G1	National Research Foundation
DD1	General Directorate Of Mineral Research And Exploration of Turkey	G2	National Research Foundation
DD2	The Geological Society Of South Africa	G4	CoreScan
DD3	EuroGeoSurveys	G5	DST-NRF CIMERA and DST-NRF CoE In PALAEOSCIENCES
DD4	Exxaro Resources Limited	G6	China University Of Geosciences (Beijing)
DD5	Springer Nature	G7	Gifts Of Africa
DD6	Aranz Geo SA (Pty) Ltd.	G8	GIA (Gemological Institute of America)
E7	Afri Core	G9	American Geosciences Institute
E8	United Scientific	G10	China University of Geosciences (Wuhan)
E9	Bartington Instruments Ltd.	G11	Behre Dolbear
E10	Spectral Geophysics	G12	Xcalibur Airborne Geophysics Pty Ltd.
E11	Ministry of Mineral Resources Greenland	G13	Godwana Map
E12	Government of Canada	G14	Godwana Map
E13	Resources for Future Generations 2018 (RFG)	G15	Hot Ink
E14	Spatial Dimension	GG1	Bundesanstalt Für Geowissenschaften Und Rohstoffe
E15	Geoscan Ltd.	GG2	GFZ German Research Centre For Geosciences
E22	Cambridge University Press	GG3	GFZ German Research Centre For Geosciences
EE1	Geosense	GG4	GFZ German Research Centre For Geosciences
EE2	Micro-G LaCoste - Scintrex	GG5	36th IGC Secretariat C/o Geological Survey Of India
EE3	Kazakhstan Geological Society, Republic of Kazakhstan	GG6	Geological Survey Of Norway
EE4	Russian Geological Research Institute (VSEGEI)	GG7	Petroleum Agency SA
EE5	Russian Geological Research Institute (VSEGEI)	GG8	Geological Survey Of Norway



Groundbreaking Science

South Africa is the world's most valuable piece of real estate. In addition to world class deposits of iron, uranium, diamonds and coal, the country leads the world in resource concentrations of gold, chromium, manganese, fluorite, aluminosilicates, platinum-group elements and more.

That's why, when you try to unearth the wealth of knowledge buried underground, it's a good idea to have the support of the National Research Foundation, the agency that is busy shaping South Africa's science and technology system.

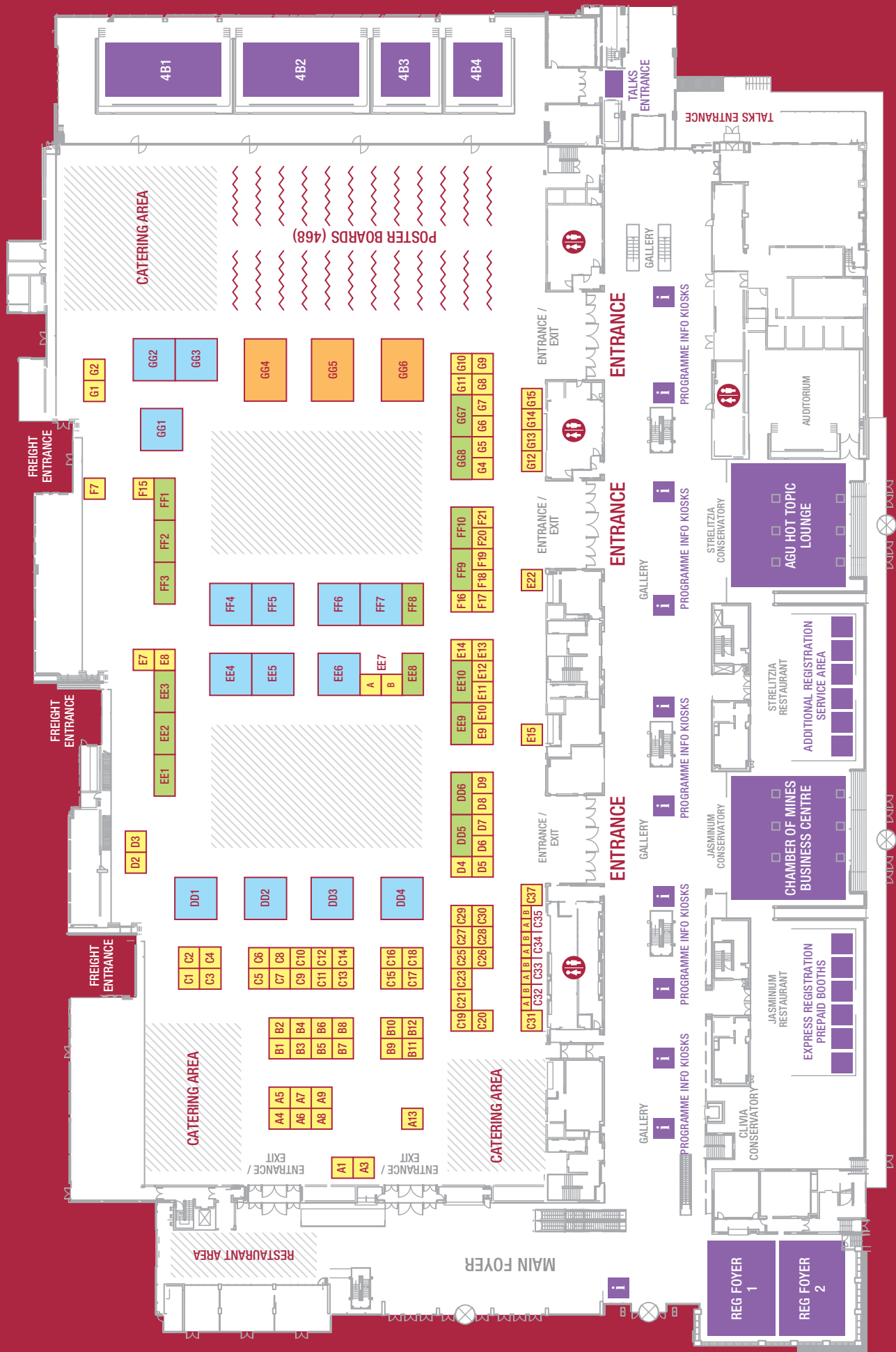
Our research support for the geosciences includes the DST-NRF Centre of Excellence for Integrated Mineral and Energy Resource Analysis (CIMERA). Housed at the Department of Geology at the University of Johannesburg, CIMERA's research focuses on Earth mineral and fossil energy resource systems.

The NRF also supports three geoscience Chairs under its South African Research Chairs Initiative (SARChI) – the SARChI Research Chair in Geometallurgy at the University of Johannesburg; in Experimental Petrology at Stellenbosch University; and in Exploration, Earthquakes and Mining Seismology at the University of the Witwatersrand.

Over the last five years, the NRF has supported 99 researchers in the field of geoscience and provided more than R51,8 million in research funding, and institutional and human capital development.

For more information on how the NRF is helping to secure South Africa's future prosperity, visit www.nrf.ac.za.

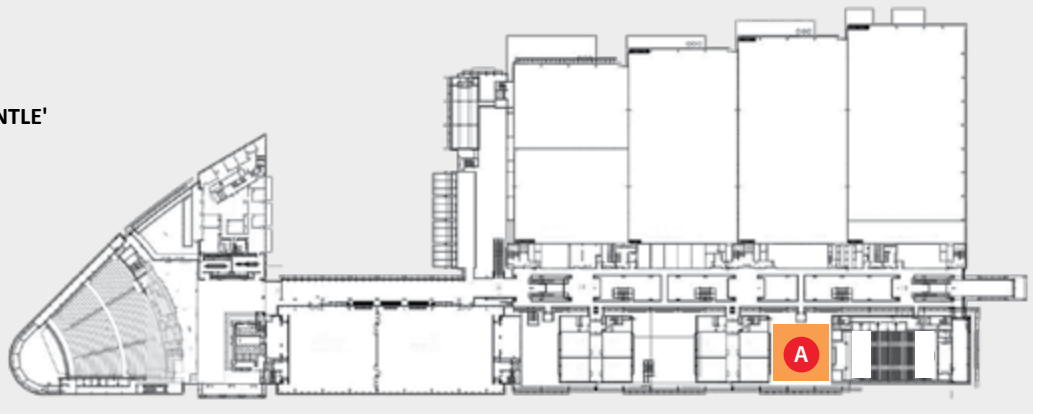
EXHIBITOR FLOORPLAN



EXHIBITION FLOORPLAN

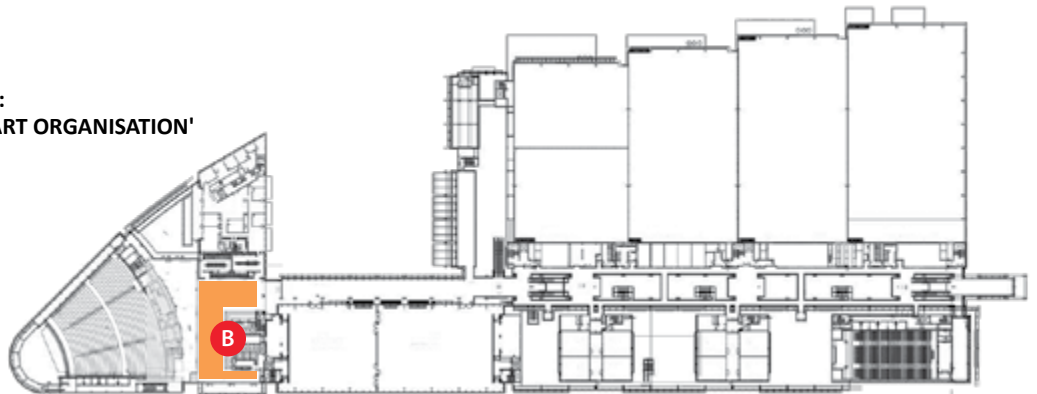
LEVEL 2

- A. Roof Terrace Foyer Exhibition:
'MESSENGERS FROM THE MANTLE'



LEVEL 1

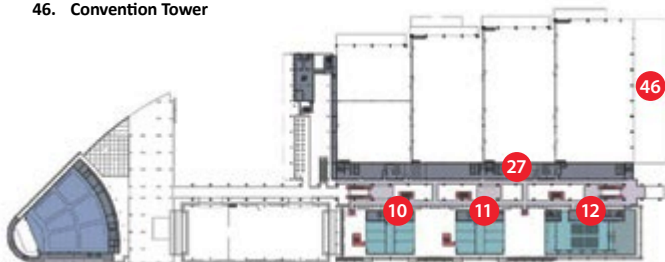
- B. Auditorium 1 Foyer Exhibition:
'PECKING NATURAL SCIENCE-ART ORGANISATION'
(PNSO)



CTICC – GENERAL FLOORPLAN

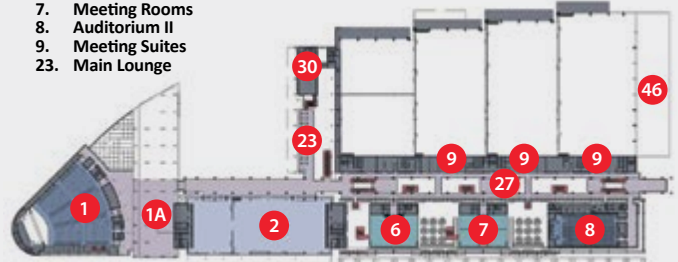
LEVEL 2

- 10. Meeting Rooms
- 11. Meeting Rooms
- 12. Roof Terrace
- 27. Gallery Walkway
- 46. Convention Tower



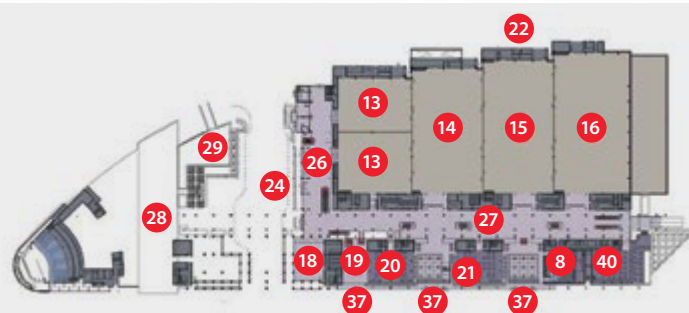
LEVEL 1

- 1. Auditorium I
- 1A. Auditorium I Foyer
- 2. Ballroom
- 6. Meeting Rooms
- 7. Meeting Rooms
- 8. Auditorium II
- 9. Meeting Suites
- 23. Main Lounge
- 27. Gallery Walkway
- 30. Management Offices
- 46. Convention Tower



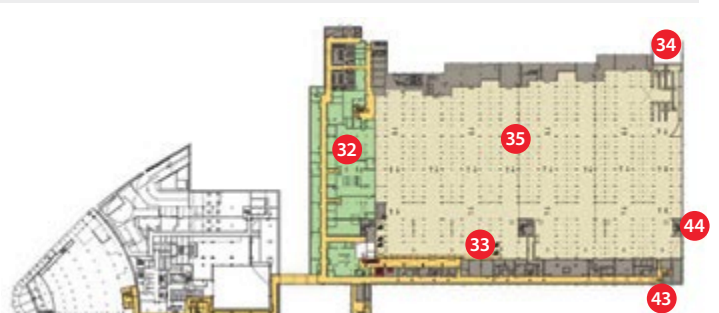
GROUND FLOOR

- 8. Auditorium II
- 13. Exhibition Hall 1A & 1B
- 14. Exhibition Hall 2
- 15. Exhibition Hall 3
- 16. Exhibition Hall 4A & 4B
- 17. Full Exhibition Centre
- 18. Registration Foyer
- 19. Clivia Conservatory
- 20. Jasminium Restaurant
- 20. Jasminium Conservatory
- 21. Strelitzia Restaurant
- 21. Strelitzia Conservatory
- 22. Marshalling Yard
- 24. Convention Square & Main Entrance
- 26. Main Foyer
- 27. Gallery Walkway
- 28. Westin Cape Town
- 29. Canal Head & Ferry Terminal
- 37. Walter Sisulu Entrances
- 40. Marimba Restaurant



LEVEL -1

- 32. Main Kitchen
- 33. Lower Foyer Entrance
- 34. P3 Parking Entrance
- 35. P3 Parking Basement
- 43. Marimba Restaurant Basement Entrance
- 44. Convention Tower Parking



SOCIAL MEDIA COMPETITION

WIN a gift pack of delicious South African wines by sharing a 'selfie' of your 35TH IGC experience!

Whether it's a picture of you with new acquaintances, old friends, an interesting discovery or exploring the city, simply share it on Facebook or Twitter with the hashtag #35thIGC. We will select a daily winner who will receive a gift pack of wine, courtesy of Eikendal Wine Estate.



Terms and conditions:

- The judge's decision is final.
- Prizes cannot be exchanged for cash.
- Winners will be announced in the daily 35TH IGC newsletter and on Twitter.
- The competition runs from 27 August to 1 September 2016



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www.linkedin.com/company/3645077

Event Hashtag: #35thIGC

35TH IGC MEETING APP – MY IGC

Brought to you by Anglo American

We are pleased to announce that, for the first time in the history of the IGC, the organisers have provided all delegates with an App called 'MY IGC', which may be downloaded before the conference from <http://www.35igc.org/Verso/225/My-IGC>. MY IGC provides delegates with all the information needed for a successful event.

Delegates will then have access to detailed information about speakers, sessions, programme updates, poster sessions and exhibitor information.

Problems downloading the App? Then view it on the touch screens located in the gallery of the CTICC.

◆ APP FEATURES

- View the agenda
- View the abstracts
- View the exhibitor list
- Download the programme and build your personal itinerary
- Network with colleagues
- Receive updates and messages at the conference



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GLOBAL
producer of gold



AngloGold Ashanti, a gold mining company with a globally diverse, world-class portfolio of operations and projects, is headquartered in Johannesburg, South Africa. AngloGold Ashanti is the third-largest gold mining company in the world, measured by production.

Our portfolio of 17 mines in nine countries comprises long-life, relatively low-cost assets with differing ore body types, located in key gold-producing regions.



52,566 people employed



\$4,015 million
gold income generated in 2015

"We have a high-quality portfolio of long-life gold assets with strong leverage to gold price, energy and currency."

FIRE/SAFETY REGULATIONS & EMERGENCY PROCEDURES

FIRE REGULATIONS

- There are strict regulations governing the materials that may be used in the construction of stands, the demonstration of products and preparation of foods.
- It shall be the responsibility of each exhibitor to observe all current fire regulations that are applicable to his or her circumstances.
- The Local Authority has the right to remove any offending fittings or materials and ultimately close down a stand should any fire regulations be contravened or if it is deemed that your stand may cause a fire hazard.
- Regular inspections will be carried out by a member of the Fire Prevention Branch to ensure that the fire requirements have been met.
- No flammable/highly combustible materials constituting a fire hazard such as hessian, straw, polystyrene, paper, polyurethanes, and so on may be used in the construction of stands or in the display therein.
- It may be necessary or prudent to 'fire proof' your stand. Where necessary, a certificate of fire proofing must be forwarded to the organisers 14 days prior to build up. Failure to do so may result in you not being allowed to construct your stand. A flame test might be carried out by the fire department. The CTICC can assist with the contact details of a flame retardant service.

WRITTEN PERMISSION

Written permission is required for the following at least 21 days before commencement of the exhibition:

- Permission to use flammable materials, e.g. straw
- Storage or use of hazardous substances, flammable liquids or gases.
- Open fires or demonstrations using naked flame, gas or fires, welding operations (Not allowed)
- Solid ceilings, double volume or double-storage stands (Not allowed).

Stands other than the Organisers' shell scheme: In the case of custom-built stands, exhibitors must submit detailed plans to the Fire Prevention Branch at least 20 days before the opening of the exhibition. Copies of such certified plans must be sent to the Organisers before the exhibition commences. Failure to do so may result in exhibitors not being allowed to construct their stand.

FIREFIGHTING EQUIPMENT

Exhibitors should familiarise themselves with the location and use of all available firefighting equipment.

No person shall remove, obstruct or damage any of the firefighting equipment provided.

The Fire Department may, depending on the circumstances of each case, require an exhibitor to provide additional fire extinguishers if deemed necessary by the Inspecting Officer. It is an offence to use fire hoses to supply water to exhibition stands, etc.

SAFETY PRECAUTIONS

Each exhibitor should ensure that there are no potential fire hazards on the stand. All appliances, water, lights and equipment should be switched off before leaving your stand at the close of exhibition each day.

EMERGENCY ESCAPE ROUTES AND EXITS

No emergency escape routes and exits are to be obstructed prior to or during the exhibition. No structure or display shall be so placed or constructed as to impede the ordinary movement of people. Nor shall the existing facilities and signs be so obstructed. No surface irregularities at floor level shall be placed in any exit route.

EMERGENCY PROCEDURES

FIRE

- Upon discovering a fire, close the door to the room where the fire is located and immediately sound the center's fire alarm by breaking the closest break glass unit.
- Call EXT 5252, and give your name, your LOCATION and the location of the fire.
- If the fire is large, very smoky, or rapidly spreading, leave the area immediately. The alarm may not sound continuously. If the alarm stops, continue the evacuation. Warn others who may enter the building after the alarm stops.
- WALK, DO NOT RUN, to the nearest fire exit stairway if not on ground level.
- When the fire alarm sounds, do not use any lifts or escalators. They may become inoperable and a trap! Give assistance to disabled persons using the stairs.
- Evacuate to the applicable indicated assembly points. DO NOT RETURN to the building until instructed to do so by the security or fire personnel.
- Notify either the CTICC security or fire personnel on the scene if you suspect that someone may be trapped inside the building.
- Note: Detailed procedures for disabled persons are available later in this Evacuation Plan.

SAFETY PRECAUTIONS BEFORE USING A FIRE EXTINGUISHER

Sabotage and normal wear and tear can cause a fire extinguisher to become a great danger to the user. Before using any extinguisher the following must be done:

- i. Inspect for any damage. (The lid of the extinguisher is unscrewed until it is held in position by only one thread. This lid can blow off and kill the user.)
- ii. If damaged, do not use.
- iii. Ensure that the extinguisher is the correct one for the fire.
- iv. Ensure that the contents are as stated on the label.
- v. When activating the extinguisher kneel next to it with the face turned away.

DO'S AND DON'TS OF FIREFIGHTING

The Do's and Don'ts relating to the general principles that should be adopted when engaging in basic firefighting:

DO'S

- Ensure that back-up assistance is available before tackling a fire.
- Ensure that an escape route is accessible before committing yourself to tackling the fire.

- Follow instructions on the extinguisher's label.
- Break the seal and remove the safety device.
- Check the operation of the unit by briefly activating the control mechanism before approaching the fire.
- Apply the extinguishing medium at the base of the flames and move the nozzle with a rapid side-to-side action.
- Drive the flames away from you.
- For vertical fires start at the base of the flames and move upwards.
- If the fire is outdoors, approach it from the windward side.
- When approaching the fire adopt a crouching attitude that provides some protection against heat and smoke.
- Be alert to any changes in the fire pattern.
- When tackling a fire that involves electrical equipment isolate the power as soon as possible to prevent re-ignition.
- Ensure that the fire has been completely extinguished and that no sparks remain.

DON'TS

- Do not put yourself at risk. If the fire is too big or starts to spread, evacuate the area immediately.
- Never tilt or invert any extinguisher while operating it unless it is the type that you turn over.
- When extinguishing the fire that arose from a flammable spillage, never walk on the spillage area in case the flames flash back.
- When tackling flammable liquid fires, use a controllable discharge type of extinguisher medium until the fire is completely extinguished.
- When the fire has been extinguished, back off slowly and never turn your back on it.

ELEMENTARY WAYS TO STARVE THE FIRE

- On discovering the fire, you must do everything possible to starve it by removing the oxygen and/or combustible material.
- Close doors and windows.
- 'Blanket' (smother) a small fire with a bag.
- Throw sand on the fire.
- Hose down hot walls and floors or the base of the fire itself.
- Saturate with appropriate extinguishing medium.
- Drag combustible articles away or cool them with water.
- Switch off all electricity mains.
- Keep bystanders away.
- Clear gates and paths for the arrival of the fire brigade.
- When fire brigade arrives indicate location of fire.
- Give all possible assistance and protect the property.

SERIOUS INJURY

- Do not move a seriously injured person unless it is a life-threatening situation.
- Find the closest phone and call EXT 5252.
- Give your name, LOCATION and the telephone extension you are calling from.
- Give as much information as possible regarding the nature of the injury or illness, and whether or not the patient is conscious.
- Emergency Medical Services will respond to the scene.
- Return to the patient.
- If you are a TRAINED FIRST AIDER, provide necessary first aid until Emergency Medical Services arrive.
- Remain with the patient until Emergency Medical Services arrive.
- Check for any Medic Alert bracelets or pendants with an inscription indicating a medical condition, (i.e., diabetes, epilepsy, allergies, etc.).
- If found, bring this to the attention of the responding emergency medical officer.
- Report all emergencies to the Security Department immediately on EXT 5252.

BOMB THREAT

- Bomb threats usually occur by telephone.
- The person receiving a bomb threat should remain as calm as possible and attempt to obtain as much information as possible from the caller. Write down the exact words used in the threat while they are still fresh in your memory.
- Call EXT 5252 and give your name, LOCATION, and telephone extension. Inform the security department of the situation, including any information you may have as to the location of the bomb, the time it is set to detonate, and the time you received the call.
- The Security Department and Fire Marshals will be responsible for building evacuation once the instruction to do so is received from the Emergency Management Team.
- If you should spot a suspicious object, package, etc. report it to the Security Department, but under no circumstances should you touch it, tamper with it, or move it in any way. Call EXT 5252.
- If instructed to evacuate, move a safe distance away (500 metres) from the building or behind barriers as directed. If severe weather conditions exist, you may move to another building a safe distance away.
- DO NOT re-enter the building until it is declared safe to do so.

ARMED ROBBERY

- Do not attempt to stop the robbers if you are unarmed.
- Never stop armed robbers unless you are absolutely confident of succeeding.
- Think carefully and exercise caution regarding the lives of employees and customers.
- Collect relevant information about the transgressors:
 - i. Full personal description
 - ii. Distinguishing features
 - iii. Firearms/weapons used
 - iv. Direction of departure
 - v. Description of getaway car
- Report this information to Control Room immediately.

- Attend to injured persons.
- Keep curious people away.
- The safety of the people on the premises is the Security Officials' top priority.

EVACUATION

PARTIAL EVACUATION

- Partial evacuation is the withdrawal of a group of people from a specific area that might pose a threat to human lives or be a source of injury to persons.
- The advantage of partial evacuation is that the risk of injuries is minimised and fewer people are left moving about.
- Some employees are still available to conduct a search of the area and to assist.
- Essential services can continue.

GENERAL EVACUATION

- General evacuation is the total withdrawal of people from the premises/building to an assembly area situated well away from where the threat might endanger them.
- People can be injured in the rush to evacuate (particularly if they are not well-trained).
- Employees are not available to help search the premises after the evacuation.
- All services must be suspended, including the essential services.

EVACUATION PROCEDURE

- Stop work.
- Lock away all valuables.
- Pack papers away if possible.
- Switch off all electrical appliances.
- Take your handbag with you and ask visitors to accompany you.
- Escort physically challenged (disabled) persons to the nearest fireman's lift that is appropriate for their departure.
- Evacuate via the shortest routes.
- Do not run.
- Always keep left.
- Do not use the lifts, only for physically challenged persons and emergency personnel.
- Congregate at the assembly area.
- Wait for further instructions.

The CTICC's Emergency Management Team will be in charge of all the communications and instructions in the event of an emergency, and will decide whether the fire brigade and other civil emergency services must be summoned. They will decide whether evacuation of staff

is necessary and, if so, the extent thereof. Incidents involving injured and disabled persons should be reported to the MediClinic who will arrange for their evacuation from the premises. The fire department will take the decision as to whether the building may be re-occupied.

SECURITY DEPLOYMENT

In the event of an evacuation, security staff at the entrances will remain at their posts to assist with the evacuation. Staff will ensure that the doors are unobstructed, unlocked, opened and that there is a safe passage for people moving out of the building.

No person will be allowed to enter or re-enter the building during the evacuation. Only emergency staff will be permitted to enter via these access control points.

ERT (EMERGENCY RESPONSE TEAM) UNIT

The CTICC's ERT Members will be responsible to ensure that the areas allocated to them are evacuated and to assist with any emergency situation that may occur during such evacuation.

THIRD PARTY SECURITY

Any third party security hired in by a client will be responsible for the evacuation and securing of the area under their control. The third party security company will however report to and receive instructions in this regard from the CTICC security who will be acting under instruction from the Emergency Management Team.

A two-way radio will be made available to the third party security company in order to facilitate communication with the CTICC Control Room. This radio must be signed out from the Control Room upon arrival on site and must at all times be in the possession of the senior officer on site.

The management of any third party security deployed on site will be responsible for ensuring that all their staff is conversant with the contents of this document. Any possible emergency condition must be reported to the CTICC Control Room who will escalate it to the Emergency Management Team who will make the decision as to what action should be taken.

NATURAL DISASTER

- Assess the situation.
- Determine the extent of the damage and possible imminent dangers.
- Relay the situation report to the Control Room.

EMERGENCY MANAGEMENT TEAM

EXT 5252

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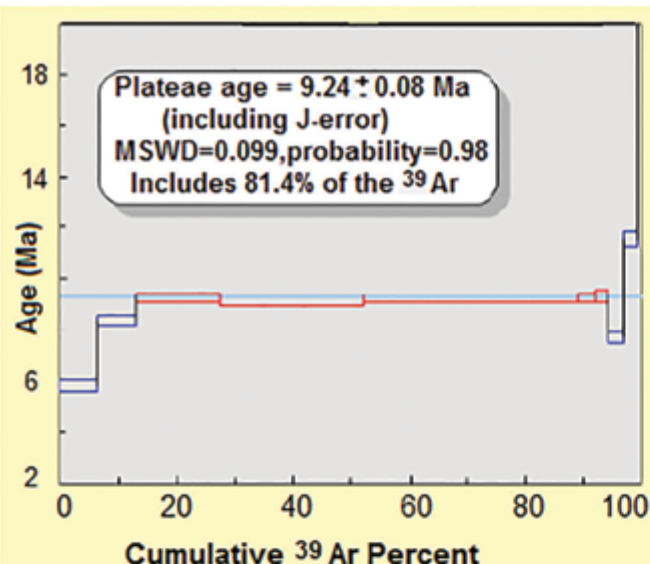
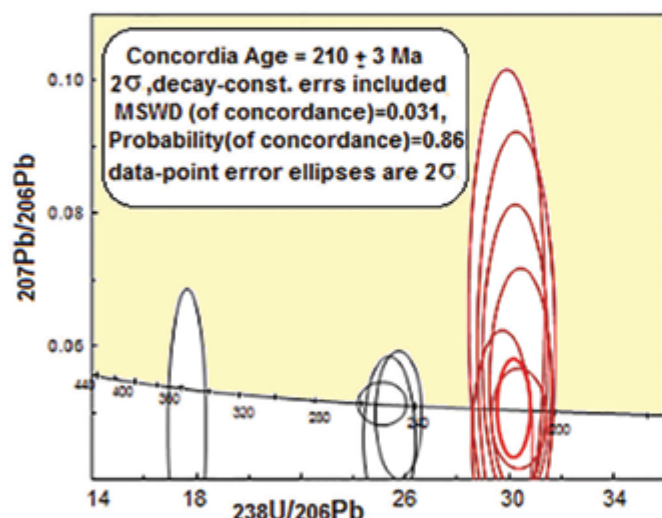
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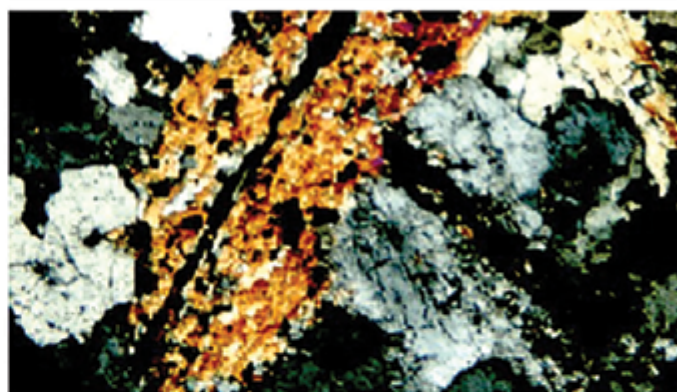
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K-Ar
Ar-Ar (MC - NGMS)
U-Th-He
Sm-Nd (TIMS)
Rb-Sr (TIMS)
Re-Os (TIMS)
C14

Isotopic analysis

Sm-Nd (TIMS)
Rb-Sr (TIMS)
Pb (TIMS)
Sr (TIMS)
Nd (TIMS)
Stable Isotopes: H, C, O, N, S

Additional services

Petrography study
XRD
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Mineral separation

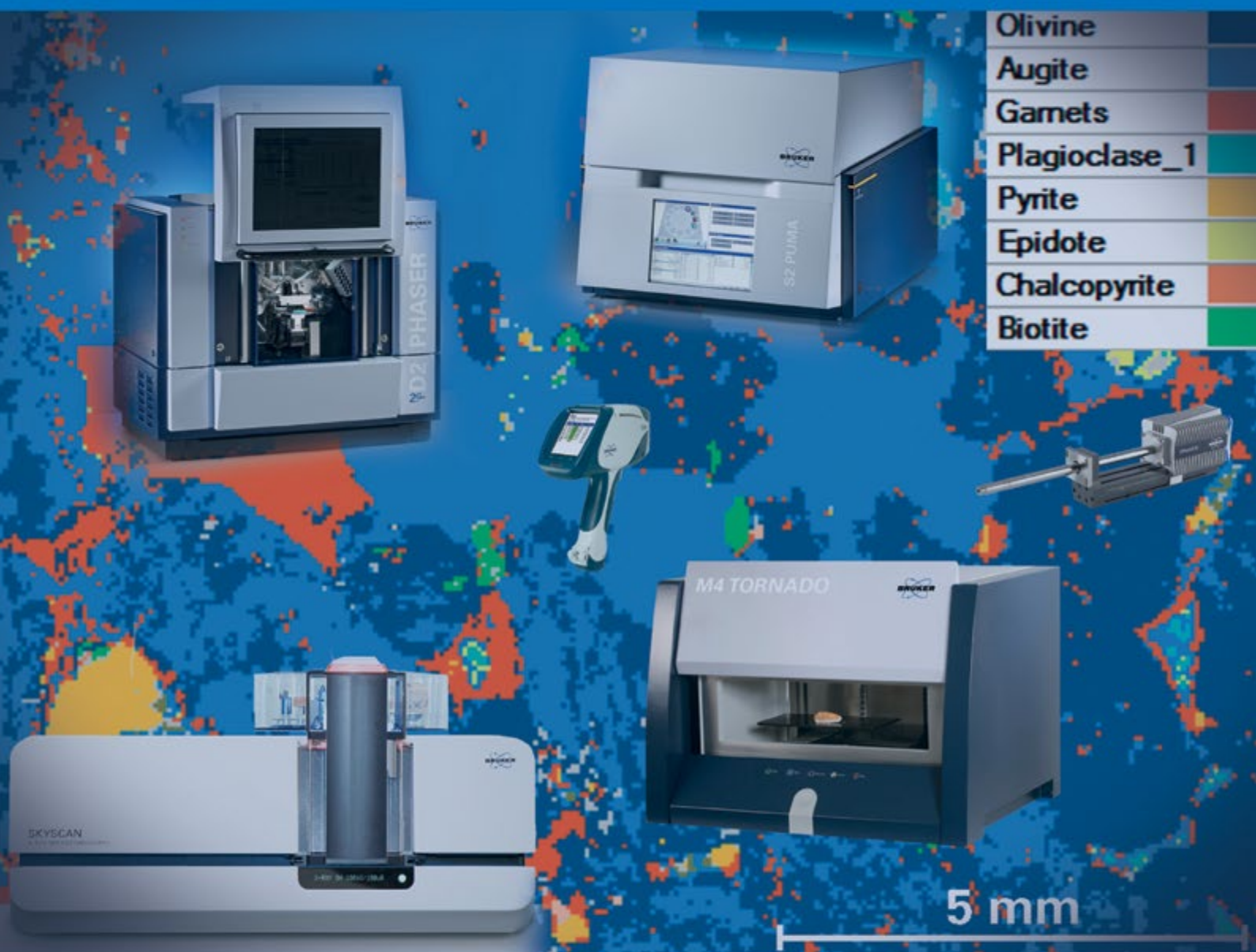


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