THIRD CIRCULAR

AUGUST 2019

36TH INTERNATIONAL GEOLOGICAL CONGRESS

THE INDIAN SUBCONTINENT INVITES YOU TO THE 36TH IGC

GEOSCIENCES: THE BASIC SCIENCE FOR A SUSTAINABLE FUTURE

2 - 8 MARCH 2020

INDIA EXPO CENTRE

DELHI, INDIA

GEOSCIENCES
THE BASIC SCIENCE
FOR A SUSTAINABLE FUTURE

36th International Geological Congress

Major Partners

Ministry of Mines

Ministry of
Earth Sciences

Indian National
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Sciences of Sri Lanka

Geological Survey of India
Nodal Organization for organizing the 36th IGC

Message from the President and Secretary General, IUGS

It is our pleasure to place before you the Third Circular of the 36th International Geological Congress. It contains important information on the Science Program, the Geohost Support Program, the Field Trips, the GeoExpo, accommodation and visa facilities, among others.

The 36th IGC has launched a comprehensive Geohost Program that comprises 1000 scholarships each for registration, travel and local hospitality. An assortment of 71 field trips covering the geological marvels of the Indian subcontinent is detailed in the Circular. The Circular also presents important information on accommodation available around the Congress venue, and the GeoExpo to be held alongside the Congress.

The Congress Program has been expanded to include 13 Plenary Talks and a Public Lecture by geoscientists of international repute. The Congress timetable has been updated. An announcement on workshops and short courses has been made on the website inviting Expressions of Interest from resource persons. Submission of proposals for Business Meetings is also open now.

The 36th IGC has taken a considered decision to keep the registration fee low to encourage the participation of geoscientists from all age and economy groups. We wholeheartedly welcome the step. The full spectrum of the Registration categories along with their rates are published herein as well as on the website.

The 36th IGC looks poised and promising. On behalf of the IUGS, we take pleasure in inviting all geoscientists, academicians, young researchers, business delegates, students and representatives of the industries related to the geoscience sector from all over the world to the 36th International Geological Congress being held in Delhi, India during 2-8 March 2020.

Look forward to seeing you in India!

Qiuming CHENG
President, IUGS

Stanley C. FINNEY
Secretary General, IUGS

Message from the President, Co-President and Secretary General, 36th IGC

With profound pleasure, we present to you the Third Circular of the 36th International Geological Congress. We are at a critical juncture today. The Congress is barely six months away, and we are deluged with queries from every nook and corner of the globe seeking updates on the various aspects of the event. It is this enthusiasm that inspires us to double our efforts in every single department of the organization of the Congress.

This Circular comes with a host of information that the delegates have been looking for. The Science Program, the Field Trip Program, the Geohost Support Program, the GeoExpo, the accommodation facilities, visa etc. are detailed in it.

As committed during our bidding at the 34th IGC, Brisbane, 2012, we have launched our Geohost Program with 1000 financial support each for registration, travel and local hospitality. This is unprecedented in the history of IGC and, in fact, of international conferences. It has been designed to enable the participation of meritorious geoscientists who are in their early career or are not financially advantaged. The program is live on our website, and we urge every intending delegate to apply at the earliest.

The much awaited Field Trip program has been launched. We take pleasure in saying that the best of the geological superlatives of the Indian Subcontinent has been chosen for the participants to truly cherish the memories of their trips. The participants have a wide choice of trips that will take them to Bangladesh, Nepal and Sri Lanka besides India, of course.

Our GeoExpo registration is now open. It offers a mix of raw and shell spaces. A brochure detailing the GeoExpo is available on our website.

In the past several days, the Science Program has taken significant strides. Theme 45 has been expanded to include symposia proposed by diverse international scientific fora. We have also expanded the list of Plenary Talks.

It is our delight to announce that all registrants of the Congress will be taken on a complementary trip to the historic Taj Mahal, one of the Seven Wonders of the world.

The excitement of unfolding the grand scientific spectacle in March 2020 is building up! We are giving our best efforts to ensure an unforgettable experience for the delegates. India, the land with a glorious history, rich cultural diversity, scintillating scientific wealth and warm hospitality, beckons you!

Bipul Pathak
Co-President, 36th IGC

V. P. Dimri
President, 36th IGC

Rasik Ravindra
Secretary General, 36th IGC

36TH INTERNATIONAL GEOLOGICAL CONGRESS

THIRD CIRCULAR

Contents

General distribution of this and the subsequent circulars for the 36th IGC will be via email. Please feel free to forward it to others who may be interested. If necessary, limited number of hard copies will be provided on request by email to the Secretary General, 36th IGC: **igc.delhi2020@nic.in**

Postal Address of the Secretariat:
36th IGC Secretariat
C-II, Pushpa Bhawan, Madangir Road
New Delhi-110062
Phone: +91 11 2996-5750; 26057035
www.36igc.org

Important Dates

31 August 2019	:	Super Early Bird Registrations Closed
30 September 2019	:	Application for Professional Development Workshop/Short Courses Closes
30 September 2019	:	Submission of symposia proposal under Theme 45 closes
31 October 2019	:	**Abstract Submissions** is now **FREE** and **deadline** close
31 October 2019	:	GeoHost Support Applications Close
31 October 2019	:	Field Trip Bookings Close
30 November 2019	:	Early Bird Registrations Close
31 December 2019	:	Requests for Business Meetings Close
31 January 2020	:	Standard Congress Registrations Close
01 March 2020	:	Late Registrations Close
02 March 2020	:	Onsite Registrations Commence

Local Organizing Committee/ Core Organizing Committee

V.P.Dimri	President
Bipul Pathak DG, Geological Survey of India (Ex-Officio)	Co-President
Rasik Ravindra	Secretary General
TalatAhmad P.P.Chakraborty	Chair, Science Program Committee Co-Chair, Science Program Committee
Somnath Dasgupta and N.R.Ramesh	Co-Chairs, Field Trip Program Committee
Fareeduddin	Chair, Legacy Program Committee
R.Shankar	Chair, Geohost Support Program Committee
AL.Ramanathan	Chair, Volunteer Program Committee
M.ChandraDas Dy.DG,Geological Survey of India (Ex-Officio)	Chair, Finance Committee
Representative of Ministry of External Affairs Representative of Ministry of Home Affairs	Members
D.M. Banerjee	Representative of Indian National Science Academy
S.N.Bhagat	Treasurer
S.P. Shukla	Administration & Co-Convener, Geohost Support Program
Saibal Ghosh	Convener, Science Program
Snigdha Ghatak	Convener, Field Trip and Geohost Support Programs, Inter-Ministerial Liaising
Debasish Rout	Convener, Legacy and Sponsorship Programs
H.S.Mandal	Convener, Volunteer Program and Co-convener, Science Program
Tanvi Arora	YES Representative

Recent Developments

An MoU was signed on 21 May 2019 at New Delhi among Prof. Qiuming Cheng, President, 36th IGC; Prof. Stanley C. Finney, Secretary General, IUGS and Prof. Jin-Yong Lee, Editor, Episodes, Geological Society of South Korea for printing the Special Volume of Episodes to be released during the Congress.

Congress Registration Fees

(US $)

Type of Registration	Delegate Registration	Student Delegate	Young Earth Scientist (yes) delegate	Day Registration	Opening & Closing Ceremony day Registration	Senior Citizens (above 65 yrs)	Accompanying person's Registration	Welcome Reception (Guest Ticket)
Super Early Bird (1 May-31 August 2019)	650	325	N/A	N/A	N/A	450	N/A	40
Early Bird (1 sep-30 Nov)	750	340	575	425	150	500	120	40
Standard (1Dec 2019-31 Jan 2020)	850	350	600	450	175	550	135	40
Late (1 Feb-1 March 2020)	950	400	625	475	200	600	150	40
Onsite	1000	425	650	500	225	650	150	40

N/A: Not Applicable

Congress Inclusions

- Congress materials including handbook and proceedings and access to Congress sessions.
- Trip to Taj Mahal, Agra (on request by the full delegates on the website).
- Ticket to the Congress Welcome Reception. Extra tickets can be purchased at US$ 40 per guest.
- Lunch and refreshments on each day as per the Congress program
- Accompanying Person registration includes name badge, access to spouse lounge with tea, coffee and water, access to opening & closing ceremony, access to social events, walking tour/half day shopping tour.
- Registration does not include Congress dinner; it is optional. The cost will be announced later.

Definitions

- A 'student' is a person enrolled in a recognized tertiary course for full-time study and who is not engaged in full-time employment. A copy of the current student photo-ID card and a supporting letter from the Head of Institute or Course Supervisor confirming the course and full-time student status must be provided before the Congress.

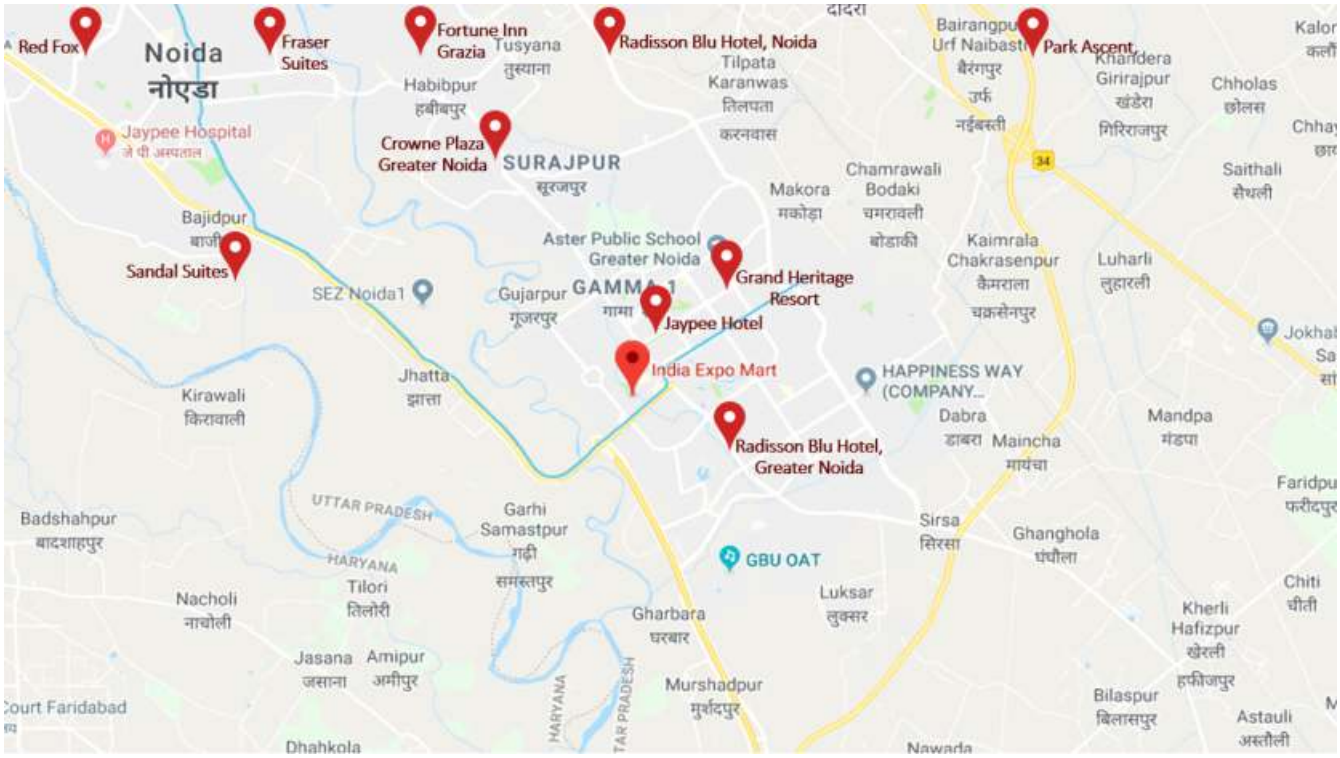
- A 'Young Earth Scientist' is under the age of 35 years and a registered member of the Young Earth Scientists (YES) network. YES membership number must be provided with registration.

- An 'Accompanying Person" is a partner and/ or family member accompanying the registered delegate.

Accommodation around the Venue

Delhi has a number of luxury and budget hotels. You can book a hotel of your choice in Delhi and experience the rich history, culture and affability of this ancient city. Hotels in Delhi have been categorized under various headings like five star deluxe hotels, five star hotels, four star hotels, three star hotels, two star hotels and budget hotels.

Map of the Hotels



List of Official Congress Hotels

Hotel : **Crowne Plaza**
Location : **Greater Noida**
Catogory : **5 Star**
Room Type : **Standard Suite Room**
Distance from Venue : **8 Kms**
Distance From IGI Airport : **50 Kms**
Distance from New Delhi Railway Station: **35 Kms**
Distance from Central Delhi : **35 Kms**

Hotel : **Sandal suites lemon tree**
Location : **Greater Noida**
Catogory : **5 Star**
Room Type : **Deluxe Suite Room and Standard Suite Room**
Distance from Venue : **17 Kms**
Distance From IGI Airport : **37 Kms**
Distance from New Delhi Railway Station: **28 Kms**
Distance from Central Delhi : **28 Kms**

Hotel : **Jaypee Greens Golf Course Resorts & Spa**
Location : **Greater Noida**
Catogory : **5 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **3.5 Kms**
Distance From IGI Airport : **57 Kms**
Distance from New Delhi Railway Station: **44 Kms**
Distance from Central Delhi : **44 Kms**

Hotel : **Grand Heritage**
Location : **Greater Noida**
Catogory : **4 Star**
Room Type : **Standard Suite Room**
Distance from Venue : **5 Kms**
Distance From IGI Airport : **52 Kms**
Distance from New Delhi Railway Station : **43 Kms**
Distance from Central Delhi : **43 Kms**

Hotel : **Red Fox**
Location : **Mayur Vihar, Noida**
Catogory : **3 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **32 Kms**
Distance From IGI Airport : **36 Kms**
Distance from New Delhi Railway Station: **21 Kms**
Distance from Central Delhi : **20 Kms**

Hotel : **Radisson Blu**
Location : **Greater Noida**
Catogory : **5 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **5 Kms**
Distance From IGI Airport : **53 Kms**
Distance from New Delhi Railway Station: **45 Kms**
Distance from Central Delhi : **45 Kms**

Hotel : **Crowne Plaza**
Location : **Mayur Vihar**
Catogory : **5 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **30 Kms**
Distance From IGI Airport : **30 Kms**
Distance from New Delhi Railway Station: **15 Kms**
Distance from Central Delhi : **15 Kms**

Hotel : **Fraser Suites**
Location : **Noida**
Catogory : **4 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **30 Kms**
Distance From IGI Airport : **30 Kms**
Distance from New Delhi Railway Station: **16 Kms**
Distance from Central Delhi : **15 Kms**

Hotel : **Park Ascent**
Location : **Noida**
Catogory : **4 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **35 Kms**
Distance From IGI Airport : **36 Kms**
Distance from New Delhi Railway Station: **20 Kms**
Distance from Central Delhi : **20 Kms**

Hotel : **Fortune Inn Grazia**
Location : **Noida**
Catogory : **4 Star**
Room Type : **Standard Deluxe Room**
Distance from Venue : **28 Kms**
Distance From IGI Airport : **30 Kms**
Distance from New Delhi Railway Station : **22 Kms**
Distance from Central Delhi : **22 Kms**

GeoHost Support Program

Thanks to the benevolence of the Government of India, the GeoHost Support Program of the 36th IGC is unprecedented, offering support for travel, registration and local hospitality for 1000 delegates!
The 1000 GeoHost full support would be split into:

- 1000 Registration
- 1000 Travel and
- 1000 Local Hospitality.

These will be awarded as either full or partial support.
Applications are invited under the following categories for GeoHost support to attend the 36th IGC at New Delhi.

- **Category A**: Early career geoscientists (Students and Young Researchers) less than 40 years of age as on 31st December, 2019.
- **Category B**: Financially disadvantaged geoscientists (Preferably holding passport of a middle/low-income countries – as per the World Bank database http://datahelpdesk.worldbank.org/knowledgebase/articles/906519).
- **Category C**: Registration fee waiver for IUGS officials, Youth GeoHost Program grantees, Geo-quiz winners, Hutchison Awardees and others.

More details of the terms and conditions are available at *https://www.36igc.org/geohost-program*

The ***Youth GeoHost Program*** enables one meritorious candidate from each of the IUGS-adhering countries to participate and benefit from the 36th IGC. It provides full GeoHost support (travel + registration + local hospitality) to the selected candidates. Selection will be made in consultation with the IUGS-adhering countries.

Geo-quiz Winners (delegates to the 35th IGC who had won at the Geo-quiz held at the 36th IGC pavilion) will be offered free registration.

Hutchison Awardees, selected by IUGS, will be offered free registration to participate in the 36th IGC.

Applications for the GeoHost Support Program

- Details of eligibility criteria are available at *www.36igc.org*. Online applications for availing GeoHost Support can be made following abstract submission. No other form of application, except online, will be considered. **Deadline to apply**: October 15, 2019.
- Non-compliant and/or incomplete applications will not be considered or acknowledged.
- Successful applicants will be notified by 15th November 2019.

Workshop/ Training Program for GeoHost awardees:

As a measure of capacity building and to encourage early career researchers and students (Category A GeoHost awardees), about 10 workshops (two per day) related to the Congress theme, ***Geosciences: The Basic Science for Sustainable Future***, are being scheduled. GeoHost awardees under Category B or geoscientists of international repute (from international scientific bodies) will be the resource persons for the workshops.
Participation at the workshops is optional. However, while awarding GeoHost grants *preference would be given to applicants willing to participate in the workshops*.
Do reach us at *geohost@36igc.org* if you have queries.

Additional support offered to the delegates by other organizations/ institutes/ associations etc

The GeoHost support is further enhanced with kind offers of support from the following:

The Hutchison Award of IUGS

Young Geoscientists can apply for the Hutchison Award through the IUGS Hutchison Young Scientists Foundation, which promotes the professional growth of deserving, meritorious young scientists from around the world by supporting their participation in important IUGS-sponsored conferences.

With funds from the Hutchison Foundation, the IUGS will support 15 young scientists to participate in the 36th IGC. More details are available at *http://iugs.org/index.php?page=hutchison-foundation.*

The CGI Award for Young Earth Scientists at the 36th IGC

CGI's mission is to foster the interoperability and exchange of geoscience information by active community leadership, collaboration, education and the development and promotion of geoscience information standards and best practice.

CGI sponsors an award to assist early career scientists to present their work at conferences such as the IGC on the use of CGI standards in data delivery and analysis. The award provides up to US$ 2000 (for travel and accommodation) to participate in the 36th IGC, Delhi. Registration fee is covered by the Young Earth Scientists (YES) Network. More details are available at http://www.cgi-iugs.org/

European Federation of Geologists (EFG)

EFG is a professional organisation that aims to contribute to a safer and more sustainable use of the natural environment, to protect and inform the public and to promote a more responsible exploitation of natural resources.

EFG will provide financial support to the young geologist from Europe who are the members of EFG family. Details of the support offered are available at *www.eurogeologists.eu.*

European Mineralogical Union (EMU)

EMU is an international scientific organization. Its objective is to further European cooperation in the mineralogical sciences (mineralogy, petrology, and geochemistry and their applications).

The European Mineralogical Union (EMU) invites applications for financial support to attend the 36th International Geological Congress (IGC) in Delhi, India, in 2020. Two grants, 500 Euros each, will be awarded to successful applicants who are early-career scientists with European affiliation who are planning to present a contribution with significant mineralogical component at the 36th IGC. More details on the support offered are available at *www.eurominunion.org*

International Association of Geomorphologist *(IAG/AIG)*

The International Association of Geomorphologists (IAG) is a scientific, non-governmental and non-profit organization, whose main objectives are development and promotion of geomorphology as a science through international co-operation and dissemination of the knowledge of geomorphology. IAG also supports the training of Young Geomorphologists from all around the world, especially those from economically less-developed countries.

IAG is organizing sessions during the 36th IGC. Support will be provided to the delegates. More details are available at *www.geomorph.org/iag-auspices-support*

International Geoscience Education Organisation (IGEO)

IGEO is a non-profit organization whose motto is "promoting geoscience education worldwide".
IGEO would be providing a grant of US$ 1000 to one participant from a DEVELOPING COUNTRY who will make a presentation in Symposium 1.1 on “Geoscience Education” at the 36th IGC, India. Interested scientists could contact the Secretary, IGEO (akwarrier@gmail.com). Application deadline: October 15, 2019.

Accompanying Persons’ Program

The **Accompanying Persons’ Program** is a special facility available only to partners and/or family members of a registered delegate.

The program includes the following:

1. Access to spouse lounge with tea, coffee and water
2. Access to opening & closing ceremony
3. Access to social events
4. Walking tour/half day shopping tour
5. Day tours and trip to Taj Mahal (to be purchased)

Details of the program will be available on the website shortly.

Message from the Chairs, Science Program Committee

With great pleasure we present before you the Science Program of the 36th International Geological Congress.

Sustainability seems to be the key word in every sphere of life and this includes science. We, as geoscientists, firmly believe that geosciences can contribute substantially towards achievement of a sustainable future. While building the framework of the Science Program, this was the prime thought in our minds. We also knew that an inclusive participation is paramount in order to achieve the global goal of sustainability.

As a small step towards making our science program inclusive and representative, we have attempted incorporation of all possible themes of geoscience. Now, we have 45 themes and 287 symposia under our program, and further, theme 45 is open for participation by diverse organizations of the world till 30 September 2019. Secondly, we have taken a considered decision to make the abstract submission free till mid-September. From the 16th September till 15th October, the submissions will entail a nominal fee of US$ 20.

We sincerely believe that our scientific program will usher an opportunity for cooperative and multidisciplinary scientific research to address contemporary and challenging issues to ensure sustainable development.

We invite you to be a part of this scientific journey!

Talat Ahmad
Chair

Partha Pratim Chakraborty
Co-Chair

Science Program Committee

Talat Ahmad, Vice Chancellor, University of Kashmir, Chair
Partha Pratim Chakraborty, Delhi University, Co-Chair
Dinesh Gupta, Director General, Geological Survey of India (Retd.), Member
Rahul Mohan, National Centre for Polar and Ocean Research, Member
D. S. Ramesh, Indian Institute of Geomagnetism, Member
Vandana Prasad, Birbal Sahni Institute of Palaeobotany, Member
N. Chalapathi Rao, Banaras Hindu University, Member
T. Elango, Anna University, Member
K. S. Krishna, National Institute of Oceanography, Member
Pradeep Srivastava, Wadia Institute of Himalayan Geology, Member
Ajay Manglik, National Geophysical Research Institute, Member
Parampreet Kaur, Punjab University, Member
Prakash Chauhan, IIRS, Dehradun, Member
B. C. Sarkar, Indian Institute of Technology (ISM), Member
H. S. Pandalai, Indian Institute of Technology, Mumbai, Member
Somnath Dasgupta, Indian Institute of Science Education and Research, Co-Chair, Field Trip Committee, Member (Ex-officio)
N. R. Ramesh, Geological Survey of India (Retired), Co-Chair, Field Trip Committee, Member (Ex-officio)
Saibal Ghosh, Geological Survey of India, Member, Convener
H. S. Mandal, Ministry of Earth Sciences, Member, Co-Convener

Time	March 02	March 03	March 04	March 05	March 06	March 07	March 08
09:00 – 10:30	Registration	IUGS Award Argand Lecture (09:00- 09:30) PLENARY 2 (09:30-10:30)	Session D (D1-D40)	Session H (H1-H40)	Session L (L1-L40)	Session P (P1-P40)	Session T (T1-T40)
10:30 – 11:00	Break	POSTER Break	POSTER Break	POSTER Break	POSTER Break	POSTER Break	POSTER Break
11:00 – 12:00	Registration	POSTER Session A (A1-A40)	POSTER Session E (E1-E40)	POSTER Session I (I1-I40)	POSTER Session M (M1-M40)	POSTER Session Q (Q1-Q40)	POSTER Session U (U1-U40)
12:00-13:00							PLENARY 13
13:00-14:00	Break	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
14:00-15:00	Inaugural Ceremony	PLENARY 3	PLENARY 5	PLENARY 7	PLENARY 9	PLENARY 11	PUBLIC LECTURE
15:00-16:30		POSTER Session B (B1-B40)	POSTER Session F (F1-F40)	POSTER Session J (J1-J40)	POSTER Session N (N1-N40)	POSTER Session R (R1-R40)	Closing Ceremony
16:30-18:00	PLENARY 1 (IGC- Leibniz Lecture)	POSTER Session C (C1-C40)	POSTER Session G (G1-G40)	POSTER Session K (K1-K40)	POSTER Session O (O1-O40)	POSTER Session S (S1-S40)	
18:00-19:00	Break	PLENARY 4	PLENARY 6	PLENARY 8	PLENARY 10	PLENARY 12	
19:00 onward	Icebreaker	Business Meetings/Workshop			Congress Dinner	Business Meetings/ Workshop	

Please Note

- Onsite Registration will open at 14.30 hrs. on 01.03.2020 at the venue, and will close at 14.00 hrs on 07.03.2020.
- Business Meetings and Workshops/ Short Courses will be scheduled normally during evening hours after 1900 hrs; however, on special cases, the same may be scheduled during daytime too.

Each oral presentation (plus the ensuing discussion) in Sessions A-U will be for 15 minutes. Each keynote address (plus discussion) will be for 30 minutes. Plenary Talks and Public Lectures (including discussion) will be of one-hour duration each, and are kept with sufficient time interval to ensure maximum attendance. E-posters will be displayed at a prominent place in the Congress venue, adjacent to the Technical Session halls. They will have pre-scheduled timings and batches; the batches will be shuffled after 2-3 hours.

Plenary Talks/ Public Lectures

There are 13 Plenary Talks and one Public lecture by eminent geoscientists of the world. The names of the speakers and the titles of their talks are given below:

Prof. Manfred R. Strecker
(IGC-Leibniz Lecture)

Tectonics, topography and climate of the southern Central Andes

Prof. Herbert E. Huppert

Defending against lava flows: theory, experiment and field confirmation

Prof. Michael Brown

Secular variation of metamorphism and the evolution of plate tectonics

Prof Bruce Edward Hobbs

The Dynamics of Tectonic, Metamorphic and Hydrothermal Systems

Dr. Anny Cazenave

Global changes in the Earth System and Space Observations

Prof. Kip Hodges

The Evolving Geodynamics of the Himalayan Orogenic Wedge

Prof. Qiuming Cheng

Mathematical Geosciences on Digital Earth and Deep Learning for Understanding the Nonlinear Earth Systems

Dr. Mihir Shah

Challenges of Sustainable Groundwater Management in India

Prof. Michael James Bickle

Impact of the Himalayan-Tibetan orogen on global geochemical cycles and climate

Prof. Mike Searle

Geological Evolution of the Western Himalaya

Dr. Sergei Pisarevsky

Siberia, India and Baltica in Precambrian supercontinents

Prof. Harsh K Gupta

Developing Earthquake and Tsunami Resilient Society

Dr. S. K. Acharyya

Geology and Tectonic Setting of Gondwana Basin Architecture in the Indian Shield

Prof. K. S. Valdiya (Public Lecture)

Tectonically active parts of the restless Indian subcontinent

Science Symposia

The Science Program is presented over following pages. It is also available on the 36th IGC website (https://www.36igc.org/science-program), where a summary of each symposium can be accessed with additional details.

The science symposia have been the basis for the call for abstracts and inviting speakers. The Science Program includes 287 Symposia under themes 1- 45.

Theme 45 is a theme dedicated to symposia from various national and international scientific organizations. As of today, it has 20 symposia. Its speakers will be invited by the conveners of the proposing organisations/ associations. Last date of submission of proposals for Theme 45 is 30 September 2019.

All Presenting Authors, irrespective of the themes, need to submit their abstracts online and register as full Congress delegates, preferably by the end of Standard Registration deadline (31 January 2020). In case the Presenting Authors do not make congress registration by the above deadline, their abstracts will not be included in the Science Program and the abstract proceeding.

It will be our effort to have both oral and poster presentations in all symposia. However, the final call on this will depend on the number of abstracts accepted under each symposium. Under themes 1-44, individuals will be permitted to give only one oral presentation, but they may co-author multiple oral presentations and give multiple poster presentations. Presenters under Theme 45, and invited Keynote Speakers may have a second oral presentation.

The official language of the Congress will be English and translation services will not be provided. Any questions or requests for further information should be addressed to the Communicating Theme Coordinators or Symposium Conveners, with a copy to the Convener, Science Program Committee (saibalg@36igc.org).

Video recording of presentations will not be permitted at the 36th IGC.

Coordinators: *R. Shankar rshankargeo@gmail.com (India),*
Anish K. Warrier akwarrier@gmail.com (India),
Chris King chrisjhking36@gmail.com (UK)

Symposia

1.1 Geoscience Education

Roberto Greco greco@ige.unicamp.br (Brazil), Chris King (UK)

1.2 Geoscience Communication and Outreach

Iain Stewart istewart@plymouth.ac.uk (UK), Kirsten v. Elverfeldt
(Austria), Eduardo de Mulder (The Netherlands), Courtney Jermyn (The Netherlands)

1.3 Geodiversity, Geoheritage, and Geoconservation

José Brilha jbrilha@dct.uminho.pt (Portugal), Benjamin van Wyk de Vries (France), Denise Gorfinkiel (Uruguay), Károly Németh (New Zealand), Kyung-Sik Woo (S. Korea), Nickolas Zouros (Greece), Pushpendra Singh Ranawat (India)

1.4 Natural Stones and Architectural Heritage

Fareeduddin fareedromani@gmail.com (India), Gurmeet Kaur (India), Dolores Periera (Spain)

1.5 Geosciences, Art and Heritage

José Sellés-Martínez pepe@gl.fcen.uba.ar (Argentina), Tom Heldal (Norway), Mónica Álvarez del Buergo Ballester (Spain)

1.6 The History of Geology and the Dissemination of Geological Knowledge

Barry Cooper barry.cooper@unisa.edu.au (Australia), Marianne Klemun (Austria)

1.7 Geoethics: Ethical, Social and Cultural Aspects in Geosciences

Silvia Peppoloni silvia.peppoloni@ingv.it (Italy), Nic Bilham (UK), Peter T. Bobrowsky (Canada), Martin Bohle (Belgium), Vincent S. Cronin (USA), Giuseppe Di Capua (Italy)

1.8 Forensic Geology

Laurance Donnelly geologist@hotmail.co.uk (UK), Biplob Chatterjee (India)

1.9 Role of Medical Geology to Protect Human Health from Toxic and other Harmful Elements in the Environment (Proposed by AGID and SEGMITE)

Viqar Husain prof.viqarhusain@yahoo.com (Pakistan), Zafar Fatimi (Pakistan), S.D. Limaye (India)

1.10 Geoparks, Geoheritage & Geo-Tourism in Low-Income Countries (Proposed by AGID)

Afia Akhtar afia@agni.com (Bangladesh), Shahina Tariq (Pakistan)

1.11 Earth Science and Society

Eduardo de Mulder e.demulder@planet.nl (The Netherlands), Gbenga Okunlola (Nigeria), Marko Komac (Slovenia)

1.12 The roles of UNESCO, IGCP and IUGS in realizing the UN Sustainable Development Goals (Symposium proposed by UNESCO-IGCP-IUGS)

Ozlem Adiyaman Lopes o.adiyaman@unesco.org (France), Edmund Nickless (UK)

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C. Manikyamba cmaningri@gmail.com (India),
Jaana Halla jaana.halla@helsinki.fi (Finland)

Symposia

2.1 Hadean to Archean Earth: Geological, Geochemical, Geochronological, Geophysical, and Numerical Perspectives

Martin Whitehouse martin.whitehouse@nrm.se (Sweden), Kristoffer Szilas (Denmark)

2.2 Archaean Biosphere and Ecosystem

Mukund Sharma mukund_sharma@bsip.res.in (India), Robert Riding (USA)

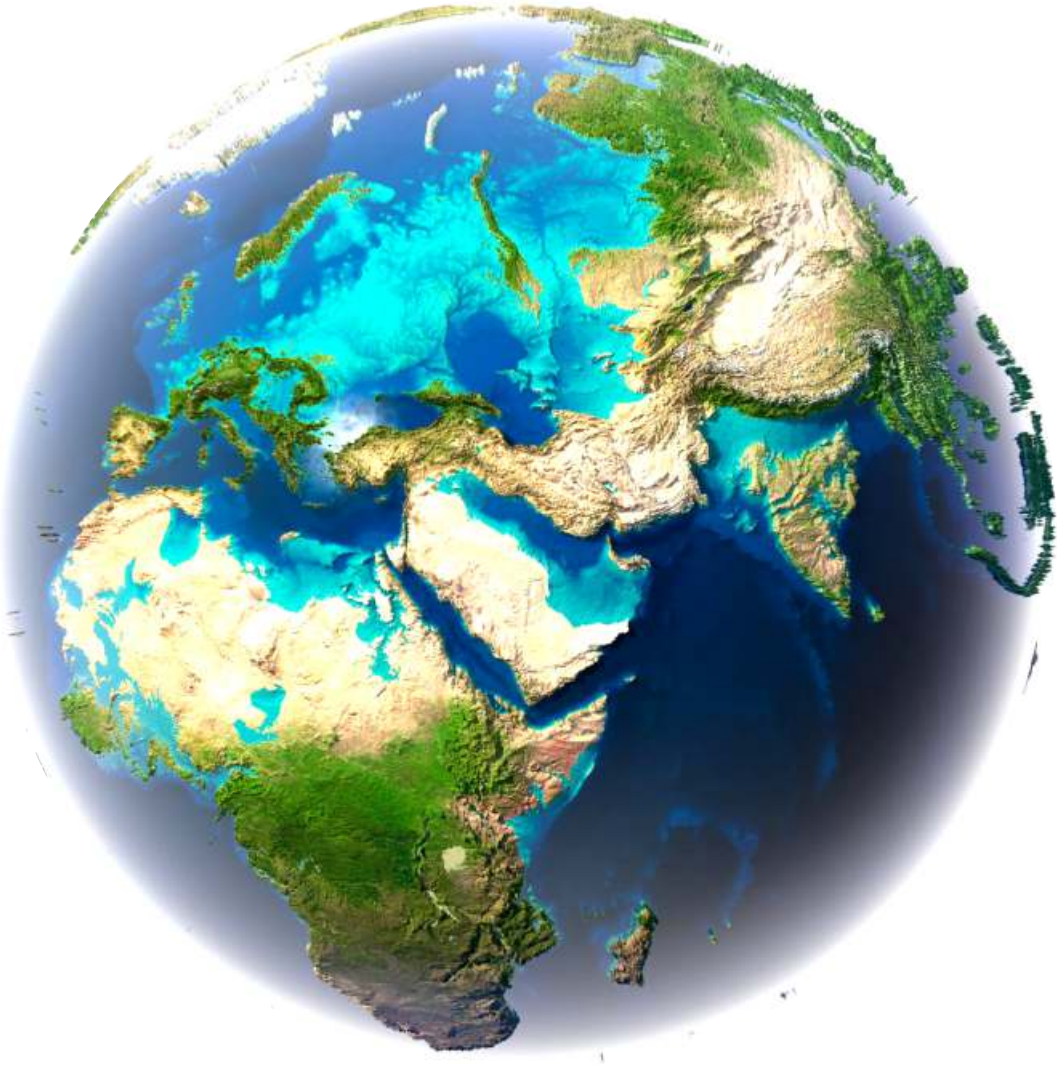
2.3 Origin and Evolution of the Crust-Mantle Reservoirs During The Hadean To Archean

Rajneesh Bhutani rbhutani@gmail.com (India), J S Ray (India)

Coordinators: *Partha Pratim Chakraborty parthageology@gmail.com (India),*
V. Ravikant ravikant.vadlamani@gmail.com (India),
Abhijit Basu basu@indiana.edu (USA)

Symposia

3.1 Proterozoic Orogenesis and Supercontinent Formation and Breakup
Elton Luiz Dantas Elton@unb.br (Brazil)
3.2 Proterozoic Orogeny and Sedimentary Basins
Nick MW Roberts nickmwroberts@gmail.com, nirob@bgs.ac.uk (UK)
3.3 Nuances of Sedimentation in Proterozoic Cratonic Basins
Pradip K. Bose jugeopkb@gmail.com (India)
3.4 Proterozoic Ocean; Chemistry and Oxygenation
Partha Pratim Chakraborty parthageology@gmail.com (India)
3.5 Proterozoic Atmosphere and Expressions of Life
Joydip Mukhopadhyay Joydip17@gmail.com (India)
3.6 Proterozoic Geodynamics and Subcontinental Lithosphere (SCLM) Evolution from Geochemical Evolution of Magmatism Over Time
Peng Peng pengpengwj@mail.iggcas.ac.cn (China)



Theme 4 | *Supercontinent Cycles and Geodynamics*

Coordinators: *M. K. Pandit manoj.pandit@gmail.com (India),*
Tapan Pal paltapan62@gmail.com (India),
J. Meert jmeert@ufl.edu (USA)

Symposia

4.1 Supercontinent Amalgamation, Breakup, and the Driving Forces (IGCP 648)

Zheng-Xiang Li z.li@curtin.edu.au (Australia), David Evans (USA), Shijie Zhong (USA), Bruce Eglington (Canada)

4.2 Extremes of Metamorphism During the Supercontinent Cycle

Chris Clark c.clark@curtin.edu.au (Australia)

4.3 Sedimentary Records and Correlation of Supercontinent Crustal Blocks

Wei Wang wwz@cug.cn (China), Christopher Spencer (Autralia)

Theme 5 | *Ancient and Modern Coasts and Continental Margins*

Coordinators: *Subir Sarkar ssarkar@geology.jdvu.ac.in (India),*
B. Nagender Nath nagendernath@yahoo.com (India),
Peter D. Clift pclift@lsu.edu (USA)

Symposia

5.1 Advances in the Extensional Tectonics of Continental Margins
Sascha Brune brune@gfz-potsdam.de (Germany), Marta Péres Gussinyé (Germany), Zhen Sun (China), Gianreto Manatsachal (France), Anne Briais (France)

5.2 Carbonate Sedimentation at Continental Margins
Christian Betzler christian.betzler@uni-hamburg.de (Germany), Gregor P. Eberli (USA), Jody Webster (Australia)

5.3 Environmental Record of Margins – Ancient Records of Continental Conditions
Selvaraj Kandasamy selvaraj@xmu.edu.cn (China), Shouye Yang (China)

5.4 Gas Hydrate Systems on Continental Margins and Associated Geo-Hazards
Pawan Dewangan pdewangan@nio.org (India), Shyam Chand (Norway), Priyank Jaiswal (USA)

5.5 Metals in Coastal Marine Environment: Distribution, Speciation and Bioavailability in Soil, Water, and Sediment
Parthasarathi Chakraborty pchak@nio.org, parthachemistry@gmail.com (India)

5.6 Marine Oxygen Minimum Zones: From Sedimentary Rocks to Modern Oceanographic Record
Aninda Mazumdar maninda@nio.org (India), Wriddhiman Ghosh (India)

5.7 From Continental Shelf to Deep Ocean Basin – Mapping the Oceanic Realm
Kristine Asch Kristine.asch@bgr.de (Germany), Hiroshi Kitazato kitazatohiroshi2@gmail.com (Japan), Alik Ismail-Zadeh (Russia), Kiyoshi Suyehjiro (Japan), A.K. Chaubey (India), V. Yatheesh (India)

Theme 6 | *Critical events, mass extinctions and evolution of biosphere*

Coordinators: *Vandana Prasad prasad.van@gmail.com (India),*
Rajeev Patnaik rajeevpatnaik@gmail.com (India),
Robert A Spicer r.a.spicer@open.ac.uk (UK)

Symposia

6.1 At the Open and the Close: Boundary Events of the Palaeozoic Era
Nigel Hughes nigel.hughes@ucr.edu (USA), Asish R. Basu (USA)

6.2 Deccan Volcanism and its role in Mass Extinction and Paleobiodiversity
Gerta Keller gkeller@princeton.edu (USA), N. Malarkodi (India)

6.3 Cenozoic Paleoclimate and Ecosystem
Robert A Spicer r.a.spicer@open.ac.uk (UK), Torsten Utescher (Germany)

6.4 Evolutionary History, Phylogenetic Studies and Biogeography
Robert Morley bobmorley100@gmail.com (UK), Uma Ramakrishnan (Canada)

Theme 7 | *Geological Timescale and Dynamic Record*

Coordinators: *G. V. R. Prasad guntupalli.vrprasad@gmail.com (India),*
Kishor Kumar kishorsri@gmail.com (India),
Stanley C. Finny Stan.Finney@csulb.edu (USA),
Bilal Haq haq@purdue.edu (Finland)

Symposia

7.1 Recent Headways in Geological Time Scale
S. C. Finney Stan.Finney@csulb.edu (USA)

7.2 Evolution of Palaeozoic Sedimentary Basins in the Tethys Himalaya - Biodiversity, Biozonation & Bioprovinces
Nigel Hughes nigel.hughes@ucr.edu (USA), SK Parcha (India)

7.3 Chronostratigraphy, Geochronology, Depositional Environments and Biotic Turnovers Across Major Mass Extinction Boundary Intervals in Marine and Continental Sections
V. C. Tewari vctewari@cus.ac.in (India)

7.4 Gondwana Sedimentation, Climate and Life
PK Singh prakashbhu@rediffmail.com (India), Saswati Bandyopadhyay (India), AK Singh (India)

7.5 Break-up of Gondwana, Evolution of Indian Ocean and Development of Marginal Marine Basin
DK Pandey dhirendrap@hotmail.com (India)

7.6 Mesozoic Marine Revolutions - Sea Level Changes, Extreme Climates, Mesozoic Bioevents, Biotic Recoveries & Correlation
B Haq haq@purdue.edu (USA)

7.7 India's Northward Flight, Closing of Tethys, Rise of Himalaya, Biological Evolution
V C Thakur thakurvc12@gmail.com (India)

7.8 Paleogene Hyperthermal events—Sedimentologic, Geochemical & Biotic Responses
Vandana Prasad prasad.van@gmail.com (India)

Coordinators: *N. C. Pant pantnc@gmail.com (India),*
Thamban Meloth tmeloth@gmail.com (India),
Martin J. Siegert m.siegert@imperial.ac.uk (UK)

Symposia

8.1 Polar Ice Sheets and Their Interactions with Geosphere, Atmosphere, and Ocean
Kenichi Matsuoka matusoka@npolar.no (Japan), Frank Pattyn (Belgium), Rene Forsberg (Denmark), Fausto Ferraccioli (UK), Thamban Meloth (India)

8.2 Past Polar to Mid-Latitude Climate Variability and Their Teleconnections with the Tropics
Manish Tiwari manish@ncaor.gov.in (India), Alan Haywood (UK), Jochen Knies (Norway), Simon Belt (UK), Yusuke Yokoyama (Japan), Raja Ganeshram (UK)

8.3 Climate Variability from Ice Cores – Evidence from the Three Poles
Liz Thomas lith@bas.ac.uk (UK), Thamban Meloth (India), Paul Vallelonga (Denmark), Mariusz Potocki (USA)

8.4 Southern Ocean – Past Global Linkages
Crosta Xavier xavier.crosta@u-bordeaux.fr (France), Luke Skinner (UK), Rahul Mohan (India)

8.5 Changing Arctic and Its Impact on Ecosystems
K.P. Krishnan kpkrishnan@gmail.com (India), Maarten J.J.E. Loonen (The Netherlands), A. A. Mohamed Hatha (India), Masaki Uchida (Japan)

8.6 Fluctuations of the East Antarctic Ice Sheet During Cenozoic
Carlota Escutia cescutia@ugr.es (Spain), N C Pant (India)

8.7 Exploring Subglacial Antarctica
Martin J Siegert m.siegert@imperial.ac.uk (UK), Dustin Schroeder (USA)

8.8 Rodinia to Gondwana - the PEL and the India Connection
Somnath Dasgupta somnathdasg@gmail.com (India), N C Pant (India)

8.9 Coupled Structural and Thermal Evolution of the Antarctic Lithosphere
Ian W Dalziel ian@ig.utexas.edu (USA), Donald Blankenship (USA), Jamin Greenbaum (USA)

Theme 9 | *Glacial Mass Balance: Approaches and Problems*

Coordinators: *Shakil A Romshoo shakilrom@kashmiruniversity.ac.in (India),*
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Symposia

9.1 Glacier Mass Balance and Dynamics

S.P. Shukla satyashukla63@gmail.com (India), D. P. Dobhal (India)

9.2 Glacial Hydrology and Sediment Transfer

A. L. Ramanathan alr0400@mail.jnu.ac.in (India), Sanjay Jain (India)

9.3 Impact of Climate Change on Glacier Health

Kireet Kumar kireet@gbpihed.nic.in (India), Shakil Ahmad Romshoo (India)

9.4 Remote Sensing of Cryosphere

Anil Kulkarni anilkulkarni@iisc.ac.in (India), Tobias Bolch (UK)

9.5 Glacier Mass Balance Modelling

Ramachandran Shankar shankar@imsc.res.in (India), H.C Nainwal (India)

Theme 10 | *Orogens through time*

Coordinators: *Deepanker Asthana deepanker.asthana@gmail.com(India),*
Anil M. Pophare apophare@gmail.com (India)
Peter Cawood Peter.Cawood@monash.edu (Australia),

Symposia

10.1 Timescales and Tracers: Unpicking Orogenies Through Time
Oliver Nebel Oliver.Nebel@monash.edu (Australia), Nickolas Gardiner (Australia), Tim Johnson (Australia)

10.2 Proterozoic Orogens, Tectonic Geography and the Earth System
Alan Collins alan.collins@adelaide.edu.au (Australia), Grant Cox (Australia), Morgan Blades (Australia)

10.3 Phanerozoic Orogenesis in Asia – The Record of the Tethys Opening and Closing
Guochun Zhao gzhao@hku.hk (Hong Kong), Yunpeng Dong (China); Di-Cheng Zhu (China)

10.4 Secular Change in Magmatism and Metamorphism: The Fingerprints of Orogenesis
Tim Johnson Tim.Johnson@curtin.edu.au (Australia)

10.5 Precambrian Orogenic Processes and the Formation of Continents: Insights from Models and Observations
Paul Tackley paul.tackley@erdw.ethz.ch (Switzerland), Tara Garya (Switzerland)

10.6 The Pre-Mesozoic Record of the India-Asia Collision Zone
Paul Myrow pmyrow@coloradocollege.edu (USA), Nigel Hughes (UK), Mike Searle (UK)

10.7 Intraplate Tectonics and Continental Development: Orogens and Basins
Alan Aitken alan.aitken@uwa.edu.au (Australia), Weronika Gorczyk (Australia), Sandra Occhipinti (Australia), Klaus Gessner (Australia)

10.8 Convergent Margins and Mineralization
Jeremy Richards JRichards2@laurentian.ca (Canada)

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Qasim Jan mqjan@yahoo.com (Pakistan),
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Symposia

11.1 Thermal Evolution of the Himalaya

Somnath Dasgupta somnathdasg@gmail.com (India), Christopher Spencer (Australia)

11.2 The Himalaya - Surface Processes

George Mathew gmathew@iitb.ac.in (India)

11.3 Crustal Deformation of the Himalayas

Vineet Gahalaut vkgahalaut@yahoo.com (India)

11.4 Tectonic Evolution of the Himalaya

Talat Ahmad tahmad001@gmail.com (India), Mike Searle (UK), Rodolfo Carosi (Italy), Peter Cawood (Australia)

11.5 Brittle vs Viscous Deformation in the Himalaya – Field to Experiments

Santanu Bose bose.santanu@gmail.com (India), Rodolpho Carosi (Italy)

11.6 Role of Fluids in Himalayan Tectonics

Sandeep Singh san662005@gmail.com (India), Rebecca A Jamiesson (Canada), Anne-Marie Boullier (France)

11.7 Phanerozoic and Precambrian Ophiolites as Oceanic Tracers of the Assembly & Disassembly of Gondwana

Yildirim Dilek dileky@miamioh.edu (USA), Brian F Windley (UK), D V Subba Rao (India), Reyaz Ahmad Dar (India)

Theme 12 | *Quaternary Environments: Sedimentation and Landform Evolution*

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Rasmus C. Theide rasmus.thiede@ifg.uni-kiel.de (Germany)

Symposia

12.1 Deserts: Past and Present

Deepak M. Maurya dmmaurya@yahoo.com(India), Amal Kar (India)

12.2 Soil-Geomorphology and Landscape Evolution

Pankaj Srivastava pankajps@gmail.com (India), Peter Kühn (Germany)

12.3 Mountain Landscape: Tectonics and Climate Feedbacks

Rasmus C Theide rasmus.thiede@ifg.uni-kiel.de (Germany), Pradeep Srivastava (India), Manfred Strecker (Germany), Bodo Bookhaagen (Germany)

12.4 Glaciers: Past and Present

Aparna Shukla aparna.shukla22@gmail.com (India), Manish Mehta (India), Dirk Scherler (Germany)

12.5 Extreme Hydrological Event -Present and Past

Alpa Sridhar alpasridhar@gmail.com (India), Bruno Wilhem (France), Tao Liu (USA)

Theme 13 | *Imaging Earth's Interior*

Coordinators: *V. M. Tiwari virendram.tiwari@gmail.com (India),*
Ajay Manglik amngri@gmail.com (India),
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Symposia

13.1 Recent Advances in Near-Surface Geophysics

Gerald Gabriel gerald.gabriel@leibniz-liag.de (Germany)

13.2 Images of the Deep Earth and Geodynamics

Hitoshi Kawakatsu hitosi@eri.u-tokyo.ac.jp (Japan), Claudio Faccenna (Italy), Thorsten W. Becker (USA)

13.3 Imaging The Crust and Lithosphere Beneath the Continents

M. Ravi Kumar mravi@isr.res.in (India)

13.4 Crustal Structure and Deformation in Active Tectonic Regions with Special Reference to the Himalaya

A. Manglik amngri@gmail.com (India)

Theme 14 | *Emerging Trends in Exploration for Deep and Concealed Resources*

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Dinesh Gupta dineshguptagsi@yahoo.co.in (India),
Richard Blewett Richard.Blewett@ga.gov.au (Australia)

Symposia

14.1 Regolith Geology and Concealed Mineral Deposits

Ignacio González-Álvarez Ignacio.Gonzalez-Alvarez@csiro.au (Australia)

14.2 Application of Aerogeophysical Data Sets for Target Delineation through Basement Mapping/ Predictive Geological Mapping of Potentially Covered Terrains

B. K. Sahu sahubk2010@gmail.com (India)

14.3 Mineral System Approach for Enhancing Mineral Deposit Discovery Rate in the Potentially Covered Terrain

M. N Praveen praveenmn74@gmail.com (India)

14.4 Advances in Geophysical Approaches for Tracing Concealed and Deep Structures and Materials

M. K. Mukherjee mrinal_km67@yahoo.co.in (India)

14.5 Ground Geophysical Methods of Gravity, Magnetic, Electrical, Electromagnetic to Bring Out Concealed Fertile Bodies

G. Karunakar karunakar65@yahoo.com (India)

14.6 Geochemical Techniques of Tracing Distal Footprints of Concealed Mineral Deposits
David Cohen d.cohen@unsw.edu.au (Australia)
14.7 Recent Advances in Detection of Concealed Mineral Deposits by Integration Geoscience
M. N. Mishra mnmishra4@yahoo.co.in (India), R. Balaji (India)
14.8 Developments in Targeting Concealed and Deep Seated Uranium –REE Mineralization
A. K. Chaturvedi anandlko57@gmail.com (India)

Theme 15: *Volcanology: Geological, Archeological and Contemporary*

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Symposia

15.1 Continental Flood Basalts and Related Volcanics: Current Status of Knowledge and Future Work Possibilities
Raymond A. Duraiswami raymond.duraiswami@gmail.com (India), Stephen Self (USA), Hetu Sheth (India)
15.2 Island Arc Volcanics
Martin Jutzeler martin.jutzeler@utas.edu.au (Australia), Hiro Yamagishi (Japan), Tapan Pal (India)
15.3 Volcanism and Its Influence on Human Civilization
Karol Nemeth K.Nemeth@massey.ac.nz (New Zealand), Makarand Bodas (India), Loyc Vanderkluysen (USA), Himanshu Kulkarni (India)

Theme 16 | *Magmatism and Petrogenetic Processes*

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Parampreet Kaur param.geol@gmail.com (India),
Richard E Ernst richard.ernst@ernstgeosciences.com (Canada)

Symposia

16.1 Large Igneous Provinces and their Plumbing Systems

Rajesh K. Srivastava rajeshgeolbhu@bhu.ac.in (India), Richard E Ernst (Canada)

16.2 Granites - Petrogenesis to Metallogenesis

N M W Roberts nirob@bgs.ac.uk (UK), Naveen Choudhuri (India), Parampreet Kaur (India)

16.3 Subduction Zone Magmatism

Georg Zellmer G.F.Zellmer@massey.ac.nz (New Zealand), Jun-Ichi Kimura (Japan), Rajdeep Dasgupta (USA)

16.4 Magmatism in an Extensional Environment

Sarajit Sen Sarma sensarma2009@gmail.com (India), N.V. Chalapathi Rao (India)

16.5 Intraplate Alkaline Magmatism

N V Chalapathi Rao nvcrao@bhu.ac.in (India), Lukáš Krmíček (Czech Republic)

16.6 Melts and Fluids in the Earth's Mantle

Sujoy K Ghosh sujoy.ghosh@gg.iitkgp.ac.in (India), Nachiketa Rai (India)

16.7 Dynamics of Magmatic Processes

Santosh Kumar skyadavan@yahoo.com (India), Gregory Shellnutt (Taiwan), Steve Denyszyn (Australia), K R Hari (India)

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Andrey Bekker andrey.bekker@ucr.edu (USA)

Symposia

17.1 Geochemical and Chronological Perspective of Stars to Planets
G. Srinivasan gopalan.srinivasan@gmail.com (India)
17.2 Geochemistry of Earth's Crust and Crustal Evolution
Allen Nutman anutman@uow.edu.au (Australia)
17.3 Evolution of Earth's Atmosphere and Ocean: Geological and Geochemical Perspective
Andrey Bekker andrey.bekker@ucr.edu (USA)
17.4 Surface Geochemistry Past and Present
Albert Galy agaly@crpg.cnrs-nancy.fr (France)
17.5 Biogeochemistry
R. Baskar rbaskargjuhisar@yahoo.com (India)
17.6 Environmental Forensics of the Transport and Fate of Contaminant in Soil and Freshwater Systems
Prosun Bhattacharya prosun@kth.se (Sweden), Manish Kumar (India)
17.7 Advances in Analytical Geochemistry
Martin Whitehouse martin.whitehouse@nrm.se (Sweden)
17.8 Challenges and Opportunities of Global-Scale Geochemical Mapping (4th Arthur Darnley Symposium)
David B. Smith dsmith@usgs.gov (USA), Katherine Knights (Ireland), Patrice de Caritat (Australia), Xueqiu Wang (China), Alecos Demetriades (Greece)

Theme 18 | *Advances in Mineralogy, including Ore mineralogy, Gemmology and Geometallurgy*

Coordinators: *K. L. Pruseth klpruseth@gmail.com (India), Jayshree Panjikar jayshreepanjikar@gmail.com (India)*

Symposia

18.1 Minerals and Geochronology

K L Pruseth pruseth@gg.iitkgp.ac.in (India), Dewashish Upadhyay (India)

18.2 Geology and Gemstones

Jayshree Panjikar jayshreepanjikar@gmail.com (India)

18.3 Advances in Synthetic Gemstones

Pornsawat Wathanakul pwathanakul2@gmail.com (Thailand)

18.4 Diamonds Today

Andy Hsi-Tien Shen ahshen1@ymail.com (China)

18.5 Gem Species and Their Varieties

Lee A. Groat groat@mail.ubc.ca (Canada)

18.6 Quantitative Mineralogy – Applications and Value in Geoscience Systems

Shaun Graham shaun.graham@zeiss.com (UK), Vishwanath Uppugunduri (India)

Theme 19 | *Metallogeny in relation to Geodynamics and Crustal Evolution – Archean to Recent*

Coordinators: *Mihir Deb mihirdeb@gmail.com, M. L. Dora dorageol@gmail.com (India)*

Symposia

19.1 Metallogeny of South East Asia with Focus on Tectonics and Geochronology

Khin Zaw Khin.Zaw@utas.edu.au (Australia), Akira Imai (Japan), Hai Thanh Tran (Vietnam)

19.2 Iron Oxide Copper-Gold (IOCG) Deposits: New Developments in Characterisation, Understanding of Ore-Forming Processes, and Geodynamic Setting

Roger Skirrow Roger.Skirrow@ga.gov.au (Australia), Huayong Chen huayongchen@gig.ac.cn (China)

19.3 Granite Magmatism and Metallogeny

Yamuna Singh yamunasingh2002@yahoo.co.uk (India), Mohd. Shareef (India), M. L. Dora (India)

19.4 Metallogeny in Relation to Subduction

Kirtikumar R. Randive randive101@yahoo.co.in (India), Boris Belyatsky (Russia), Craig Storey (UK)

19.5 Plume Related Mineralization

K. R. Hari krharigeology@gmail.com (India), E. Sajhi (India)

19.6 Manganese Metallogenesis in Terrestrial Rock Record

Dillip Ranjan Kanungo dilliprkanungo@gmail.com (India)

19.7 Rift Related Mineralization: Geological and Geophysical Perspectives

Prabodha Ranjan Sahoo prabodha@iitism.ac.in (India), G Sreenivas Rao (India), Sahendra Singh (India)

Theme 20 | *Sustainable Development and Mining – An Integrated Approach*

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Pramod Ranjan pramod.ranjan@gmail.com (Australia)

Symposia

20.1 Biodiversity

Vipul Sharma vipul.sharma@iucn.org (India)

20.2 Reporting Sustainability

Biswajit Paul biswajit@iitism.ac.in (India)

20.3 Policy Initiative and Framework

Ashish Dash ashis001@gmail.com (India)

20.4 Mineral Security and Self Dependence

Partho Banerjee banerjee@fomento.com (India)

20.5 Innovative Approaches in Sustainability

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Theme 21 | *Earth Observation System – Climate Variables, Proxies and Modelling*

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A. P. Dimri apdimri@mail.jnu.ac.in (India)

Symposia

21.1 Altering Biogeochemical Cycles in Changing Climate
Rajesh Agnihotri rajagni9@gmail.com (India), Mark A. Altabet (USA)

21.2 Climate Proxy Records: A Tool for Future Climate Modelling
Anupam Sharma anupam110367@gmail.com (India), Liviu Giosan (USA)

21.3 Asian Monsoons and their Drivers from Mid-Holocene through Current Period
Karumuri Ashok ashokkarumuri@uohyd.ac.in (India), Mat Collins (UK)

21.4 Air Quality, Environment and Public Health Impacts in Asia
Prabir K. Patra prabir@jamstec.go.jp (Japan), A P Dimri (India)

21.5 Aerosol-Cloud-Radiation-Land Surface Interactions and Feedbacks: Consequences to Water Cycle during India Summer Monsoon
Sachchida (Sachi) N Tripathi snt@iitk.ac.in (India), Ilan Koren (Israel)

21.6 Monsoon Dynamics
Roxy Mathew Koll roxy@tropmet.res.in (USA), Deepti Singh (USA)

21.7 Climate Change and Earth Surface Processes in the Himalaya: Past and Present
Bodo Bookhagen bodo.bookhagen@uni-potsdam.de (Germany), Rajiv Sinha (India)

21.8 Dynamical Downscaling of Climate Projections for Use in Impact Studies at Very High Resolutions
Sushil Kumar Dash skdash@cas.iitd.ernet.in (India), R. Bhatla (India), Erika Coppola (Italy)

Theme 22 | *Evolution of Monsoon: Past, Present and Future*

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Arun Deo Singh arundeosingh@yahoo.com (India),
Pallavi Anand pallavi.anand@ open.ac.uk (UK)

Symposia

22.1 Advances in our Understanding of Global Hydro-Climate Dynamics Before Cenozoic

Robert A Spicer r.a.spicer@open.ac.uk (UK), Vandana Prasad (India)

22.2 Evolution of Monsoon Variability on Tectonic Scale During the Cenozoic

Ann Holbourn ann.holbourn@ifg.uni-kiel.de (Germany), Raj K. Singh (India)

22.3 Monsoon Evolution Pattern on Orbital to Suborbital and Centennial to Interdecadal Scales

Stephan Steinke ssteinke@xmu.edu.cn (China), Sushant Naik (India)

22.4 Holocene Monsoon History with Focus on Changes during Last Two Millennia

Ashish Sinha asinha@csudh.edu (USA), Gayatri Kathayat (China), Prosenjit Ghosh (India)

22.5 Megadroughts: Past, Present, and Future

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Theme 23 | *Hi-Tech and Critical Mineral Commodities*

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Symposia

23.1 Carbonatites and Alkaline Rocks: Origin and Evolution with Special Reference to Rare Metal and REE Mineralisation

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23.2 Non-Carbonatites Related REE Mineralisation and their Production

Yasushi Watanabe y-watanabe@gipc.akita-u.ac.jp (Japan), Kenzo Sanematsu (Japan),

23.3 Rare Earths – A Global Perspective

P L Hellman phillip_hellman@bigpond.com (Australia)

23.4 Critical Raw Materials for Sustainable Development: Geology, Resources, Production and Socio-Economics

Harikrishnan Tulsidas harikrishnan.tulsidas@un.org (Switzerland)

23.5 Critical Metal Deposits and New Technology

Shao-Yong Jiang shyjiang@cug.edu.cn (China)

23.6 Raw Materials for the Electric Vehicle Revolution: Geology, Mineralogy and Geometallurgy
Kathryn Goodenough kmgo@bgs.ac.uk (UK)
23.7 Mineral Processing Technology for Cleaner Production of High-Tech and Critical Metals
T Sreenivas tsreenivas@ymail.com (India), Abhilash (India)
23.8 Pegmatite: Mechanism of Emplacement, Genesis, Deposits and Economic Significance
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Theme 24 | *Oceans in a Changing World*

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Symposia

24.1 Spatio-Temporal Variability of Carbon Burial in the Oceans
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24.2 Assessing Coastal Vulnerability in A Warming World
R. Mani Murali mmurali@nio.org (India)
24.3 Response of Marine Organisms to Ocean Acidification
Haimanti Biswas haimanti.biswas@nio.org (India), Suhas Shetye (India), Dineshram R (India)
24.4 Reconstructing Past Pollution Levels from Marginal Marine Regions
G.N. Nayak gnnayak@unigoa.ac.in (India), Rajiv Nigam (India)
24.5 Sea Level Changes during Late Pleistocene and Holocene Periods and its Implications of Coastal Landforms.
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Theme 25 | *Human evolution, Geoarcheology, Sustenance Strategies*

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Symposia

25.1 Geoarcheology and Paleoenvironment

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25.2 Late Quaternary Climate Shifts and Human Adaptation to Landscape: A Geoarchaeological Approach

Hema Achyuthan hachyuthan@yahoo.com (India)

25.3 Terrain, Time and Tools: Pleistocene to Early Holocene Prehistoric Adaptations

Rakesh Tewari rakesh.tewari53@gmail.com (India), Shanti Pappu (India), Kumar Akhilesh (India), Yanni Gunnell (France), Partha Chauhan (India)

25.4 Recent Scientific Methods in Coastal and Inter-Tidal Archaeology

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Theme 26 | *Metamorphic Processes and Petrogenesis*

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Symposia

26.1 Accessory Minerals to Metamorphic Processes: Trace Elemental and Isotopic Insights

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26.2 Early Earth Orogenesis

Santanu K. Bhowmik santanu@gg.iitkgp.ernet.in (India), Sankar Bose (India)

26.3 Metamorphism at Convergent Plate Margins: Tales from the Upper Plate

Richard Mark Palin rmpalin@mines.edu (USA), Nick Roberts (UK)

26.4 Characterization, Duration, Tectonics and Implications of Ultrahigh Temperature Metamorphism

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26.5 HP- To UHP Metamorphism: From Small Scale Observations to Mountain Forming Processes

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26.6 Metamorphic Products of Lithospheric Convergence: Subduction Zones

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Theme 27 | *Rock Deformation and Rheology*

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Symposia

27.1 Field Structures – Macro to Meso Scale Deformation Processes
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27.2 Rheology and Deformation Mechanisms in the Earth
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27.3 Fabric Analysis – Past, Present and Future
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27.4 Structural Control on Fluid Flow and Mineralization
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27.5 Extrapolating Experimental Rock Deformation Results to Field Structures
Alison Ord alison.ord@uwa.edu.au (Australia), Santanu Bose (India), H.B. Srivastava (India), J.H. Kruhl (Germany), Virginia G. Toy (New Zealand)

27.6 Structural Geology and Society - Restoration, Geothermal Energy and Hydrocarbons
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Theme 28 | *Ore forming processes and systems (Sponsored by SEG and SGA)*

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Symposia

28.1 Magmatic Processes and Ore Deposits

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28.2 Hydrothermal Processes and Ore Deposits

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28.3 Sedimentary Processes and Ore Deposits

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28.4 Fluid/Melt Inclusions, Trace Element and Isotope Geochemistry in Study of Ore Deposits

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28.5 Solubility of Metals in Melt/Fluid Systems

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28.6 Metamorphism and Ore Remobilization

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Symposia

29.1 Uranium Mineral Systems: Genetic Models and New Understandings of Uranium Deposits
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29.2 Advances in Uranium Exploration and Exploitation
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29.3 Unconventional Uranium Resources: A Global Perspective
Patrice Bruneton p.bruneton@orange.fr (France)

29.4 Thorium: Future Energy Source Exploration, Resources and Technology
Harikrishnan Tulsidas harikrishnan.tulsidas@un.org (Switzerland)

29.5 Uranium Resources and the Fuel Cycle for the 21st Century
Christophe Xerri c.xerri@iaea.org (Austria), Harikrishnan Tulsidas (Switzerland)

29.6 Geological Aspects, Exploration and Economics of Coal Deposits
A.B. Dutt amit22dutt@gmail.com, Chandan Chakraborty (India), Anjan Rai Choudhuri (India), Goutam Mukherji (India)

29.7 Coal: Characterization, Beneficiation and Utilization
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Theme 30 | *Hydrocarbon Systems*

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Symposia

30.1 Petroleum System

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30.2 Shale Gas & Coal Bed Methane

A. M. Dayal anurodhisotope@gmail.com (India), Brian Horsfield (Germany), Rajiw Lochan (India)

30.3 Gas-Hydrates: Future Major Energy Resources

Ingo Pecher i.pecher@auckland.ac.nz (New Zealand), Bjørn Kvamme (Norway), Kalachand Sain (India), Giuliana Panieri (Norway)

30.4 Sub-volcanic Mesozoic Sediments

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30.5 Enhanced Oil Recovery

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30.6Carbon Capture, Utilization and Storage Experiment

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30.7 Tectonics, Sedimentary Basins and Petroleum Systems

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Theme 31 | *Geohazards*

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Symposia

31.1 Geosciences for Disaster Risk Reduction

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31.2 Geohazards in Inter and Intra Plate Tectonic Regimes

Sandip K Som sksom999@gmail.com (India), A. P. Singh (India), Shuichi Hasegawa (Japan)

31.3 Landslides, Other Related Mass-Wasting Hazards and Associated Risks

Jonathan Godt jgodt@usgs.gov (USA), Oded Katz (Israel), Fausto Guzzetti (Italy), Niroj K. Sarkar (India)

31.4 Analysis of Multi-Hazards and their Risk over Large Areas

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31.5 Monitoring, Predictability and Early Warning of Geohazards

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31.6 Urbanization and Geohazards

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31.7 Mining and Industrial Hazards and Subsidence

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31.8 Geohazards Risk Reduction Measures and Mitigation

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31.9 Geohazards Risk: Communications, Education & Knowledge Exchange

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31.10 Global Disaster Risk Reduction Policies: Status, Scope and Future Perspectives

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Theme 32 | *Environmental Geosciences*

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Symposia

32.1 Human Activities and the Geoenvironment

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32.2 Environmental Geochemistry

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32.3 Palaeosols and Palaeoweathering Profiles: Indicators of Palaeoclimates and Palaeoenvironments

Mohammed Rafi G. Sayyed mrgsayyed@yahoo.com (India), Jayant K. Tripathi (India)

32.4 Water Resources

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32.5 Urban Geosciences

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Theme 33 | *Engineering Geology and Geotechnical Engineering*

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Symposia

33.1 Recent Advances in Engineering Geology

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33.2 Soil Mechanics and Geoenvironmental Engineering

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33.3 Rock Engineering and Underground Structures

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33.4 Soil Dynamics and Earthquake Geotechnical Engineering

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Theme 34 | *Geomagnetism: Origin of Geomagnetism, Seismology from Space*

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Symposia

34.1 The Main Geomagnetic Field: Understanding the Structure, Dynamics and History of the Earth

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34.2 Decoding Seismic Imprints in the Earth and its Near Space Environment

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34.3 Remote Sensing of Lithosphere Using Natural Source Magnetic and Electromagnetic Method for Structure, Tectonics and Resource Evaluation.

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Theme 35 | *Advances in Mathematical Geosciences, Mineral Resource Evaluation and Mine-Planning*

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Symposia

35.1 Mathematical Geosciences and Mineral Resource Evaluation

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35.2 Mine Planning and Scheduling

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35.3 Risk Analyses in Mineral Resource Evaluation, Mine Planning and Operations

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Theme 36 | *Exploration and Mining of Marine Mineral Resources*

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Symposia

36.1 Polymetallic Nodules: Geological Characteristics and Resource Potential
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36.2 Modern Seafloor Hydrothermal Systems and Massive Seafloor Sulphides
Kamesh Raju kameshraju@gmail.com (India), John Kurian (India), Jérôme Dyment (France)

36.3 Cobalt-Rich Ferromanganese Crusts: Formation and Occurrence
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36.4 Exploration for Deep-Sea Mineral Resources: The Scientific and Technological Challenges
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36.5 Mining of Deep-sea Minerals: Potential Impacts on the Marine Environment, Remedial Measures and Mitigation Strategies
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36.6 Deep Sea Mining Within and Beyond National Jurisdictions: Technological Developments and Regulatory Frameworks
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36.7 Extended Continental Shelves under UNCLOS: Sovereign Rights for Exploiting Non-living Resources Beyond 200 Nautical Miles
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36.8 Mineral Resources of the Continental Margins, Excluding Hydrocarbons
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Theme 37 | *Critical zone and Sustainable Development*

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Symposia

37.1 Ecohydrology

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37.2 Critical Zone Science in Tropical System

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37.3 Biogeosciences

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Theme 38 | *Hydrogeology and Sustainable Development*

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Symposia

38.1 Mapping, Investigation, Characterisation and Management of Aquifers

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38.2 Ground Water Chemistry and Contamination

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38.3 Managed Aquifer Recharge and Groundwater Resource Sustainability

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38.4 Fragile Hydrogeology of Coastal, Island and Other Sensitive Areas

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38.5 Deeper and Trans-Boundary Aquifers

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38.6 Impact of Climate Change on Ground Water

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Theme 39 | *Geoscience Information - Integration*

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Symposia

39.1 Mineral Systems Approach to Exploration Targeting

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39.2 Mineral Prospectivity Modelling: State of the Art

E John M Carranza ejmcarranza@gmail.com (South Africa), Alok Porwal (India)

39.3 Remote Sensing & Geosciences

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39.4 Geocomputation and Data Analytics for Geological Data Mining and Knowledge Discovery

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Theme 40 | *Planetary Sciences*

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40.1 Planetary Surface Processes on Moon, Mars and Venus

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40.2 Cosmochemistry of Planetary Materials and Planetary Processes.

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40.3 Impact Cratering – The Works

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40.4 Remote Sensing-Based Compositional Studies of Planetary Bodies and Planetary Geomorphology

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40.5 Comparative Planetary Mineralogy and Petrology using Terrestrial Analogues

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40.6 Space Instrumentations and Innovations- Downsizing and Energy Efficient Technology

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40.7 Planetary Habitability and Astrobiology

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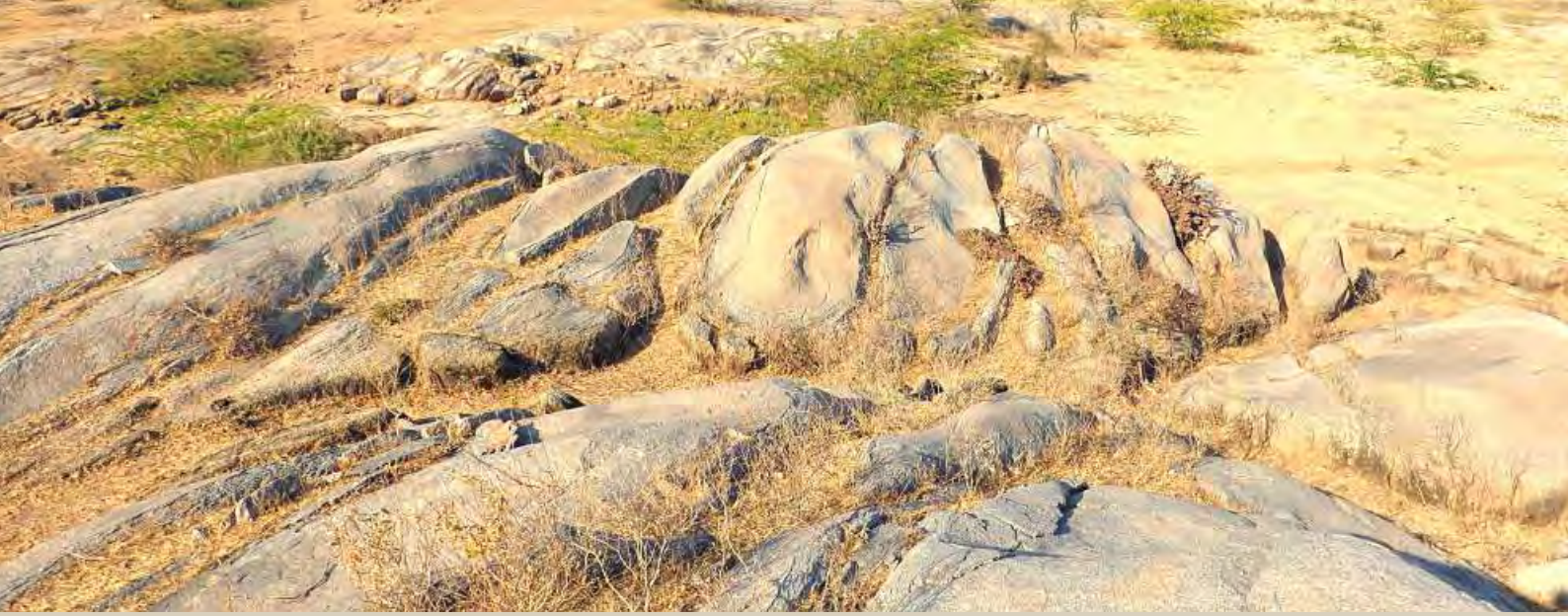

Theme 41 | *Quantification of Non-linear Geological Processes*

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Symposia

41.1 Chaos and Fractal theory

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41.2 Earthquake Triggering/ Interaction

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41.3 Statistical Seismology

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41.4 Mathematical Modelling of Seismology and Earthquake Engineering

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41.5 Scaling, Stochastic Processes, and Complex Networks

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41.6 Nonlinear Processes in Potential Field

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41.7 Quantification and Modelling of Nonlinear Processes in Climate Change and Extreme Events

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41.8 Hydrology and Reservoir Dynamics

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41.9 Application of Nonlinear Methods in Geological Processes

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41.10 Geophysical Inversion Methods and Optimization

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Theme 42 | *Geological Sequestration of CO2 and Enhanced Oil Recovery*

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Symposia

42.1 Deccan Trap basement: Evolution and Processes

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42.2 Carbon Capture and Utilization as a Pathway to Reliable Storage

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42.3 CO2 Storage/ Trapping Mechanism

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42.4 CO2 Storage Associated with Enhanced Oil Recovery

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42.5 Geologic Storage of CO2 in Deep Saline Aquifers / Geologic Site Characterization and Monitoring

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Theme 43 | *Kimberlites, Xenoliths and Diamonds: Snapshots of the Earth's Mantle*

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Symposia

43.1 Exploration and Mining for Kimberlites

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43.2 Emplacement of Kimberlites and Related Rocks

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43.3 Petrology of Kimberlites and Related Rocks

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43.4 Mafic, Ultramafic Xenoliths and Xenocrysts: Physical and Chemical Architecture of the Subcontinental Lithospheric Mantle (SCLM)

Stephen Haggerty haggerty@fiu.edu (USA)

43.5 Deep Mantle Processes: Petrological, Geochemical and Isotopic Studies from Mantle Xenoliths and Xenocrysts

Sebastian Tappe sebastiant@uj.ac.za (South Africa)

43.6 Recipes for Diamonds: Evidences from Fluids and Inclusions

J.N.Das jndas7@gmail.com (India)

Theme 44 | *Non-invasive 3D Groundwater Mapping for Resource Management*

Coordinators: *Shakeel Ahmed shakeelifcgr@gmail.com (India),*
Subash Chandra schandra75@gmail.com (India),
John W. Lane Jr. jwlane@usgs.gov (USA)

Symposia

44.1 Assessing Sub-Surface from Space and Remote Sensing
Saumitra Mukherjee saumitramukherjee3@gmail.com (India), Atiqur Rahman (India),
44.2 High Resolution 3D Geophysical Mapping of Geological Formations Using Airborne Survey
Esben Auken esben.auken@geo.au.dk (Denmark), Subash Chandra (India)
44.3 Characterization of Litho-Units for Aquifer Delineation by Integrating Ground Survey Data
Prabhat C. Chandra chandrapc67.gwgp@gmail.com (India), Kishore C. Naik (India)
44.4 Geological and Geotechnical Characterisation for Fracture Pathway in Hard Rocks
Subash Chandra schandra75@gmail.com (India), Rana Chatterjee (India)
44.5 Geophysically Constrained Hydrogeological Parameters Estimation
Mohammed Israil mohdfes@iitr.ac.in (India), Sarah (India)
44.6 Diverse Applications in Discovering Paleo-Channels, Optimizing Artificial Recharge & Waste Disposal Sites, Smart Cities Etc.
S.K. Verma skvngri@gmail.com (India), Jainendra K. Rai (India)

Theme 45 | *Thematic and Specialised Symposia/ Sessions Organisedby International and National Scientific Organisations*

45.1 Hillslope Process and Climate Change [International Association of Geomorphologists (IAG)]
Mauro Soldati (Italy), Sunil Kumar De desunil@yahoo.com (India), Mihai Micu (Romania)
45.2 Geomorphological Hazards and Risks mitigation through new techniques [International Association of Geomorphologists (IAG) Working Group on GEOMORPHOLOGICAL HAZARDS (IAGGeomhaz)]
Bianca Vieira (Brazil), Sunando Bandyopadhyay odnanus@gmail.com (India), Helene Petschko (Austria)
45.3 Status of mineral resources of SAARC nations for cooperative mineral-based industries [Indian Geological Congress (IGS)]
O. P. Verma igcroorkee@gmail.com (India)
45.4 Special IAMG Award Keynote session [International Association for Mathematical Geosciences (IAMG)]
Jennifer McKinley j.mckinley@qub.ac.uk (UK), Christien Thiart (South Africa)
45.5 Special IAMG Session on IAMG Delegate Meeting [International Association for Mathematical Geosciences (IAMG)]
Jennifer McKinley j.mckinley@qub.ac.uk (UK)

45.6 Symposia/Sessions proposed for 6th YES Congress: Breaking Boundaries - Unifying Geosciences [YES Network]

45.6.1. Shear Zones and Crustal Deformations (SZCD)

Durga Prasanna Mohanty durgamohanty.online@gmail.com (India), Ankush Singh (USA)

45.6.2. Water: Sustainability for Life (WS)

N. Srinivasa Rao srinarukula@gmail.com (India), Md. Taufique Warsi (India), Faisal Kamal Zaidi (UAE)

45.6.3. Integrated Geoscience (IG)

Kumar Batuk Joshi kr.batukjoshi@gmail.com (India), Vineet Goswami (USA)

45.6.4. Crunch in Computational Geoscience (CCG)

Anand Singh anandsingh.gg.iitkgp@gmail.com (India), Mahak Singh Chauhan (India), Shuang Liu (China)

45.6.5. Geoscientific Challenges and Advances in Natural Resource Exploration

Chandra Prakash Dubey p.dubey48@gmail.com (India), Shib Sankar Ganguli (India), Srikumar Roy (UK)

45.6.6. Tectonics, Surface Processes and Climate

Sajid Ali sajidali7861@gmail.com (India), Madhav K. Murari (Germany)

45.6.7. Hydrogeophysical Studies for Vadose Zone Characterizations

Tanvi Arora tanvi@ngri.res.in (India)

45.6.8. Non-invasive Geophysical Methods and Numerical Modelling for Groundwater Resources Exploitation and Management

Payal Rani payal.gpy@gmail.com (India), Zoi Dokou (USA)

45.6.9. Multi-proxy Approach in Paleo Monsoon Reconstruction During Quaternary Period

Upasana S. Banerji upasana.s.banerji@gmail.com (India), Chandana K.R. (India)

45.6.10. Quaternary Landform Evolution in a Mountainous Landscape

Rahul Devrani rahuldevrani18@gmail.com (India), Anil Kumar (India)

45.6.11 Forward Modelling of Present Day Continents: Challenges and Solutions

Ravi Shankar ravisingh82.2@gmail.com (India), R. V. Gireesh (India)

45.6.12. Advances in Earth and Planetary Sciences

Rajeev Kumar Yadav rs123.bhu@gmail.com (India), Ramdayal Singh (India)

45.6.13. Geochemical Signatures of Paleo Monsoon Variability

Barnita Banerjee barnita.gem@gmail.com (India), Mahjoor Ahmad Lone (Taiwan)

45.6.14. Understanding the Earth Structure and Mantle Dynamics through Geophysical Observations

Padma Rao B padmarao.india@gmail.com (India), Sunil Rohilla (India), Sunil Roy (India), Dipankar Saikia (India)

45.6.15. Geodynamic Significance and Mineralization Potential of the Precambrian Ultramafic Complex

Niranjan Mohanty niranjanmohanty9090@gmail.com (India), Abhinay Sharma (India)

45.6.16. Biogeochemical Cycling of Carbon and Nitrogen in Terrestrial and Coastal Environments

Punyasloke Bhadury pbhadury@gmail.com (India), Anwesha Ghosh (India), Ajcharaporn Piumsomboon (Thailand)

45.6.17. Ichnology in Shallow Marine and Transitional Environments

Carlos Cónsole-Gonella carlosconsole@csnat.unt.edu.ar (Argentina), Silvina de Valais (Argentina), Ignacio Díaz-Martínez (Argentina), Paolo Citton (Argentina)

45.6.18. UNESCO Global Geoparks in Latin America and the Caribbean: Lessons Learnt and the Way Ahead

Denise Gorfinkiel d.gorfinkiel@unesco.org (Uruguay)

45.7 The IUGS Big Science Program: Deep-time Digital Earth (DDE) [International Union of Geological Geosciences (IUGS)]

Shuzhong Shen szshen@nju.edu.cn (China), Kerstin Lehnert lehnert@ldeo.columbia.edu (USA)

45.7.1. Evolution of Life and Biodiversity Changes through Deep Time

Shuzhong Shen szshen@nju.edu.cn (China), David A. T. Harper david.harper@durham.ac.uk (UK), Sylvie Crasquin sylvie.crasquin@mnhn.fr (France)

45.7.2. Evolution of Sedimentary and Paleoclimate System

Isabel Montañez ipmontanez@ucdavis.edu (USA), Stephen Hesselbo S.P.Hesselbo@exeter.ac.uk (UK), Xiumian Hu huxm@nju.edu.cn (China)

45.7.3. Quantifying Plate Tectonics and Deformation in Four Dimensions

Shaofeng Liu 1998011190@cugb.edu.cn (China), Simon Williams simon.williams@nwu.edu.cn (China), Michael Gurnis gurnis@gps.caltech.edu (USA)

45.7.4. Exploring the Evolution of Materials and Environments through Deep Time

Shaunna M. Morrison smorrison@carnegiescience.edu (USA), Robert M. Hazen rhazen@ciw.edu (USA), Zengqian Hou houzengqian@126.com (China)

45.7.5. Open and Big Data, Artificial Intelligence, and Geoinformatics: New Paradigms that Advance Discovery and Knowledge of Earth in Deep-time

Kerstin A. Lehnert lehnert@ldeo.columbia.edu (USA), Junxuan Fan jxfan@nju.edu.cn (China), Shanan Peters peters@geology.wisc.edu (USA), Matt Harrison mharr@bgs.ac.uk (UK)

45.7.6. DDE in Geological Survey Organizations and Industry

Shaunna M. Morrison smorrison@carnegiescience.edu (USA), Mike Stephenson mhste@bgs.ac.uk (UK), Zhiqiang Feng fengzq.syky@sinopec.com (China)

45.7.7. Dinosaur Macroevolution and Building an Integrated Database for both Academia and the Public

Xing Xu xu.xing@ivpp.ac.cn (China), Mark A Norell norell@amnh.org (USA), Michael Benton mike.benton@bristol.ac.uk (UK)

45.7.8 Orogenic architecture and crustal growth from accretion to collision (IGCP-662)

Tao Wang Taowang@cags.ac.cn (China), Dmitry Gladkochub dima@crust.irk.ru (Russia), Reimar Seltmann R.Seltmann@nhm.ac.uk (UK), Suzanne Y. O'Reilly sue.oreilly@mq.edu.au (Australia), **Oleg** Petrov vsegei@vsegei.ru (Russia), Wenjiao Xiao wj-xiao@mail.iggcas.ac.cn (China)

45.7.9. Workshop: Tools and Techniques of Data-Driven Discovery

Junxuan Fan jxfan@nju.edu.cn (China), Shaunna M. Morrison smorrison@carnegiescience.edu (USA)

45.8 Geohazards Surveys, Data Integration and their Comprehensive Guidelines [IUGS Task Force on Geohazards]

Yasukuni Okubo Okubo-Yasukuni@jspacesystems.or.jp (Japan), Antonio Correia (Portugal), Adichat Surinkum (Thailand), Zhang Minghua (China), Carlo Doglioni (Italy), José Pacheco (Portugal), Benjamin van Wyk de Vries (France), Yoshihiko Ito (Japan)

45.9 Role and Contributions of Geosciences Community and Institutions Role and Contributions for Sustainable Development Goals [Federation of Indian Geosciences Associations (FIGA)]

Virendra M Tiwari igacongressdirector@gmail.com, director@ngri.res.in (India), Kalachand Sain (India)

45.10 Advances in Geoscience Data Sharing and Processing [CGI-IUGS – IAMG – OneGeology - CCOP]

Zhang Minghua zminghua@mail.cgs.gov.cn (China), Francois Robida (France), Jennifer McKinley (UK), Matt Harrison (UK), Young Joo Lee (Korea)

45.11 40 years with International Lithosphere Program (ILP) [International Lithosphere Program (ILP)]

Hans Thybo (Turkey), Magdalena Scheck-Wenderoth magdalena.scheck@gfz-potsdam.de (Germany), Alexander Rudloff (Germany)

45.12 Advanced Quantitative Studies and 3D or 4D Forward & Inverse Modelling inGeosciences [American Association of Petroleum Geologists (AAPG)]

J.A.Vargas-Guzmán vargasja@aramco.com (Australia), Radhey S. Bansal (India)

45.13 Ground, Unmanned vehicles and Satellite Observations for Monitoring, Mapping and Early Warning of Geo-Hazards [AGU-IUGG]

Ramesh P Singh, rsingh@iitmandi.ac.in (India), Alik Ismail-Zade (Germany), Anil D. Shukla (India), Dericks P. Shukla (India)

45.14 Critical Mineral Resources related to Granitic and Pegmatitic Systems: From Minerals to Metallogeny [Working Group on Critical Metals (WGCM) of International Association on the Genesis of Ore Deposits (IAGOD)]

Jingwen Mao jingwenmao@263.net (China), Reimar Seltmann r.seltmann@nhm.ac.uk (UK), Yanbo Cheng yanbo.cheng1@jcu.edu.au (Australia), Guiqing Xie xieguiqing@cags.ac.cn (China), Yamuna Singh yamunasingh2002@yahoo.co.uk (India)

45.15 Geoscience in Sustainable Development [Association of Geoscientists for International Development (AGID)]

Afia Akhtar afia@agni.com (Bangladesh), Viqar Hussain Prof.viqarhusain@yahoo.com (Pakistan), M Nurul Hasan mnhasan@agni.com (Bangladesh), Shahina Tariq shahinatariq@comsats.edu.pk (Pakistan), Madhumita Das madhumitadas_geo@rediffmail.com (India)

45.16 Ground Water Development for Achieving Food Security and Improving Rural Health in Low-Income Countries [Association of Geoscientists for International Development (AGID)]

S. D. Limaye sdlimaye@gmail.com (India), Bhavana Umrikar bnumrikar@gmail.com (India), Bhagyashri Maggirwar bhagyashri.maggirwar@gov.in (India)

45.17 Socio-Geology & Socio-Hydrogeology: Taking Geosciences to the Society [Association of Geoscientists for International Development (AGID)]

S. D. Limaye sdlimaye@gmail.com; sdlimaye@yahoo.com (India), Afia Akhtar afia@agni.com (Bangladesh), Shahina Tariq shahinatariq@comsats.edu.pk (Pakistan), Bhagyashri Maggirwar bhagyashri.maggirwar@gmail.com (India)

45.18 Decoding the Earth's Surface in High-Mountain Terrains: Processes and Timescales of Tectonic and Climatic Forcing on Topography (DESTINY) [German Research Foundation (DFG)]

45.19 Geology/geodynamics of the Indian Ocean and its margins [Commission for the Geological Map of the World (CGMW)]

Manuel Pubellier manupub.pubellier@gmail.com (France), Nadine Ellouz-Zimmermann (France), Peter Miles (UK)

45.20 Evolution of the Korean Peninsula and East Asian tectonics [Geological Society of Korea & Korean Society of Petroleum and Sedimentary Geology]

Chang-sik Cheong, ccs@kbsi.re.kr (Korea), Young Kwan Sohn yksohn@gnu.ac.kr (Korea)

Call for Abstracts

Authors are invited to submit abstracts for the 36th International Geological Congress (36th IGC) in 287 Science Symposia from 45 Scientific Themes via the 36th IGC website (https://www.36igc.org/abstract-submission)

Abstracts submitted till 15 September 2019 requires no abstract submission fee. However, from 16 September 2019 till the last date, that is 15 October 2019, abstract submission will involve a fee of US$ 20 or its INR equivalent (for submissions from India). Abstracts can not be submitted after 15 October 2019.

Abstracts are limited to 250 words. Tables, figures, illustrations, references and other graphics are not accepted. Abstracts must be submitted by the Presenting Author (Oral or Poster) and will be reviewed by the appropriate Theme/ Symposia Coordinators/ Conveners.

The Presenting Authors will have to complete their Congress Registration latest by the deadline of Standard Registration (31 January 2020) to enable them to present (Oral or Poster) their work in the Congress. The abstracts of the Presenting Authors, who fail to complete their Congress Registration by 31 January 2020 will not be included in the Science Proceedings of the Congress.

While submitting an abstract, the Presenting Author shall adhere to the following guidelines:

- The abstract contains relevant data and meet international ethical standards.
- It is free of spelling, grammatical, or scientific mistakes, as the abstract will be reproduced exactly as submitted.
- The abstract must not promote any product or service.
- The content of the abstract has not been submitted/ published elsewhere.
- All the co-authors should agree to the content of the abstract.
- The abstract is relevant to the Theme and Symposium in which it is being submitted.
- Once the abstract is submitted, the authors' sequential order and the name of the presenting author cannot be changed.
- Fabrication of data, results, selective reporting of data, theft of intellectual property, and plagiarism are unacceptable. If detected, such abstracts may be rejected.
- Abstracts should not contain any text which might imply that one author is superior to another on grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout.

The online process of abstract submission will broadly include the following steps:

STEP 1. Log onto the Abstract Submission page of the 36th IGC website (https://www.36igc.org/abstract-submission), carefully read all terms and conditions of abstract submission and then click on the online abstract submission link.

STEP 2. If newly registering for online abstract submission, use a valid email id and password for login. Using one email ID as username allows you to submit one abstract only. For multiple submissions in different symposia, please use different valid email ID's. If you have logged in before, use the relevant link as "already registered" and use your email ID and password used earlier.

STEP 3. Submit information of the Presenting Author and other Co-authors (upto a maximum of five co-authors). For abstracts having more than six authors, you may contact abstract@36igc.org for inclusion of the names of additional authors in the Proceedings volume.

STEP 4. Please read carefully the additional terms and conditions of the abstract and then submit the abstract. The title and the abstract content will have to be typed or pasted separately. Abstract to be submitted in a symposium should be selected from the dropdown menu. The Presenting Author is also asked to give his/ her preference for presentation type and also the willingness to avail GeoHost support. If the authors do not require GeoHost support, the GeoHost page may be ignored.

STEP 5. After successful abstract submission, the Presenting Author is taken to the payment page. There is no abstract submission fee till 15 September 2019. Therefore, till that period, the "Confirm and Pay" page may be ignored. However, for abstract submissions between 16 September 2019 and 15 October 2019, US$ 20 (or its INR equivalent for submissions from India) should be paid to complete the abstract submission process.

STEP 6. If you intend to apply for GeoHost support, you may submit the details on the GeoHost page and confirm.

STEP 7. Finally, go to the Registration Summary Page, and take a print out as a confirmation of your abstract submission.

Professional Development Workshops and Short Courses

The 36th IGC is offering opportunities to individuals, companies, institutions and organisations to conduct Professional Development Workshops/ Short Courses during the Congress.

The options are:

1. PRE-CONGRESS: At a suitable venue depending on the proposals received.
2. DURING CONGRESS: At the Congress venue after 7:00 PM during 4-7 March, 2020.
3. POST-CONGRESS: At a suitable venue depending on the proposals received.

Accepted proposals will be incorporated in the 36th IGC Program, and announced on the website. Participation will be open to registrants of the Congress only. For the courses/workshops conducted during the Congress, 36th IGC will provide the space in classroom style and with standard audio-visual equipment. For the pre- and post-Congress courses/workshops, the proposers will make the necessary arrangements and pay for the associated costs; however, on request, 36th IGC will provide assistance.

The last date for receiving the proposals online (https://www.36igc.org/workshops) is 30 September, 2019.
For any queries related to Wrokshops and Short Courses, email us at bm.wsc@36igc.org

Workshops/ Short Courses proposals received till date

Workshop/ Short Course: WSC01	
Title	Hydrothermal Mineral Systems
Resource Persons/Presenters	Prof. Franco Pirajno
Affiliation	Centre for Exploration Targeting; University of Western Australia
Schedule	During Congress
Number of Days	Two (02)
Date	To be announced later
Contact	franco.pirajno@uwa.edu.au
Target Group	Mineral Exploration Geologists, Post-Graduates Studying Mineral Systems
Number of Participants	30

Workshop/ Short Course: WSC02	
Title	Statistical and Geostatistical Analyses for Mineral Exploration
Resource Persons/Presenters	Dr. Abani R Samal
Affiliation	GeoGlobal LLC
Schedule	During Congress
Number of Days	Two (02)
Date	To be announced later
Contact	arsamal@gmail.com
Target Group	Exploration Geologists, Mining Geologists, Mining Engineers, Surveyors, Environmentalists and any Other Industry Professionals dealing with Spatial Data Collection and Analyses
Number of Participants	40

Workshop/ Short Course: WSC03	
Title	The Four Pillars of Mineral Exploration through Cover: Regolith Mapping, Landscape Evolution, Geochemical Dispersion Processes and Geophysical Data
Resource Persons/Presenters	1.Dr. Carmen Krapf; 2. Dr. Ignacio González-Álvarez
Affiliation	1.Geological Survey of South Australia 2. Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	Carmen.Krapf@sa.gov.au; Ignacio. Gonzalez-Alvarez@csiro.au
Target Group	Exploration Geologists, Mining Geologists, Mining Engineers, Surveyors, Environmentalists and any Other Industry Professionals dealing with Spatial Data Collection and Analyses.
Number of Participants	30

Workshop/ Short Course: WSC04	
Title	An Introduction to R, SSLib and ETAS Modelling
Resource Persons/Presenters	1. Dr. David Harte; 2. Dr. J. Zhuang; 3. Dr. Ting Wang
Affiliation (s)	1. GNS Science, New Zealand 2. Institute of Statistical Mathematics, Japan 3. Otago University, New Zealand
Schedule	During Congress
Number of Days	Two (02)
Date	To be announced later
Contact	D.Harte@gns.cri.nz; zhuangjc@ism.ac.jp; ting.wang@otago.ac.nz
Target Group	Researchers that analyse seismic data, describe its empirical characteristics, and produce probabilistic earthquake forecasts. No prior knowledge of the R software will be required.
Number of Participants	20

Workshop/ Short Course: WSC05	
Title	Geoheritage and Geoconservation: Principles, Methods, and Challenges of an Applied Geoscience
Resource Persons/Presenters	Prof.Jose Brilha
Affiliation (s)	ProGEO (The European Association for the Conservation of Geological Heritage) and University of Minho, Portugal
Schedule	During Congress
Number of Days	Two (02)
Date	To be announced later
Contact	jbrilha@dct.uminho.pt
Target Group	Geoscientists working in the academia, public services, geological surveys, private companies, and graduate and post-graduate geoscience students
Number of Participants	40

Workshop/ Short Course: WSC06	
Title	Women in Geosciences
Resource Persons/Presenters	1.Ms. Ndivhuwo Cecilia Mukosi; 2. Prof. EzzouraErrami; 3. Dr. Tanvi Arora
Affiliation (s)	1. African Association of Women in Geoscience 2. Council for Geoscience, Africa 3. NGRI, India & YES Network
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	ncmukosi@gmail.com
Target Group	Female Geoscientists
Number of Participants	30

Workshop/ Short Course: WSC07	
Title	Use of Fluid Inclusions in Exploration for Magmatic-Hydrothermal Ore Deposits
Resource Persons/Presenters	Prof. Robert J Bodnar
Affiliation (s)	Virginia Tech University, USA
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	rjb@vt.edu
Target Group	Graduate students and young professionals, especially those working in the minerals industry
Number of Participants	30

Workshop/ Short Course: WSC08	
Title	Social Responsibility in Geoscience Education
Resource Persons/ Presenters	Prof. Mike Katz
Affiliation (s)	Professor (Retired) of University of New South Wales, Australia
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	mikekatz320@gmail.com
Target Group	Students, Academics, Government, Industry
Number of Participants	30

Workshop/ Short Course: WSC09	
Title	Application of Radiogenic Isotopes in Ore Deposit Studies
Resource Persons/ Presenters	Prof. Svetlana Tessalina
Affiliation (s)	Curtin University,
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	svetlana.tessalina@curtin.edu.au
Target Group	Students, Academics, Government, Industry
Number of Participants	30

Workshop/ Short Course: WSC10	
Title	Geoscience in Developing Countries – An European Geoscience Union (EGU) Workshop on Geoscience Information for Teachers (EGU-GIFT)
Resource Persons/ Presenters	1.Prof. Chris King; 2. Prof. Carlo Laj; 3. Prof. Ramanathan Baskar
Affiliation (s)	European Geosciences Union Committee on Education
Schedule	During Congress
Number of Days	Three (03)
Date	To be announced later
Contact	chrisjhking36@gmail.com
Target Group	Secondary School Teachers
Number of Participants	100

Workshop/ Short Course: WSC11	
Title	Understanding Fe-Mn Formations and High Grade Fe-Mn Ores: Origin,
	Controls and Explorations
Resource Persons/ Presenters	Joydip Mukhopadhyay
Affiliation (s)	Presidency University, Kolkata, India
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	joydip17@gmail.com
Target Group	Graduate students and young professionals, especially those working in the minerals industry
Number of Participants	30

Workshop/ Short Course: WSC12	
Title	Redox Proxies for the GOE: the State of the Art
Resource Persons/ Presenters	Prof. Harilaos Tsikos
Affiliation (s)	Rhodes University, South Africa
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	h.tsikos@ru.ac.za
Target Group	Teachers
Number of Participants	100

Workshop/ Short Course: WSC13	
Title	Ground Water, Demand and Supply Management
Resource Persons/ Presenters	1. Dr. S. D. Limaye; 2. Dr. Sudhanshu Sekhar, 3. Dr. Dipankar Saha
Affiliation (s)	Indian National Committee of International Association of Hydrogeologists (INC-IAH)
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	sdlimaye@yahoo.com; sdlimaye@gmail.com;
Target Group	Hydrogeologists
Number of Participants	20

Workshop/ Short Course: WSC14	
Title	Geology, Geochemistry, Genesis and Exploration Criteria for Gold Deposits in Metamorphic Rock.
Resource Persons/ Presenters	Prof. Richard J. Goldfarb
Affiliation (s)	China University of Geosciences, Beijing, China
Schedule	During Congress
Number of Days	One (01)
Date	To be announced later
Contact	rjgoldfarb@mac.com
Target Group	Geologists from Academia and Industry
Number of Participants	40

Business Meetings

Organisations wishing to conduct Business Meetings during the 36th IGC are invited to submit their requirements online only (https://www.36igc.org/business-meetings). Deadline for submission of requests is December 31, 2019. All attendees of Business Meetings must register themselves for the congress.

Business Meetings are scheduled generally 7:00 PM onwards during 3-7 March 2020. However, organisations requiring bookings for the entire day may separately mention the same while applying.

Rooms for Business Meetings will be provided free of charge. Any special room set up, audio-visual and catering requirements etc. have to be taken care of by the meeting organisers themselves.

For any queries related to Business Meetings, please reach us at bm.wsc@36igc.org

Schedule for IUGS-IGCC Business Meetings

Dates	Details
29.02.2020	IUGS Bureau Meeting
01.03.2020	Meeting of the IUGS Executive Committee
02.03.2020	1st Meeting for the IGCC
03.03.2020	IUGS President's Reception
04.03.2020	Meeting of IUGS Affiliated Organisations IUGS Finance and Publication Committee Meeting
06.03.2020 and 07.03.2020	IUGS-IGCC Council Meeting
08.03.2020	Handing over EC Meeting and Introduction of New IUGS Executive Committee
09.03.2019	Meeting for incoming IUGS Executive Committee 2nd Meeting for (incoming) IGCC

Other Business Meetings:

All other Business meetings requests submitted by the other groups shall be published in the final Congress Program.

Field Trips

The Indian subcontinent, by virtue of being a constituent of several older supercontinents, has common geological ancestry with many parts of the globe. Subsequent to the breakup of the Gondwanaland, the Indian landmass moved northward for over 5000 km to collide and get stitched with the Asian landmass, resulting in the present landforms, typified by the Himalayan mountain chain. The subcontinent is also host to a wide range of geological marvels - from the Archaean crustal nuclei to the present day volcanism.

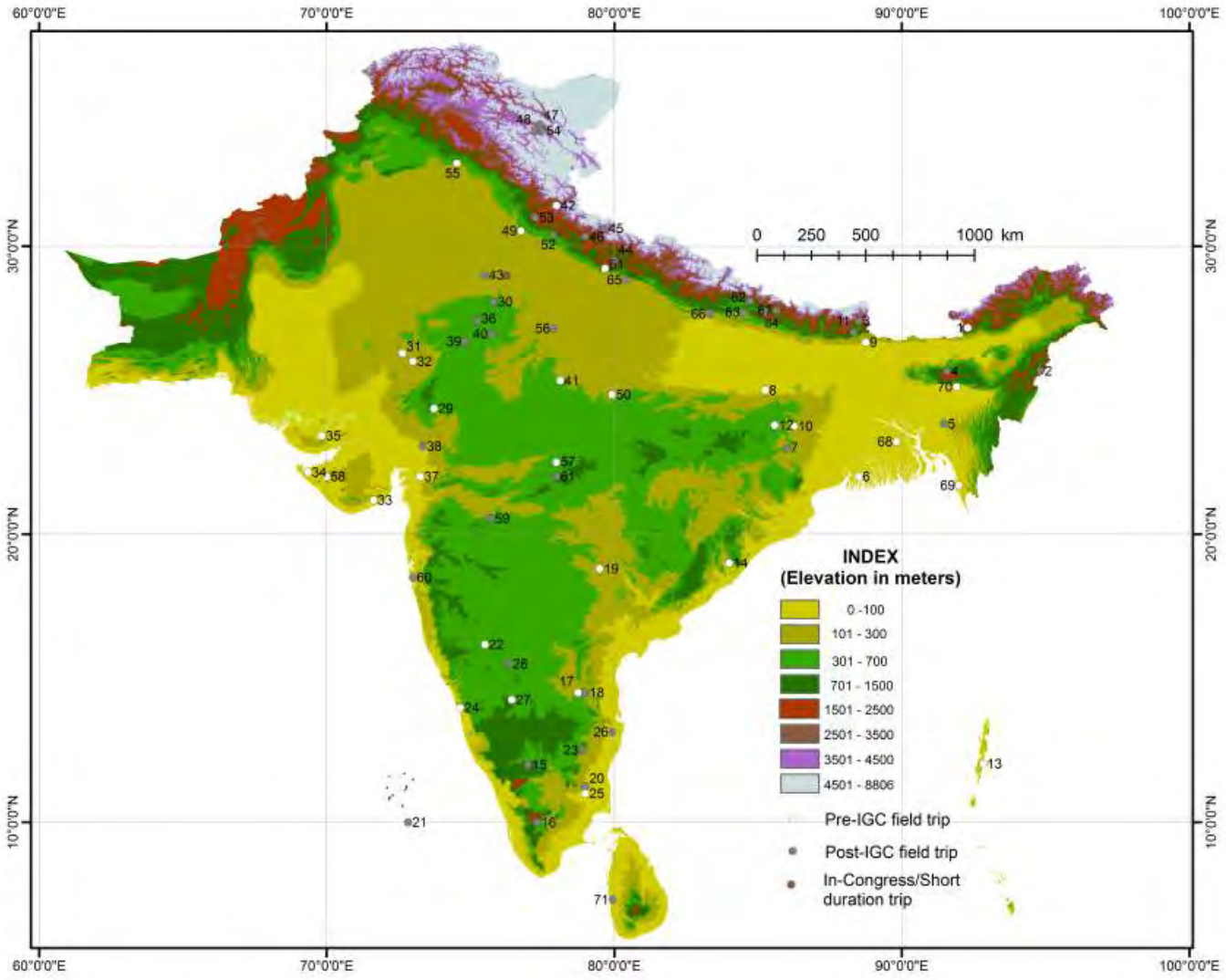
We welcome you to participate in the pre, post and in-Congress field trips to witness the unparalleled geological antiquity of the Indian subcontinent.

Somnath Dasgupta
(Co-chair)

N R Ramesh
(Co-chair)

Field Trip bookings are open to the congress registrants (and accompanying persons). We earnestly request you to go through the Terms and Conditions while booking the field trips.

For Further inquiries please reach us at *fieldtrips@36igc.org .*



Point locations in the above map represent the following field trips (codes):
1 - NER001, 2- NER002, 3- NER003, 4- NER004, 5- NER005, 6- ER001, 7- ER002, 8- ER004, 9- ER005, 10- ER007, 11- ER008, 12- ER009, 13- ER010, 14- ER012, 15- SR003, 16- SR005, 17- SR006, 18- SR007, 19- SR009, 20- SR010, 21- SR015, 22- SR016, 23- SR017, 24- SR018, 25- SR019, 26- SR020, 27- SR021, 28- SR022, 29- WR001, 30- WR002, 31- WR003, 32-WR004, 33-WR008, 34-WR009, 35-WR010, 36-WR011, 37- WR012, 38- WR013, 39- WR014, 40- WR015, 41- NR001, 42- NR003, 43- NR004, 44- NR005, 45- NR006, 46- NR008, 47- NR009, 48- NR010, 49- NR011, 50- NR012, 51- NR013, 52- NR015, 53- NR016, 54- NR017, 55- NR018, 56- NR019, 57- CR001, 58- CR003, 59- CR004, 60- CR005, 61- CR006, 62- INTNP003, 63- INTNP004, 64- INTNP005, 65- INTNP006, 66- INTNP008, 67- INTNP014, 68-INTBG001, 69-INTBG002, 70-INTBG003, 71-INTSL001.

Field Trips Booking

Field Trip bookings are open to congress registrants (and their accompanying persons upon full payment of booking fees). A notional registration fee of USD 175 (one day congress registration fee) is applicable for geoscientists, who wish to participate in the fieldtrips and do not wish to register for the entire period of the congress.

Booking of field trips and congress registration are to be completed by 31 October 2019 in order to participate in the field trips.

Field trips can be booked directly from the 36th IGC website https://www.36igc.org/all-field-trips

In case of queries regarding field trip booking and visa requirements for attending congress and field trips write to us at *fieldtrips@36igc.org*

Participants are required to reach the pickup destination of the field trips and will have to make their travel arrangements to their intended destination after field trip completion.

Accompanying persons: Accompanying persons are required to pay the full cost of the field trip and a registration fee (USD 120 up to 30 November 2019, USD 135 from 01 December 2019 – 31 January 2020 and USD 150 after 01 February 2020).

ER001: *Sundarban Delta System*

This Pre-IGC trip starts at **Kolkata Airport** & ends at **Kolkata Airport**;
Start Date – **25 Feb 2020**; End Date – **1 March 2020**;
Pickup at **17:00 Hrs** & Drop off at **13:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: Debasis Sengupta and Tuhin Ghosh
Other Contributors: Subhasis Roychaudhuri, Subhankar Dutta, Resmi S., Sachin Kumar Tripathi, Bhaskar Majumder, Sugata Hazra and Abhra Chanda

Trip overview: Sundarban Delta, the largest mangrove forest in the world is recognized as Ramsar Site of International Importance since 1992 and was declared as a Natural World Heritage Site in 1997 (UNESCO). It has earned global attention of conservationists, researchers and nature lovers. It has also been recognized as a wetland of international importance. Processes of delta building, erosional and accretional landforms, endanger flora and fauna including variety of mangroves, archaeological evidences (500 to 1500 AD) etc. are few of the things that would be showcased.

Geo-tourism spots: Kapil Muni Ashram, Bakkhali sea beach, Jharkhali forest park, Tiger Rehabilitation Centre, canopy walk at Dobanki, Mangrove Interpretation Centre at Sajnekhali

Additional Info: Meeting Point – Arrival Gate No.1 @Kolkata Airport

ER004: *Rajgir-Bodh Gaya-Barabar Geotourism: A Unique Geological and Historical Heritage of Bihar*

This Pre-IGC trip starts at **Gaya Airport** & ends at **Patna Airport**
Start Date – **26 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **17:00 Hrs** & Drop off at **20:00 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: A. Bishwapriya, Ringphami Awungshi, Asad Ahsan Raza and Shankar Sharma
Other Contributors: S.K. Dutta, M. Ahmad, Debjani Raychaudhuri, Nischal Wanjari and Abdul Qayoom Paul

Trip overview: Roughly falling between Jehanabad, Gaya, Bodh Gaya Rajgir and Nalanda, the region offers an excellent geotourism opportunity wherein geology and archaeology are juxtaposed and complement each other. The area gains its importance worldwide due to historical and cultural aspects related to Buddhism & Jainism, all set within the Gaya-Rajgir volcano-sedimentary belt and associated magmatic complex situated on the northern fringe of Chotanagpur Gneissic Complex (CGC) in eastern India.

Geo-tourism spots: Nalanda Ancient University Ruins, The cyclopean wall, Chariot Mark, Gehlaur : Manhji the Mountain Man, Ghorakatora Lake , Chariot Mark, Barabar caves and other geoarchaeological site, Kuadol :Ancient town site, Buddhist ruins, Rock - cut sculptures; 80 feet Statue of Buddha, Mahabodhi temple and Bodh Gaya Archaeological Museum etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Gaya Airport

ER005: *The Teesta Chronicle: Tectonics – Climate and Human-Landscape Dynamics*

This Pre-IGC trip starts at **Bagdogra Airport** & ends at **Bagdogra Airport**;
Start Date – **27 Feb 2020**; End Date – **02 March 2020**;
Pickup at **15:50 Hrs** & Drop off at **15:15 Hrs**;
Participants: 10 min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Mriganka Ghatak, Sreemati Gupta and Sanjeeb Bhattacharya
Other Contributors: Snigdha Ghatak

Trip overview: Teesta River, the lifeline of eastern Himalayas, has been a popular subject of research from various angles- sedimentation, tectonics, paleoclimate. The Teesta River however, has much more to offer.
This excursion will showcase Teesta basin in its entirety- signatures of active tectonics, sedimentation and paleoclimatic history, community practices in developing Disaster Risk Resilience (DRR) and, signatures of influence of engineering structures on planform of rivers. Traverses from the proximal to distal part of Teesta megafan will demonstrate sedimentary processes, evidences of tectonics and paleoclimatic signatures in the study area. The delegates will be also shown evidences of active tectonism on landforms and engineered structures. The traditional best practices and DRR initiatives of the region will provide valuable information for the disaster management professionals. One of the major geotourism attractions of the excursion will be a ride in the Darjeeling Himalayan Railway, a UNESCO World Heritage site. A visit to one of the leading tea estates will provide a flavor of the world famous Darjeeling tea.

Geo-tourism spots: Darjeeling Himalayan Railway (DHR), a UNESCO World Heritage site/ jungle safari; Tea estates of Dooars; reserve forest.

Additional Info: Meeting Point – Arrival Gate No.1 @Bagdogra Airport

ER007: *Geological Field Excursion to the Jharia Coal field: A Tribute to Sir Cyril Sidney Fox (A legacy of 125 years of Indian Mining and Mineral Industry)*

This Pre-IGC trip starts at **Ranchi Airport** & ends at **Ranchi Airport**
Start Date – **27 Feb 2020**; End Date – **1 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **18:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Sahendra Singh and P. R. Sahoo
Other Contributors: B. C. Sarkar, Atul Kumar Varma and A. S. Venkatesh

Trip overview: The Jharia Coal Field was mapped by Sir Cyril Sidney Fox, fellow of Indian National Science Academy. The coal field contain one of the best exposed sections of the lower Gondwana Formation i.e. Talchir & Barakar within a distance of 0.5 km. Boulder bed overlying the basement, dolerite dykes and lamprophyres are the other interesting features to examine.

Geo-tourism spots: Maithon Dam, Hydel Tunnel on Barakar River, Parasnath Hill/Jain Temple, Longwall Mining at Munidih etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Ranchi Airport

ER009: *Glacial to post-glacial fluvio-marine sedimentation system: Evidences from West Bokaro Coal Field*

This Pre-IGC trip starts at **Ranchi Airport** & ends at **Ranchi Airport**
Start Date – **26 Feb 2020**; End Date – **1 March 2020**;
Pickup at **11:00 Hrs** & Drop off at **19:00 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Hareshwar N Sinha
Other Contributors: Rajeeva Roy, Omnath, D P Singh, Biplab Bhattacharya, Partha Pratim Banerjee, Bipin Kumar, S. K. Sinha and B. A. Kumar

Trip overview: The Lower Gondwana sequence of West Bokaro Coal basin is attributed to the transitional nature of the glacial-fluvial-marine interactive systems in the frame of post-glacial transgressive-regressive (T-R) setup. Such T-R cycles during the Late Paleozoic- Lower Gondwana sedimentation reveals prograding and retrograding successions, sediment-organism interaction pattern, sea level fluctuations, sediment supply and basinal tectonism. The Dudhi River section exposes one of the most well preserved Gondwana successions.

Geo-tourism spots: Surya Kunda, Bodh Gaya, Jhumri-Telaiya Dam etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Ranchi Airport

ER010: *Andaman Islands: An anatomy of the Accretionary Prism in an Active Burma-Andaman – Java subduction zone*

This Pre-IGC trip starts at **Port Blair Airport** & ends at **Port Blair Airport**
Start Date – **25 Feb 2020**; End Date – **01 March 2020**;
Pickup at **11:30 Hrs** & Drop off at **08:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: Tapan Pal and Anindya Bhattacharya
Other Contributors: Sachin Kumar Tripathi, Tarun Koley, Kaberi Banerjee, Biswajit Ghosh and Debaditya Bandyopadhyay

Trip overview: The Andaman ophiolite belonging to the western belt of Indo Burma Ridge (IBR) preserves a complete ophiolite sequence (mantle–cumulates–lavas) in the outer arc of the active Burma- Andaman–Java subduction zone. Its unique polygenetic setting, MORB mantle and supra-subduction zone mantle reveal the intricacies of physicochemical processes of the subduction system.

Geo-tourism spots: Cellular Jail (Light & Sound), Corbyn's Cove beach, Chidiatapu / Mundapahar beach, Ross Island, Wandoor Beach, Mud Volcano and limestone Cave in Baratang, Natural bridge at Neil Island etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Port Blair Airport

Important Information: This field trip belongs to Restricted/ Protected Area (for certain Nationals). Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

ER012: *Eastern Ghats Belt, India: A type locality of ultrahigh Temperature Proterozoic Orogenic System*

This Pre-IGC trip starts at **Vishakhapatnam Airport** & ends at **Vishakhapatnam Airport**
Start Date – **26 Feb 2020**; End Date – **01 March 2020**;
Pickup at **09:00 Hrs** & Drop off at **07:00 Hrs**;
Participants: 7 Min. & 15 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Sankar Bose and Jayanta Kumar Nanda

Trip overview: This transect showcases the occurrences of ultrahigh temperature (UHT) metamorphic rocks along the Eastern Khondalite Zone of the Eastern Ghats Belt (EGB). These rocks preserve complex textural, mineralogical, deformation and chronological history that could be linked to evolution of the supercontinent Rodinia. Key rock occurrences including the different varieties of granulites involving charnockite, khondalite and aluminous granulite will be shown to the geoscientists. These rocks have extensively been studied in the last three decades and unraveled a spectacular history of the lower crust under extreme thermal conditions. This will be a fascinating journey to understand the processes that occurred at the deep underbelly of the superhot orogenic belts during the Meso-Neoproterozoic time.

Geo-tourism spots: Rishikonda Beach, Borra Caves etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Vishakhapatnam Airport

SR006: *Diamond Fields of South India – Wajarakarur Kimberlite Field, Eastern Dharwar Craton, Southern India*

This Pre-IGC trip starts at **Bengaluru Airport** & ends at **Hyderabad Airport**
Start Date – **25 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **08:00 Hrs** & Drop off at **19:00 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: S.Ravi and E.V.S.S.K.Babu
Other Contributors: J. N. Das

Trip overview: Southern India, the land of first diamond finds in the world, consists of both primary and secondary deposits for diamond in Archaean granite-greenstone terrains of Dharwar Craton. It is known to have produced the most celebrated diamonds viz. Koh-i-Noor, Great Mogul, Orloff, etc. The mining activity dates back to 13-18 centuries AD. The trip envisages visiting the some of the kimberlites in the Wajrakarur and Raichur-Tungabhadra Kimberlite Fields, as well as Cuddapah Basin lamproites. Visit to Kimberlite Park and Museum, Geological Survey of India at Wajrakarur (to showcase drill cores and large size samples of kimberlites, mantle xenoliths) and visit to historic diamond mines in the paleo-placers of the Neoproterozoic sediments and the alluvial placers are included in the trip.

Geo-tourism spots: Vijayanagara temple (14th-16th Century AD), Belum Caves etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bengaluru Airport

SR009: *Jurassic Park in P-G Valley*

This Pre-IGC trip starts at **Hyderabad Airport** & ends at **Hyderabad Airport**
Start Date – **27 Feb 2020**; End Date – **01 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **14:45 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: K. Ayyasami, B. Gowtham and P.B. Sarolkar.

Trip overview: The Pranhita-Godavari Basin, India, is a pericratonic basin that came into existence following rifting along eastern Indian Craton in early Mesozoic. The basal Proterozoic rocks of about 6 km thickness are termed as the Godavari Supergroup. Their distribution is widespread on both sides of the Gondwanas with small inliers. The coal-bearing Gondwana sediments includes Talchir, Barakar, Barren Measures, Kamthi (Lower Gondwana Group), Maleri, Kota, Gangapur and Chikiala formations (Upper Gondwana Group). The Maleri and Kota Formations provide the bulk of fossil remains. The Gangapur Formation is a storehouse of plant fossils. The succession terminates with the eruption of volcanic rocks noted in the neighbourhood of Rajahmundry. The infra- and inter-trappean beds offer some of best molluscan remains in this part of the region.

Geo-tourism spots: Kakatiya architecture in Warangal.

Additional Info: Meeting Point – Arrival Gate No.1 @Hyderabad Airport

SR016: *Gravity gliding of Mesoproterozoic Sedimentary Cover of Kaladgi Basin*

This Pre-IGC trip starts at **Hubballi Airport** & ends at **Hubballi Airport**
Start Date – **27 Feb 2020**; End Date – **2 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **15:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Mrinal Kanti Mukherjee, Sohini Das and Sudipto Ghosh

Trip overview: The deformation pattern in the Kaladgi basin during Mesoproterozoic, is unique of its kind in an intracratonic setup. The deformation of the Mesoproterozoic sedimentary cover originated by a southerly-directed gravity gliding of the cover over the basement along the basement–cover contact (unconformity) that served as a surface for detachment shall be demonstrated along a N-S transect across the basin. A continuous passage from extensional domain in the north and contractional domain in the south with a contrast in structural geometry between the unaffected basement and deformed cover shall be showcased.

Geo-tourism spots: Badami cave temple- renowned UNESCO heritage site etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bengaluru Airport

SR018: *Quaternary Evolution of Western Continental Margin of Karnataka-Goa Coasts with emphasis on resources and environment*

This Pre-IGC trip starts at **Mangalore Airport** & ends at **Goa Airport**
Start Date – **26 Feb 2020**; End Date – **01 March 2020**;
Pickup at **07:30 Hrs** & Drop off at **10:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: N. R. Ramesh, K.S. Jayappa and K. R. Subrahmanya
Other Contributors: H. Gangadhara Bhat and V. S. Hegde

Trip overview: A variety of spectacular coastal landforms along the dynamic coastal tract, its' natural resources and scenic beauty shall be visited. St. Mary Group of Islands (National Geological Monuments) exposing remarkable columnar jointed Rhyolitic lava, picturesque table top lateritic uplands, lateritic profiles juxtaposed over the Precambrians and Neogene rocks, misfit rivers, nick points, sea caves, tombolo, abrasion platforms, spectacular spits, pocket beaches are all to be experienced. Quaternary formations of marine, fluvial and aeolian origin and coastal hazards (efficacy of coastal engineering protection) can be readily examined.

Geo-tourism spots: St. Mary's Islands, Yana karst topography and Kudle Beach, Pilikula Nisarga Dhama, wild life & cultural heritage etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Mangalore Airport

SR019: *Resource Survey for Dimension Stone Granite Deposits in granulitic terrain of Tamil Nadu, Southern India*

This Pre-IGC trip starts at **Chennai Airport** & ends at **Chennai Airport**
Start Date – **26 Feb 2020**; End Date **– 02 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **09:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: K. Jayabalan and K. Aravind
Other Contributors: S. B. Vijayakumar, S.N. Mariappan and Hijas Basheer

Trip overview: The state of Tamil Nadu is known for extensive occurrences of granite, charnockite, and bronzite gabbros that are quarried for dimensional stones. The granulitic terrain of Tamil Nadu is studded with several quarries which produce commercially important dimensional stones like Jet/Kunnam Black (equivalent to Ebony black of Sweden), a unique variety like Paradiso, Thippu/ Melur/Kashmir white, Star Galaxy, Tiger skin, Pink/blue Multi, Blue pearl, Colombo/Tropical Juparana, Lady dream, Viyarah, Rosa Verde, Raw silk etc. During the proposed field transacts, different litho units and their equivalent commercial grade, granite landforms will be visited and various aspects of commercial valuation will be discussed.

Geo-tourism spots: : Lady of Lourdes Church, Tiruchirappalli; Rock fort and Srirangam Temple (Chola Architect) Meenakshi Amman Temple (Pandiya Architect) etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Chennai Airport

SR021: *Gold and copper mineralization in Kolar and Chitradurga Schist Belts, Dharwar Craton*

This Pre-IGC trip starts at **Bengaluru Airport** & ends at **Bengaluru Airport**
Start Date – **26 Feb 2020**; End Date **– 01 March 2020**;
Pickup at **06:30 Hrs** & Drop off at **18:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: N. Rajendran, V. N. Vasudev and R. H. Sawkar
Other Contributors: H. M. Ramachandra

Trip overview: Neoarchaean metallogenic provinces of polymetallic and gold mineralization of Chitradurga and Kolar Greenstone belts of west and east Dharwar Cratons will provide an opportunity to study the geological and structural set up of the mineralisation and exploration methodologies.

Geo-tourism spots: Geological monument of pillow lava; heritage sites of pre-historic Chandravalli caves near Chitradurga, Chitradurga fort etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bengaluru Airport

WR001: *Palaeoproterozoic Lead-Zinc-Coper Sulphide Metallogenesis in Aravalli-Delhi Orogenic Belt, South Central Rajasthan*

This Pre-IGC trip starts at **Udaipur Airport** & ends at **Jaipur Airport**
Start Date – **26 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **15:00 Hrs** & Drop off at **22:10 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Shubhabrata Mukhopadhyay and Sunil Vashisht
Other Contributors: S.K. Rajput, Abhisek Anand, Rajuram Saraswat, Amit Srivastava, Manideepa Roy Choudhury, Akanksha Joshi, Reenika, R.P. Dashora, Ranjan Gupta, K. C. Meena, Gaurav Mathur and Rajesh Kundu

Trip overview: This trip will focus on medium to large lead, zinc and silver ore deposits that occur in diverse tectonic settings such as in the Palaeoproterozoic Aravalli Supergroup (Zawar) and intra-cratonic metasedimentary belts at Rajpura-Dariba and Agucha. The three main deposits at Zawar in the south of Udaipur, Rajpura-Dariba-Sindesar in the north of Udaipur and Agucha in Rajasthan, cumulatively constitute over 400 million tonnes of stratiform Pb-Zn ores of economic significance.

Geo-tourism spots: Udaipur lake city, 2500 years old ancient zinc smelting sites at Zawar etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Udaipur Airport

WR003: *Neoproterozoic Magmatism and Tectonics of NW Indian Block: Tracing the Rodinia Break-up*

This Pre-IGC trip starts at **Jodhpur Airport** & ends at **Udaipur Airport**
Start Date –**24 Feb 2020**; End Date – **01 March 2020**;
Pickup at **15:00 Hrs** & Drop off at **19:00 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: M. K. Pandit and K. K. Sharma

Trip overview: The Neoproterozoic Malani Igneous Province (MIP) and Erinpura Granites in western India constitute a major igneous terrain that occurs to the immediate west of the Aravalli Mountain Range. The MIP is dominated by ~750 Ma old rhyolitic flows and tuffs that occupy about 50,000 sq. km. expanse in the desertic terrain of western India. This magmatic terrain has implications for Rodinia fragmentation, Neoproterozoic geodynamics and paleoposition of NW India.

Geo-tourism spots: Mahendragarh Fort and Mount Abu etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Jodhpur Airport

WR004: *Thar Desert - its Evolution and Geoheritage*

This Pre-IGC trip starts at **Jodhpur Airport** & ends at **Jodhpur Airport**
Start Date – **24 Feb 2020**; End Date – **01 March 2020**;
Pickup at **16:00 Hrs** & Drop off at **10:30 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: S. K. Wadhawan, S.C.Mathur and P. C. Mohrana
Other Contributors: V. S. Parihar, S. L. Nama and Shiv Singh Rathore

Trip overview: The Thar Desert, located at West Rajasthan Shelf [WRS], occupies a unique tectonic-sedimentary domain in north-western India. The desert represents one of the most thickly populated dry land environments of the world. Thar Desert has several unique features and distinctive Neogene continental geological basin configurations. A large variety of characteristic golden sand dune fields ranging from clustered parabolic to transverse, linear, reticulate, star and barchanoid have been mapped across the vast span of the Thar Desert. The Malani Igneous Province and sediments of Marwar, Jaisalmer and Barmer Basins are endowed with many remarkable geoheritage sites. The Jodhpur and Jaisalmer cities are famous tourist destinations of India.

Geo-tourism spots: Jodhpur-'Sun City' (Mehrangarh Fort, Jaswant Palace, National Geological Monuments, Rao Jodha Rock park, Umed Palace and Kayalana Lake), Jaisalmer- 'Golden City' (Desert national park, Sam Desert, Golden Fort, Gadhisar lake, Bada Bagh and palaces) within Thar Desert etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Jodhpur Airport

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

WR008: *Quaternary Miliolitic Limestone of Saurashtra*

This Pre-IGC trip starts at **Ahmedabad Airport** & ends at **Ahmedabad Airport**
Start Date – **25 Feb 2020**; End Date – **01 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **16:00 Hrs**;
Participants: 15 Min. & 35 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: K. S. Misra and Nilesh Bhatt

Trip overview: The biogenic carbonate deposits of Late Quaternary age are widespread along the tropical and the sub-tropical coast around the globe, and are used to define the history of Quaternary sea level change in Bahamas and Bermuda. In Indian context these rocks occur along the Gujarat coastline, particularly along Saurashtra. These deposits are well studied for its clues to the sea level changes and local tectonics during 120 to 40 ka.

Geo-tourism spots: Mahatma Gandhi's birthplace Porbandar, Buddhist caves, Portuguese fort, coastal geomorphosites at Diu and Asiatic lion sanctuary etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Ahmedabad Airport

WR009: *A walk on Mars : Jarosite localities of Kachchh, India*

This Pre-IGC trip starts at **Ahmedabad Airport** & ends at **Ahmedabad Airport**
Start Date – **25 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **08:00 Hrs** & Drop off at **08:00 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Satadru Bhattacharya and Souvik Mitra
Other Contributors: Saibal Gupta, Santanu Banerjee and Ramananda Chakrabarti

Trip overview: This trip to Kachchh, western India, showcases the occurrence of the hydrous sulphate mineral, jarosite, widely reported from the surface of Mars but rare in natural terrestrial localities, in various horizons of a Cenozoic succession.
Geo-tourism spots: White desert (Rann of Kachch); Dholavira (world's oldest civilisations -Harappan locality) etc.
Additional Info: Meeting Point – Arrival Gate No.1 @Ahmedabad Airport

WR010: *Stratigraphic Architecture and Palaeo-environments in the Kachchh Rift Basin during the Jurassic*

This Pre-IGC trip starts at **Ahmedabad Airport** & ends at **Ahmedabad Airport**
Start Date – **24 Feb 2020;** End Date **– 1 March 2020;**
Pickup at **08:00 Hrs** & Drop off at **08:00 Hrs;**
Participants: 20 Min. & 35 max.; **Duration:** 6 Nights & 7 days;
Trip coordinators: Dhirendra Kumar Pandey
Other Contributors: Debahuti Mukherjee, Franz. T. Fürsich, Matthias Alberti and Gaurav Chauhan

Trip overview: Kachchh is a pericratonic rift basin at the western margin of the Indian Craton. It was situated in the northern Malagasy Gulf and was part of the Indo-East African faunal province. The basin is characterized by a Jurassic succession representing environments and the biodiversity of the southern margin of the Tethyan Ocean. This succession with its very diverse and well-preserved fossil record made Kachchh one of the key localities for studying the Jurassic stratigraphy and biota of Gondwana. The trip will include visits to the most important outcrops and stratigraphic units for understanding the evolution of palaeoenvironments and biota of the basin during the Jurassic time interval.

Geo-tourism spots: Great Rann of Kachchh, Pachchhmaipir Temple and viewpoint, temples and palaces in Bhuj, etc.
Additional Info: Meeting Point – Arrival Gate No.1 @Ahmedabad Airport

WR012: *Late Quaternary Continental Sequences of Gujarat, Western India: an Appraisal of Climatic, Tectonic and Eustatic Processes*

This Pre-IGC trip starts at **Vadodara Airport** & ends at **Vadodara Airport**
Start Date – **26 Feb 2020**; End Date **– 29 Feb 2020**;
Pickup at **09:00 Hrs** & Drop off at **16:00 Hrs**;
Participants: 7 Min. & 15 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: D. M. Maurya, L. S. Chamyal and Alpa Sridhar

Trip overview: The field trip covers semi-arid belt of Gujarat state in western India. Near complete continental records dating back to ~125 ka B.P. are exposed in 30-50 m high river cliffs of Mahi, Narmada and Sabarmati rivers. The distinct sedimentary facies, aggradation and incision phases show complex interaction between fluvial, marine, aeolian and tectonic processes.

Geo-tourism spots: Pavagarh, Champaner (UNESCO heritage site), Lothal, Rani ki Vaav- step well etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Vadodara Airport

NR001: *Dhala Structure, India- a Palaeoproterozoic Complex Impact Crater*

This Pre-IGC trip starts at **Khajuraho -Airport** & ends at **Jhansi Railway Station;**
Start Date – **27 Feb 2020**; End Date – **01 March 2020**;
Pickup at **12:25 Hrs** & Drop off at **17:30 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Jayanta Kumar Pati and Kuldeep Prakash

Trip overview: The Dhala impact structure covers nearly 64 sq km in parts of Shivpuri district, Madhya Pradesh in north-central India. It is the seventh oldest impact structure with possibly the oldest known suevite deposit in the world. Despite the deep level of erosion and post-impact tectono-thermal events, the impactites are exceedingly well preserved, with nearly all shock metamorphic features. The impact melt breccia is exposed on surface over a strike length of about 6 km but suevite has only been identified in drill core. Granitoids with high- and low strain zones of Archaean age (2,500-3,600 Ma) are the prevalent country rocks.

Geo-tourism spots: Khajuraho Temple-a UNESCO World heritage site etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Khajuraho Airport

NR003: *Archives of Late Quaternary Climate Fluctuations in Satluj valley, Himachal Pradesh*

This Pre-IGC trip starts at **Chandigarh Airport** & ends at **Chandigarh Airport**
Start Date – **26 Feb 2020**; End Date **– 1 March 2020**;
Pickup at **11:00 Hrs** & Drop off at **13:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Md. Atif Raza and Sharat Dutta
Other Contributors: Dr. R.V.Chunchekar, Ms. R. Bhavani, Dr. H.S. Saini and Shri S.A.I. Mujtaba

Trip overview: Satluj River valley lies in the northwestern limits of Indian Summer Monsoon (ISM) tract and is in climatically sensitive zone with humid (along Himalayan front), sub-humid (middle reaches of the valley), to high altitude arid conditions (upper reaches) depending on structurally controlled topographic fronts posing orographic barriers to moisture laden monsoon winds. The Satluj valley is important to address and study Late Quaternary climatic fluctuations. The higher reaches of Himalayas with special reference to late Quaternary climatic archives in selected segments of Satluj and Baspa valleys shall be showcased.

Geo-tourism spots: Monasteries, temples, Sangla valley etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Chandigarh Airport

NR011: *Siwalik vertebrates and Siwalik Fossil Park, Saketi (Himachal Pradesh)*

This Pre-IGC trip starts at **Chandigarh Airport** & ends at **Chandigarh Airport**
Start Date – **28 Feb 2020**; End Date – **01 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **09:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: Rajeev Patnaik, Hemant Kumar and R. S. Chandel

Trip overview: The Siwalik rocks embody in the form of fossils, the varied flora and fauna that thrived during the middle Miocene to Early Pleistocene. The vertebrate fossil rich Markanda valley can be examined for the whole package of rocks from Lower Siwalik subgroup (Nahan Formation) to Upper Siwalik subgroup (Kalar Formation = Lower Boulder Conglomerate). Siwalik Fossil park at Saketi displays around 300 fossil vertebrate specimens in the museum (a catalogue has been published by Geological Survey of India in 2013).

Geo-tourism spots: Siwalik Fossil Park, Saketi, dist. Sirmaur H.P; Dinosaur museum & Rock Garden, Chandigarh; Pinjore Gardens, Pinjor (Haryana) etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Chandigarh Airport

NR012: *Field Workshop on Vindhyan Supergroup*

This Pre-IGC trip starts at **Varanasi Airport** & ends at **Khajuraho Airport**
Start Date –**20 Feb 2020**; End Date – **01 March 2020**;
Pickup at **1500 Hrs** & Drop off at **1300 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 10 Nights & 11 days;
Trip Coordinators: Mukund Sharma
Other Contributors: Santosh Kumar Pandey and Prof. Surendra Kumar

Trip overview: The Vindhyans of the Son Valley are the most interesting geological succession for discussing the global stratigraphic and palaeobiological riddles. The field workshop would cover the entire succession of the Vindhyan Supergroup from the base to the top. In depth studies are published and it is also logistically easily accessible. Important aspects of geological interest include Palaeoproterozoic phosphatic stromatolites of Chitrakoot area, thick porcellanite Formation, spirally coiled algal fossils Grypania, and advanced carbonaceous remains of Bhander Group.

Geo-tourism spots: Chitrakoot, Khajuraho etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Varanasi Airport

NR013: *Paleoseismology along the Foothill Zone of Central Himalaya, Uttarakhand, India*

This Pre-IGC trip starts at **India Expo Mart** & ends at **India Expo Mart**
Start Date – **25 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **09:00 Hrs** & Drop off at **00:30 Hrs**;
Participants: 7 Min. & 15 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: R. Jayangonda Perumal and Javed N. Malik
Other Contributors: V.C. Thakur, Priyanka Singh Rao, Ishwar Singh, Arjun Pandey, M.S. Gadhavi, Santiswarup Sahoo and Pankaj Baghel

Trip overview: The excursion showcase a geological setting across Sub Himalayan frontal fold thrust belt and over thrust Lesser Himalayan sequence. The main focus will be on study of active faults and associated geomorphic landforms marked by lateral-propagation of fault related folding, and deflection - migration of rivers. Excavated trenches across the surface rupture (late Medieval time) associated with great paleo-earthquake along the Himalayan Frontal Thrust (HFT) or Main Frontal Thrust (MFT) will be demonstrated.

Geo-tourism spots: Geo-Archaeological site etc

Additional Info: Gate No.1 @ India Expo Mart

NR018: *The Chenab Arch Bridge: Engineering Marvel (CANCELLED)*

CR001: *A Magnificent Trail to Gondwana Geology, Nature and Heritage: Satpura Basin of Central India*

This Pre-IGC trip starts at **Nagpur Airport** & ends at **Bhopal Airport**
Start Date – **27 Feb 2020**; End Date **– 02 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **14:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Vijay V. Mugal and R.G. Khangar
Other Contributors: Tapan Chakraborty, Srikantamurthy, Md. Merajuddin Khan and Savita N. Chaurpagar

Trip overview: The Satpura Basin in Central India is unique among all the Indian Gondwana basins by having the longest range of stratigraphic record spanning from Upper Carboniferous to Cretaceous. It is the westernmost Gondwana basin that is located over the Central Indian Tectonic Zone (CITZ) and forms an ENE–WSW trending linear tract between Son–Narmada North Fault in the north and Central Indian Shear Zone in the south. The basin is approximately 200km long and 60km wide and is believed to be originated as pull-apart basin due to extension related to strike-slip movement along Son-Narmada Lineament. The Field trip proposes a journey of nearly 200 Ma across Satpura basin to show stunning sedimentological features of entire Gondwana sequence of nearly 5km thickness, from early Permian Talchir Formation to Lower cretaceous Jabalpur Formation.

Geo-tourism spots: Patalkot valley, Pachmarhi hill station, Satpura National Park, Bhimbetka caves and Sanchi Buddhist Stupa etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Nagpur Airport

CR003: *Monogenic Alkaline Lava Flow Fields in Deccan Traps- Kachchh & Saurashtra*

This Pre-IGC trip starts at **Bhuj Airport** & ends at **Ahmedabad Airport**
Start Date –**24 Feb 2020**; End Date – **29 Feb 2020**;
Pickup at **15:00 Hrs** & Drop off at **17:45 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: Raymond A Duraiswami and Nitin R. Karmalkar
Other Contributors: Purva Gadapallu

Trip overview: : The Kachchh-Saurashtra in western India is an important and distinctive sub-province of the Deccan Volcanic Province. It exposes monogenetic volcanic cones that host mantle xenoliths, acidic igneous complexes and tholeiitic dykes, sills and lava flows. The area is of interest to Earth scientists working in diverse fields like mantle petrology, physical volcanology, geochemical evolution of CFBs, K-Pg mass-extinctions, etc.

Geo-tourism spots: : Great Rann of Kutch, Lothal – Indus Valley Civilization port, Aaina Mahal and Bhujia Fort etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bhuj Airport

INTBG001: Environmental Geology and Delta-Building Processes at the Mangrove Forest (Sundarbans)

This pre-IGC trip starts and ends at Sundarbans (along Delhi-Dhaka-Jessore route);
Participants: 90 max.; **Duration:** 4-5 days;
Trip Coordinator: Director General, Geological Survey of Bangladesh

Trip overview: The Sundarbans is a vast mangrove forest in the coastal region in and around the delta of the Ganges, Brahmaputra and Meghna rivers at the Bay of Bengal. It was recognised in 1997 as a UNESCO World Heritage Site. Located at the south western part of Bangladesh, it is a cluster of islands with an approximate area of 3600 sq. km. forming the largest block of littoral forests with diversified assemblage of flora and fauna. Geoscientists will get the opportunity to experience active delta building processes, its complex network of tidal waterways, mudflats and small islands of salt-tolerant mangrove forests that presents an excellent example of ongoing ecological processes.

Geo-tourism spots: Sunderbans - a UNESCO World Heritage Site and the habitat of the Royal Bengal tiger.

INTBG002: Environmental & Quaternary Geology with Coral Island (St. Martin's Island) Cox's Bazar - St. Martin's Island

This pre-IGC trip starts and ends in and around the **Cox's Bazar;**
Participants: 100 max.; **Duration:** 4-5 days;
Trip Coordinator: Director General, Geological Survey of Bangladesh

Trip overview: Cox's Bazar is sandy beach with an unbroken length of 155 km making it the longest natural sea beach in the world. The sand at Cox's Bazar beach and surrounding areas is rich in heavy-metal mineral content. St. Martin's Island is a small island in the northeast part of the Bay of Bengal, about 9 km south of the tip of the Cox's Bazar-Teknaf Peninsula. It is the only coral island in Bangladesh.

Geo-tourism spots: Himchari, Inanai, Maheshkhali etc.

INTBG003: Geological Exposure of Bangladesh (Sylhet)

This pre-IGC trip starts and ends at **Sylhet** (Delhi-Dhaka-Sylhet route)
Participants: 100 max.; **Duration:** 5 days;
Trip Coordinator: Director General, Geological Survey of Bangladesh

Trip overview: Sylhet, located in the northeastern region of Bangladesh has a complex having diverse sacrificial geomorphology; high topography of Plio-Miocene age such as Khasi and Jaintia hills and small hillocks along the border. At the centre there is a vast low lying flood plain of recent origin with saucer shaped depressions, locally called Haors. Sari River section presents an excellent geological section for the Neogene (Mio-Pliocene) sequence in northeastern Bangladesh.

Geo-tourism spots: Jaflong, Sari river, Madhablunda etc.

NR020: Title: Qutub and Himayun Tom Complex (Delhi): UNESCO world heritage sites

This in-Congress IGC trip starts and ends at **Delhi**;
Start Date – **07 March 2020**; End Date **– 07 March 2020**;
Pickup & Drop off at: India Expo Mart, NCR
Participants: 30 Min. & 50 max; **Duration:** 1 day;
Trip coordinators: Ms. Gurmeet Kaur and Dr. Fareeduddin
Other contributors: Jaspreet Saini and Parminder Kaur

Trip overview: The one day trip showcases three main natural stones used for construction of most outstanding UNECO heritage monuments of Delhi. These are (i) Red Sandstone; (ii) Delhi quartzite and (iii) White marble, all the three stones belonging to Aravalli Mountain Range.

Geo-tourism spots: Qutub Complex, Humayu Complex

Additional Info: Meeting Point – Gate No.1 @ India Expo Mart

NR021: Title: Tectonic configuration of Siwalik Belt and unfolding structural evolution of Siwalik fold-thrust belt in Kala Amb-Nahan area, Sirmaur distt., Himachal Pradesh

This In-Congress IGC trip starts and ends at 07 M;
Start Date – **27 Feb 2020**; End Date **– 02 March 2020**;
Pickup & Drop off at: India Expo Mart, NCR
Participants: 30 Min. & 50 max; **Duration:** 1 day;
Trip coordinators: Manoj Kumar;
Other contributors: Rajinder Kumar, Pradeep Singh and Kundan D. Rangari;

Trip overview: This sector of Himachal Himalaya is one of the detailed worked out stretches as far as the studies of Siwalik litho-sequence, part of Foreland Basin sediments ranging in age from the Thanetian to Pleistocene and associated thrusts like MBF, Nahan Thrust and HFT and associated palaeo-seismic events, are concerned. Thus, the proposed transact portrays the complete tectonic evolution of the Himalayas through a narrow corridor of Siwalik tectonic configuration depicting the new concept of structural evolution of Himalayas and is bound to attract the academician, geomorphologist, structural & tectonics including Neotectonics, seismologist etc.

Geo-tourism spots: Renuka ji, Adi Badri Temple, Nahan City, etc.

Additional Info: Meeting Point – Gate No.1 @ India Expo Mart

WR016: Title: Visit to Surat Diamond Industry

This in-congress trip starts at **New Delhi** and ends at **New Delhi**.
Start Date – **03 March 2020**;End date- **04 March 2020**;
Pickup & Drop off at: India Expo Mart, NCR
Participants: 20 Min. & 30 max. **Duration:** 1 Nights & 2 days
Trip coordinators: S. Ravi and J.N. Das
Other Contributors: E.V.S.S.K. Babu and Sufija. M.V

Trip overview: Diamond production in India can be traced back to almost 8th century B C. World famous diamonds such as Koh-i-noor, The Orloff, The Great Mogul, Sancy Hope, Florentine, Nassak, Regent, Pitt, Nizam etc. were the products of India and many of these world famous diamonds were recovered from India in 16th & 17th centuries.
The Gems & Jewellery industry in India is structured as diamonds, jewellery and precious/semi precious stones. In India, the diamond processing units are mainly located in Gujarat, particularly in Surat, Navsari and some parts of Saurashtra & north Gujarat region. About 80% of country's diamond processing work is being done in Gujarat, out of which more than 50% is conducted at Surat only. The diamond processing industry in India, thus, is quite unique as it is developed at one location in an industrial cluster. Surat city is known as diamond city of India. The modern diamond cutting and polishing industry started way back in the early 1960s when some entrepreneurs belonging to the Patel community of Saurashtra started importing rough diamonds and exporting polished diamonds. This industry grew gradually until 1980s after which there was rapid growth. This rapid growth was the result of the proximity of Surat to Mumbai which helps in importing the unfinished diamonds and exporting the polished diamonds.

Geo-tourism spots: World's largest Diamond Lapidary Industry & Retail Diamond Jewellery Centre etc.

Additional Info: Meeting Point – New Delhi Airport

NER001: *29.28.NER001: Geodynamic evolution of Northeastern Himalayas: Traverse along Tezpur-Bomdila-Tawang section Assam and Arunachal Pradesh (CANCELLED)*

NER002: Nagaland Ophiolite Complex: Type locality for Intra-Oceanic Subduction within the Neo-Tethys

This Post-IGC trip starts & ends at **Dimapur, Nagaland**;
Participants: 20 max.; **Duration:** 6 days;
Trip Coordinators: Santanu Kumar Bhowmik and Aliba Ao
Other contributors: Tapan Pal, K. V. Theunuo, Krittibas Das, Maya Rajkakate

Trip overview: The Nagaland Ophiolite Complex (NOC) is one of the rare ophiolite belts in the world where high-pressure metamorphic rocks along clockwise and counter-clockwise metamorphic P-T paths occur in close spatial associations but in two different metamorphic sequences. This is the only metamorphic belt in the Indus-Yarlung-Tsangpo-Suture Zone where the history of the full cycle of Neo-Tethys evolution from subduction to end of the subduction cycle, as manifested by collisional tectonics and ophiolite emplacement is preserved in the rock archive.

Geo-tourism spots: Naga heritage village, Kohima etc.

NER003: *A Glimpse of the Enigmatic Himalayan Inverted Metamorphic Sequence: A Classic Section across the Darjeeling-Sikkim Himalayas*

This Post-IGC trip starts at **Bagdogra Airport** & ends at **Bagdogra Airport**
Start Date – **9 March 2020**; End Date **– 13 March 2020**;
Pickup at **15:00 Hrs** & Drop off at **08:30 Hrs**;
Participants: 10 Min. & 25 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: Ravikant Vadlamani, Sudipto Neogi and Kathakali Bhattacharyya
Other Contributors: Om Prakash Kaptan and Asit Kumar Swain

Trip overview: Himalayan tectonics and metamorphism has been largely considered within the framework of the collision and subduction of the Greater Indian plate with the Eurasian plate during the Eocene (~ 50 Ma), resulting in intense crustal shortening and deformation, accommodated by intracontinental thrusts and internal deformation of Greater Indian plate. Causes for the metamorphism in abnormally thickened crust has been addressed involving thermal modelling, field studies, quantitative P-T estimation, geochronological and isotopic studies. An enigmatic feature of Himalayan metamorphism is the presence of a sequence of progressively higher grade rocks occurring at shallower structural levels, reported from the Darjeeling- Sikkim region, and later described with remarkable similarity from all along the nearly 2000 km length of the Himalaya referred to as "inverted" metamorphism.

Geo-tourism spots: Lachung, Yumthang valley, Lachen etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bagdogra Airport

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

NER004: *Tectonic Evolution of NE Indian Craton, Meghalaya Plateau: Journey from Pre-Grenvillian - Grenvillian Orogeny to Pan-African Orogeny and Gondwana break-up*

This Post-IGC trip starts at **Guwahati Airport** & ends at **Guwahati Airport**
Start Date – **09 March 2020**; End Date – **12 March 2020**;
Pickup at **15:55 Hrs** & Drop off at **17:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Tapan Pal, Shri. D.V. Whuorie
Other contributors: M.A. Khonglah, K. Thenunuo, Debahuti Mukherjee, B.N. Mahanta, N. Surdas Singh and Pulak Sengupta

Trip overview: Meghalaya Plateau is a part of the Eastern Indian shield since the Mesoproterozoic time. It preserves signatures of major global events ranging from Rodinia assembly to Gondwana assembly, Gondwana break-up, K-T boundary. Tertiary limestone of Meghalaya Plateau also records Paleocene-Eocene Thermal Maxima (PTEM) event. Relatively less known North East Indian craton is an area to explore Pan Gondwana reconstruction.

Geo-tourism spots: Meghalaya- "The Abode of Clouds", Mawsynram (heaviest rainfall receiving area), caves and magnificent waterfalls, Mumluh cave, Cherrapunjee- GSSP for Meghalayan age etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Guwahati Airport

NER005: *Unfolding of Quaternary History and Associated Geoarchaeological Remains of Tripura, Northeastern India*

This Post-IGC trip starts at **Agartala Airport** & ends at **Agartala Airport**
Start Date – **9 March 2020**; End Date **– 14 March 2020**;
Pickup at **15:00 Hrs** & Drop off at **08:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: N. R. Ramesh and Manjil Hazarika, B. C. Poddar
Other Contributors: Biswajit Dev Barma and Salim Javed

Trip overview: Intermontane Khowai and Haora valleys in Tripura have extensive outcrops of older Quaternary fluvial deposits, developed as terraces. They contain buried, multi-layered, prolific Stone Age sites with abundant exquisite artefacts of fossil wood, discovered in a unique stratigraphic framework. Pleistocene valley sediments laid over deformed Neogene sedimentary sequences are also deeply incised. Integrated study on environmental setting of cluster/pattern of sites and their radiometric dating have led to prove habitation of late Pleistocene early man in a region stretching from Bengal basin to Irrawaddy valley. Evolution of human culture in sync with evolution of river valleys is well demonstrated here. The traverse aims at examining the geo-archaeological context of the sites based on morpho-stratigraphy, litho-stratigraphy and chrono-cultural stratigraphy and unique nature of prehistoric tool assemblages.

Geo-tourism spots: Geo-archaeological sites in Khowai Valley, Unakoti rock-cut sculptures etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Agartala Airport

ER002: *Proterozoic Gold Mineralizing System in North Singhbhum Mobile Belt*

This Post-IGC trip starts at **Ranchi Airport** & ends at **Ranchi Airport**
Start Date – **9 March 2020**; End Date – **12 March 2020**;
Pickup at **11:00 Hrs** & Drop off at **19:00 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Pankaj Kumar and Sahendra Singh
Other Contributors: Arun Kumar Kujur, Sushanta Layek, Abhishek Das and Rajarshi Chakravarti

Trip overview: The Paleo- to Mesoproterozoic North Singhbhum Mobile Belt (NSMB) in eastern India has a long and significant history of gold exploration activities with recent finding of many small gold deposits. The NSMB has two prominent crustal scale shear zones in its northern and southern parts. The region is well known for the numerous ancient gold working and abandoned gold mines apart from a long history of the gold panning activities in the Subarnarekha River and its tributaries.

Geo-tourism spots: Jonha, Hundru, Dasam fall, Dalma Wildlife Sanctuary etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Ranchi Airport

ER008: *Landslide failure mechanisms, hazard and risk scenarios in Darjeeling Himalayas*

This Post-IGC trip starts at **Bagdogra Airport** & ends at **Bagdogra Airport**
Start Date –**09 March 2020**; End Date – **13 March 2020**;
Pickup at **16:00 Hrs** & Drop off at **09:30 Hrs**;
Participants: 15 Min. & 30 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Saibal Ghosh and Timir Baran Ghoshal
Other Contributors: Tamoghno Ghosh and Rabisankar Karmakar

Trip overview: The proposed fieldtrip area is part of the active Himalayan Fold-Thrust-Belt (FTB) where interplay of varied geological factors vis-a- vis rapid urbanization and growth are responsible for initiating different types of landslides for over a century. The varied landslide failure mechanisms and their intimate relationships with a series of varied Himalayan lithology and regional tectonic structures and the interactions of landslide hazards with thick settlement and built-up areas in the Darjeeling Himalayas would be showcased with added measures for evaluating risk.

Geo-tourism spots: UNESCO World Heritage Site- Darjeeling-Himalayan Railway; Tea Gardens etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bagdogra Airport

SR003: *The Deep Crust of the Archaean Dharwar Craton*

This Post-IGC trip starts at **Bengaluru Airport** & ends at **Coimbatore Airport**
Start Date – **10 March 2020**; End Date – **15 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **16:30 Hrs**;
Participants: 10 Min. & 18 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: C. Srikantappa, K.G. Ashamanjari and K. N. Prakash Narasimha

Trip overview: Granite-greenstone belts and granulite-gneiss terrain are well exposed in the Archaean Dharwar Craton (3.5- 2.5 Ga, DC). The rocks show regional metamorphism with pressures of 6 to 11 k bars and temperatures of 650 to 820oC. The Dharwar Craton (DC) is bounded to the South by the E-W trending Moyar-Bhavani shear zone, where the lower continental crust is extensively reactivated during the Pan-African event (~ 0.5 Ga). Archean metasedimentary units, chromitite bearing layered igneous complexes, two different types of granulites, incipient charnockite formation, it's structures, and geochemical signatures shall be examined.

Geo-tourism spots: Waterfalls, Mysore Maharaja Palace, Ancient Hindu temple architecture, Tiger reserve forest, Nilgiri mountains etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bengaluru Airport

SR005: *Neoproterozoic -Early Cambrian Crustal Evolution in south India: Implications of east Gondwana Assembly*

This Post-IGC trip starts at **Tiruchirapalli Airport** & ends at **Trivandrum Airport**
Start Date – **09 March 2020**; End Date – **14 March 2020**;
Pickup at **09:00 Hrs** & Drop off at **12:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: N.P. Nathan, S. Raju and T.R.K. Chetty
Other Contributors: Mathew Joseph, R. Vijay Kumar, S. Balakrishnan, V. Kumaravel, H. Naik, R. Ram Prasad and others

Trip overview: The Granulite Terrain of Southern India is selected to showcase the Neoproterozoic-Early Cambrian crustal evolution events encompassing the accretionary tectonics, metamorphic, magmatic episodes (Ophiolites) and the kinematics of the major shear zones for understanding the East Gondwana assembly. Palghat-Cauvery Shear Zone (PCSZ) and Neoproterozoic mobile belt extending up to the southern tip of Indian Peninsula will be covered during this excursion.

Geo-tourism spots: Meenakshi Temple, Kodaikanal hill station, Rock memorial at Kanyakumari, Kovalam beach etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Coimbatore Airport

SR007: *A journey from Paleo to Neoproterozoic; Sedimentation, Magmatism and Mineralization in the Cuddapah Basin, India*

This Post-IGC trip starts at **Tirupati Airport** & ends at **Hyderabad Airport**
Start Date –**09 March 2020;** End Date **– 13 March 2020;**
Pickup at **10:00 Hrs** & Drop off at **14:30 Hrs;**
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: V.V. Sesha Sai and S. Bhattacharjee
Other Contributors: Dr. Vikash Tripathy

Trip overview: The Proterozoic Cuddapah basin in the eastern Dharwar Craton is a prominent Precambrian sedimentary basin in India that has well-preserved clastic and non-clastic sedimentary sequences. It witnessed significant magmatic activity during sedimentation. Evidences for the Palaeoproterozoic life in the form of stromatolites; organo-sedimentary structures are well preserved in the Vempalle Formation of the Cuddapah Supergroup. The Neoproterozoic Kurnool basin consists of a sequence of rudaceous-arenaceous-argillaceous-carbonate rocks. The well-known Banaganapalle conglomerate horizon; the lower Formation in the Kurnool Group is known for ancient diamond activity in India. The proposed field traverses include best exposed type sections in the basin.

Geo-tourism spots: Natural Arch of Tirumala, Belum caves etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Tirupati Airport

SR010: *Cretaceous Stage Boundaries*

This Post-IGC trip starts at **Chennai Airport** & ends at **Chennai Airport**
Start Date – **09 March 2020**; End Date – **13 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **18:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: K. Ayyasami and B. Gowtham

Trip overview: The Talchir Formation of Lower Gondwana comprising boulder bed, conglomerates, splintery shale is limited to outcrops in Guduvanchery near Chennai. It exposes a near complete sequence of the Cretaceous from the Aptian through Maastrichtian. The oldest sedimentary unit is the fluviatile, plant fossil bearing Upper Gondwana clay of Aptian age. The overlying marine rocks begin with basal coral-algal reefoidal limestone. The overlying gypsiferous clay and sandstone yield many fossils. A younger shell bank facies is exposed in 3 sub-basins, viz. Ariyalur, Vriddachalam and Puducherry. The overlying coarse sandstone contains dinosaur fossils. Rocks of Danian age top the succession. An integrated bio-stratigraphic study on invertebrates reveal the remarkable coincidence of biozonal boundaries with many lithostratigraphic levels.

Geo-tourism spots: Mahabalipuram- ancient rock cut temples etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Chennai Airport

SR015: *Coral Reef ecosystem around Lakshadweep, Arabian Sea, Western India*

This Post-IGC trip starts at **Agatti Airport** & ends at **Agatti Airport**
Start Date – **09 March 2020**; End Date – **14 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **09:00 Hrs**;
Participants: 15 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: Dhirendra Kumar Pandey
Other Contributors: P. Pookoya, Franz. T. Fürsich, Matthias Alberti and Idrees Babu K.K.

Trip overview: Located approximately 200 to 450 km west of the coastline of Kerala, the Lakshadweep Archipelago in the Arabian Sea consists of ~36 coral islands. The chain of atolls is part of the Chagos-Laccadive Ridge and formed due to the volcanic activity of the Réunion Hotspot. The coral reefs growing on the submerged seamounts form highly diverse ecosystems. Different marine habitats with an abundant fauna and flora will be visited during the trip (mainly via snorkeling). In addition, Holocene beach rocks and storm deposits as well as recent sediments can be studied on the islands.

Geo-tourism spots: Marine Aquarium and Museum on Kavaratti Island, desalination plant on Agatti Island, etc.

Additional Info: Meeting Point – Arrival Gate No.1 @ Agatti Airport

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

SR017: *Neoproterozoic alkaline carbonatite complexes, Southern India*

This Post-IGC trip starts at **Bengaluru Airport** & ends at **Bengaluru Airport**
Start Date –**09 March 2020**; End Date – **13 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **20:00 Hrs**;
Participants: 20 Min. & 25 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: M.Srinivas and N.V.Chalapathi Rao
Other Contributors: K. Sreenu, V. Madhavan and T.R.K. Chetty

Trip overview: Neoproterozoic alkaline carbonatite complexes in southern India, (within a 200km long NNE – SSW trending belt extending from Gudiyattam in the north to Bhavani in the south) help to examine the Precambrian plate tectonics and crustal evolution processes. Three major carbonatite bodies are reported within this zone, viz. Sevattur carbonatite, Samalpatti carbonatite and Pakkanadu-Mulakkadu carbonatite. These alkaline and carbonatite rocks occur rarely, and carry enormous significance in terms of their economic potentiality, their genesis and petrological association.

Geo-tourism spots: Hogenakal waterfalls, Elagiri Hill etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Bengaluru Airport

SR020: *Geological study of Neyveli lignite deposit, Ariyalur fossiliferous beds and nearby geoheritage sites, Tamil Nadu*

This Post-IGC trip starts at **Puducherry Airport** & ends at **Puducherry Airport**
Start Date – **9 March 2020**; End Date **– 11 March 2020**;
Pickup at **06:30 Hrs** & Drop off at **17:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: T. Ramkumar, T. Kannadasan and S Vasudevan

Trip overview: Neyveli lignite deposit is found in Mio-Pliocene Cuddalore Sandstone deposited in the Ariyalur-Pondicherry depression. The delegates would experience the mining practices adopted at Neyveli Lignite Corporation India Ltd. The transect also covers visit to Tiruvakkarai fossil wood park, the fossiliferous Ariyalur area representing strong evidences of the great Cenomanian (98 Ma) transgression, 26 December 2004 Tsunami (caused by the great Sumatra earthquake) affected Cuddalore coast and Pichavaram, the second largest Mangrove forest in the world.

Geo-tourism spots: Natarajar Temple, Chidambaram, Pondicherry – French colonial settlement etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Puducherry Airport

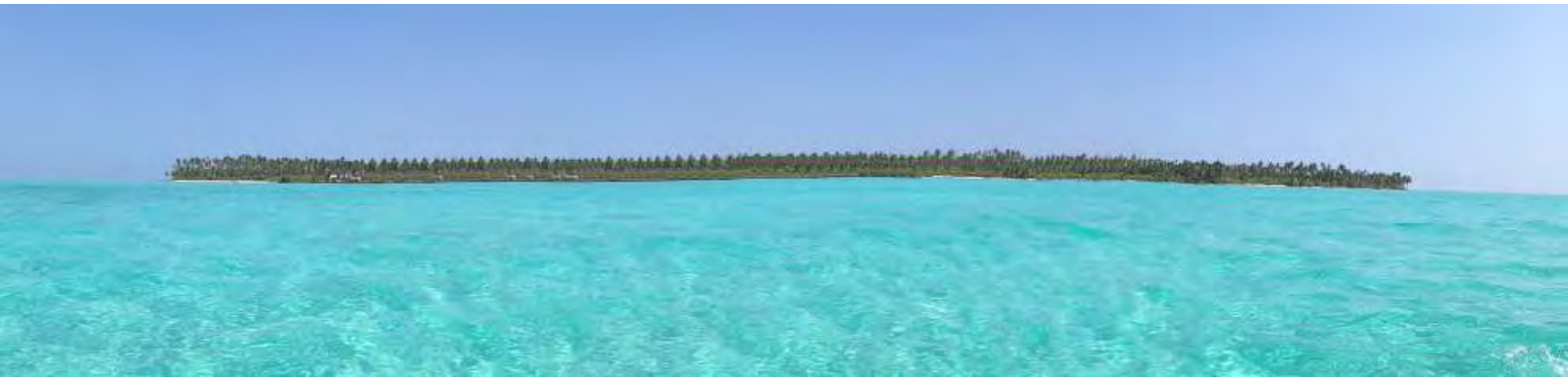
SR022: *Gold, Iron and Manganese mineralization in Dharwar-Shimoga, Gadag, Sandur, Hutti-Maski and Jonnagiri Schist Belts, Dharwar Craton*

This Post-IGC trip starts at **Hubballi Airport** & ends at **Bengaluru Airport**
Start Date – **09 March 2020**; End Date **– 15 March 2020**;
Pickup at **06:30 Hrs** & Drop off at **18:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: V.N. Vasudev and R. H. Sawkar
Other Contributors: N. Rajendran and H.M. Ramachandra

Trip overview: The excursion covers Neoarchaean metallogenic provinces of gold mineralisation across the east and west Dharwar Cratons in different geological setups. The trip also covers the iron and manganese mineralisation in Sandur Greenstone Belt.

Geo-tourism spots: World Heritage site at Hampi, Yerragundi Rock Edicts of Ashoka and Chalukya, architecture at Lakkundi etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Hubballi Airport



WR002: *Copper Mineralisation of Khetri, Rajasthan*

This Post-IGC trip starts at **India Expo Mart** & ends at **Jaipur Airport**
Start Date – **9 March 2020**; End Date **– 11 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **20:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: Shubhabrata Mukhopadhyay and Nagesh Kumar Rajpurohit
Other Contributors: Rohan Das, Vineet Kumar, Gargi Sharma and V. N. Mishra

Trip overview: Copper mining in Khetri area of Rajasthan dates back to over 2000 years in the Mauryan period. The Khetri Copper Belt is studded with several copper deposits and prospects, spread over 80 km. Extensive Cu mineralization with subordinate iron sulphide, Au, Ag, REE and uranium is hosted by rocks of the Mesoproterozoic Delhi Supergroup. There is growing evidences and opinions that the mineralization is of IOCG type. Zones of albitisation host low grade uranium deposits.

Geo-tourism spots: Copper mines at Khetri, forts, palaces, museum and solar observatory of Jaipur etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Jaipur Airport

WR011: *Late Quaternary Palaeoenvironments of Thar Desert Margin and Geo-archaeology*

This Post-IGC trip starts at **India Expo Mart** & ends at **India Expo Mart**
Start Date – **09 March 2020**; End Date – **12 March 2020**;
Pickup at **09:00 Hrs** & Drop off at **21:00 Hrs**;
Participants: 20 Min. & 40 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: Hema Achyuthan and S.K. Wadhawan
Other Contributors: Surender Atal, Saumya Brahma and Pawan Kumar

Trip overview: The eastern margin of the Thar Desert is rich in Palaeolithic sites and would have been a corridor for human migration 'Out of Africa'. Kuchaman, Didwana and Talchappar salt lakes occur in the desertic set up. Paleolithic sites such as Singi Talav, a Lower Palaeolithic site, Amarpura a Middle Palaeolithic site, the stabilized sand dune (16 R) nearly 350-ka exhibiting cambisols and associated calciorthids with Palaeoltihic tools have been dated by several radiometric dating techniques. Most of these sites occur bordering the present day Didwana Lake. Kataoti, a middle Palaeolithic site associated with ostrich egg shells is an undulating gravel ridge. The boulder and gravel bed, lie disconformable over the ferricrete bed at Jayal. Talchappar is a salt lake bordered by an historical mound that dates back to the Mughal period.

Geo-tourism spots: UNESCO Heritage City of Jaipur , Kuchaman Fort, Kuchaman and Didwana and Talchappar Salt Lake with the Mughal period site and black buck sanctuary etc.

Additional Info: Meeting Point – Gate No.1 @India Expo Mart, Noida

WR013: *Field Excursion to Dinosaur Fossil Park, Rahioli, Balanisor, Gujarat*

This Post-IGC trip starts at **Ahmedabad Airport** & ends at **Ahmedabad Airport**
Start Date – **9 March 2020**; End Date – **10 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **17:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 1 Night & 2 days;
Trip Coordinators: Harish Mistry and D.S. Chudasama
Other Contributors: Dhananjai Verma, N.V. Nitnaware, Alok Chitranshi, Monalisha Chakra and Manjari Pathak

Trip overview: This site of global significance hosts both the hatcheries and graveyards of titanosaurid sauropods and abilisaurid theropods. Reported species include Rajasaurus narmadensis, Rahiolisaurus gujaratensis and titanosaurus. The dinosaur eggs are taxonomically assigned as Megaloolithus rahioliensis (Sauropod eggs). The Late cretaceous fossil sites are well preserved by the state of Gujarat. This site provides evidence to show that dinosaur burried their eggs in the soft sand of paleo-rivers. Rahioli locality shows nesting sites with sauropod eggs- Megaloolithus rahioliensis (Megaloolithidae) and theropod eggs- Ellpisoolithus khedaenis (Elongatoolithidae). Both the nest-sites in the calcretised sandstone occur at same stratigraphic level but geographically separated over a distance of less than 400m. It is a unique site in the world, as it hosts prolific and associated skeletal remains of both titanosaurs and abelisaurs.

Geo-tourism spots: Sabarmati Ashram, Mahatma Gandhi Museum and Sabarmati River Front, laser Show at Akshardham Temple etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Ahmedabad Airport

WR014: *Visit to the state-of-the-art Marble and Natural Stones Processing Unit near Udaipur, Rajasthan*

This Post-IGC trip starts at **Udaipur Airport** & ends at **Udaipur Airport**
Start Date – **9 March 2020**; End Date – **11 March 2020**;
Pickup at **15:00 Hrs** & Drop off at **19:30 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: Pradeep Agarwal, Sanjay Saxena

Trip overview: The Rajasthan State has a tradition and history of marble mining and processing and the stone has been used in several buildings of archeological significance and contemporary civil structures of prominence. This field trip would cover all the aspects of marble mining, processing and finishing. Visit to the state of the art mechanical open-cast mines around Rajnagar and Udaipur in southern Rajasthan will provide an opportunity to the delegates to observe marble deposits belonging to the Aravalli/ Delhi Supergroup of Precambrian age. Processing of mined blocks at automated units will provide a glimpse into the next stages for multi-purpose usage.

Geo-tourism spots: Haldighati, Shilpgram

Additional Info: Meeting Point – Arrival Gate No.1 @Udaipur Airport

WR015: *Visit to the Indian Institute of Gems & Jewellery's Training and Educational Institute at Jaipur, Rajasthan*

This Post-IGC trip starts at **Jaipur Airport** & ends at **Jaipur Airport**
Start Date – **9 March 2020**; End Date – **11 March 2020**;
Pickup at **11:30 Hrs** & Drop off at **20:20 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: P.C. Bakliwal, A.K. Grover, Yogendra Singh Bhamboo

Trip overview: Jaipur- the capital of Rajasthan state is a world class business centre for colored gemstones, especially for emerald. The Gem Promotion Council of India has a technologically advanced well-equipped training and gem testing centre that specializes in processing of colored stones. The visit to institute provides an opportunity to understand processing of stones and jewellery designing. The institute awards degrees/diploma related to skill development and jewellery designing.

Geo-tourism spots: Jaipur-the Pink City has Amber Fort, City Palace Museum and Hawa Mahal that are places of great tourist attraction.

Additional Info: Meeting Point – Arrival Gate No.1 @Jaipur Airport

NR004: *Holocene Climate Change and its impact on the dispersal of Indus valley/Saraswati Civilization*

This Post-IGC trip starts at **India Expo Mart** & ends at **India Expo Mart**
Start Date – **09 March 2020**; End Date – **10 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **18:00 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 1 Night & 2 days;
Trip Coordinators: Atif Raza and Sharat Dutta
Other Contributors: R.V. Chunchekar, R. Bhavani, H.S. Saini, S.A.I. Mujtaba and S. J. Hasan

Trip overview: This excursion is intended to show landscape of the ancient Harappan/Saraswati civilization along with geological archives of Holocene climate change. It will include study of carbonate and sulphate bearing lacustrine deposits signifying monsoon and it's weakening during Holocene, palaeochannel of ancient Saraswati River near Fatehabad and modern Ghagghar River, archeological mounds spanning Hakaraware to post-Harappan urban phases, two phases of sand dunes deposition and the fluvio-aeolian transitions.

Geo-tourism spots: Archeological mounds of Pre to post Indus/ Harrapan civilization at Rakhigarhi, Kunal, Birrana and Bannawali etc.
Additional Info: Meeting Point – India Expo Mart Gate No.1

NR005: *Pre-Himalayan metamorphism – magmatism in the Kumaun Lesser Himalaya*

This Post-IGC trip starts at **Pantnagar Airport** & ends at **Pantnagar Airport**
Start Date – **9 March 2020**; End Date **– 14 March 2020**;
Pickup at **11:30 Hrs** & Drop off at **11:30 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 5 Nights & 6 days;
Trip Coordinators: Mallickarjun Joshi, Pankaj Saini and D.S. Chauhan

Trip overview: The Kumaun region shall be examined in terms of tectono- litho-stratigraphy, metamorphic complexities and nature and extent of different tectonic contacts, viz. Himalayan Frontal Thrust (HFT), Main Boundary Thrust (MBT), Ramgarh Thrust (RT), South Almora Thrust (SAT), North Almora Thrust (NAT), Baijnath Thrust (BT), smaller klippes of Dharamghar and Askot and the Main Central Thrust (MCT). The route along the Kathgodam – Garbadhar road would offer a comprehensive synoptic study of Himalayan orogen for making observations relevant to the Himalayan geological framework and its role in the Cenozoic Himalayan exhumation, metamorphism and fore land sedimentation.

Geo-tourism spots: Himalayan geomorphology and Nainital etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Pantnagar Airport

NR006: *Tectonics of the Higher Himalayan Crystallines along Alaknanda-Dhauli Ganga Valleys, Uttarakhand Himalaya*

This Post-IGC trip starts at **Dehradun Airport** & ends at **Dehradun Airport**
Start Date – **9 March 2020**; End Date **– 15 March 2020**;
Pickup at **07:30 Hrs** & Drop off at **20:00 Hrs**;
Participants: 7 Min. & 15 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: A.K. Jain and D.C. Srivastava
Other Contributors: Saurabh Singhal, Aliba Ao, P.K. Mukharjee, Rahul Dixit, Gargi Deshmukh and Sandeep Singh

Trip overview: The main objectives of this field excursion are to study typical characters of the Cenozoic India-Asia convergence in the Uttarakhand Himalaya along a cross-section in Alaknanda-Dhauli Ganga Valleys. It includes position and definition of the MCT vis-a-vis the Munsiari and Vaikrita Thrusts, position and characters of the South Tibetan Detachment System (STDS), deformation of the HHC and its detailed shear sense analysis, structural control on melt accumulation of the Himalayan migmatites, Himalayan inverted metamorphism, evolution of high grade metamorphic rocks and the processes involved in their exhumation.

Geo-tourism spots: Tapovan Hotspring, Badrinath Temple, Devprayag, Rishikesh and Haridwar etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Dehradun Airport

NR008: *Evolution of the Lesser Himalaya – A Columbia-Rodinia-Gondwana Connect*

This Post-IGC trip starts at **Chandigarh Airport** & ends at **Dehradun Airport**
Start Date – **9 March 2020**; End Date **– 16 March 2020**;
Pickup at **15:00 Hrs** & Drop off at **18:00 Hrs**;
Participants: 7 Min. & 15 max.; **Duration:** 7 Nights & 8 days;
Trip Coordinators: Shailendra Singh, O.N. Bhargava, Vibhuti Rai and B.P. Singh
Other Contributors: Manoj K. Pandit, Amit Dharwadkar, Bhrigu Shankar, Bishakha, Pawan Kumar Gautam and D.M. Banerjee

Trip overview: The Proterozoic Lesser Himalaya sedimentary successions represent a unique record of sedimentation and volcanism during Columbian assembly through Meso-Neoproterozoic passing into Gondwana. The proposed sectors in the excursion represent a unique stratigraphy with sedimentary record of over a period of nearly 1000 Ma. The Lesser Himalaya represent a sedimentation and magmatic history comparable with that of Peninsular basins and a time period wherein no sedimentation occurred in this part of Himalaya after Cambrian except for some patches of Permian sedimentation representing the Gondwana connect. The record of the sedimentary rocks which are interstratified with volcanic rocks with 1800±13 Ma ages suggests the connection of the Indian plate with the Columbia Supercontinent.

Geo-tourism spots: Rudraprayag, Rishikesh and Haridwar and Valley of Flowers- a world heritage site etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Chandigarh Airport

NR009: *Trans-Himalayan Ladakh Batholith: A key to Magma Chamber Processes and Dynamics*

This Post-IGC trip starts at **Leh Airport** & ends at **Leh Airport**
Start Date – **09 March 2020**; End Date **– 13 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **08:00 Hrs**;
Participants: 25 Min. & 50 max.; **Duration:** 4 Nights & 5 days;
Trip Coordinators: Santosh Kumar and Rajneesh Bhutani
Other Contributors: Bhrigu Shankar Singh and Brajesh Singh

Trip overview: The Ladakh Batholith represents an integral part of calc-alkaline, Trans-Himalaya magmatic belt extending from east of Nanga Parbat to Lhasa, and is bounded by the Shyok Suture Zone (SSZ) in the north and Indus Suture Zone (ISZ) in the south. The batholith is partly covered by north dipping fore-arc and molasse sedimentary rocks. The beginning of northern subduction of Neo-Tethys at ca 110 Ma below the Asian plate produced vast amount of Andean-type calc-alkaline magmatism forming the Ladakh Batholith and Dras arc. The spectacular field features of Ladakh Batholith demonstrate tectono-magmatic processes as modern analogue of the older Neoarchaean and Proterozoic orogens.

Geo-tourism spots: The captivating landscape of Trans-Himalayas and monasteries etc.

Additional Info: • Meeting Point – Arrival Gate No.1 @Leh Airport • Carry Sunscreen lotion • Get a complete physical check up to make sure you have no serious health issues. • If you have a blood pressure problem, do consult your doctor before planning the trip. • People more than 60 years are not advisable to travel. • Please apply for Restricted Area Permit at your respective Indian Embassy before travelling to Leh.

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

NR010: *Ladakh- an archive for Quaternary landscape, climate and neotectonics*

This Post-IGC trip starts at **Leh Airport** & ends at **Leh Airport**
Start Date – **09 March 2020**; End Date – **15 March 2020**;
Pickup at **11:00 Hrs** & Drop off at **08:30 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: Binita Phartiyal and Pradeep Srivastava
Other Contributors: Anupam Sharma

Trip overview: This excursion is designed to showcase the landscape of Trans Himalayas (Ladakh) that formed in response of the suture zone tectonics and cold and arid Tran Himalayan climate. Ladakh, offers a rich platform for Quaternary palaeoclimatic studies and is a tectonically active zone between the Indus Suture Zone and the Karakoram Thrust having voluminous Quaternary deposits of glacial, lacustrine, fluvial and aeolian origin. The excursion will present a platform to discuss arid zone geomorphology, processes, riverine landscape, archive of paleoclimate in form of modern and paleolakes, sand ramps and glacial moraines that have been attempted for various dating techniques.

Geo-tourism spots: Entire stretch offers geotourism with its lunar/martian topography, barren mountains, highest passes, highest motorable roads, suture zone, batholiths exposures, lakes and palaeolakes and rock art. Several monasteries and gompas are a major attraction and treat to the eyes etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Leh Airport

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

NR015: *Unravelling the Quaternary mystic of Great Ganga Canvas-A myopic overview along Dehradun-Gangotri-Chamoli transect, India (CANCELLED)*

NR016: *Outer to Central Himachal Himalaya Transact – Sedimentary and Tectonic Story Unfolded*

This Post-IGC trip starts at **Chandigarh Airport** & ends at **Chandigarh Airport**
Start Date – **09 March 2020**; End Date **– 13 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **12:00 Hrs**;
Participants: 15 Min. & 30 max. **Duration:** 4 Nights & 5 days;
Trip Coordinators: O.N. Bhargava, S.K. Tangri and Manoj Kumar
Other Contributors: Hemant Kumar, Dipayan Guha, Parminder Singh Sethi and Ravi Shankar Chaubey

Trip overview: The Himachal Himalaya is one of the best worked out stretches encompassing sequences ranging in age from Palaeoproterozoic to Quaternary that include (i) Type Sections of several formations exposed in the Outer and Lesser Himalaya, (ii) Full succession of the Himalayan Foreland Basin covering the Thanetian to Pleistocene interval, (iii) excellent exposures of fossiliferous horizons of the Siwalik Supergroup and the Sirmur Group, and (iv) autochthonous, parautochthonous and allochthonous tectonic belts and klippe and windows in the Lesser Himalaya. The proposed transact unfolds comprehensive geodynamic evolution of the Outer and the Lesser Himalaya catering to stratigraphers, sedimentologists, palaeontologists, geomorphologist, structural and metamorphic geologists and also to those interested in Neotectonics.

Geo-tourism spots: Scandal Point at Shimla Ridge (a water divide between Ganga and Indus Rivers, Satluj Gorge and Bhimakali heritage Temple etc

Additional Info: Arrival Gate No.1 @Chandigarh Airport

NR017: *Cryospheric (Glaciological) and Cultural Field Trip to Ladakh*

This Post-IGC trip starts at **Leh Airport** & ends at **Leh Airport**
Start Date – **09 March 2020**; End Date **– 15 March 2020**;
Pickup at **10:00 Hrs** & Drop off at **06:00 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 6 Nights & 7 days;
Trip Coordinators: Dr. A. L. Ramanathan
Other Contributors: C. Chatterjee and Md. Soheb

Trip overview: Stok village in northern part of Zanskar Range, in the downstream of Stok Glacier will be visited. The Stok village catchment (52km2) has 7 smaller glaciers ranging between 0.2-1.2 sq km. The Stok catchment under Hemis National Park is attractive place for the researchers and climbers for understanding cryospheric processes and is a hub for Snow Leopards, Himalayan Blue Sheep, Mormot and several bird species. The elevation at the trekking point is roughly around 3700m asl and the highest point (Stok glacier) lies at about 5400m asl.

Geo-tourism spots: Glaciological and geological landscapes, Stok Summit and Paleo-glaciation etc.

Additional Info: • Meeting Point – Arrival Gate No.1 @Leh Airport • Carry Sunscreen lotion • Get a complete physical check up to make sure you have no serious health issues. • If you have a blood pressure problem, do consult your doctor before planning the trip. • People more than 60 years are not advisable to travel. • Please apply for Restricted Area Permit at your respective Indian Embassy before travelling to Leh.

Important Information: This field trip belongs to Restricted/ Protected Area. Foreign delegates would be required to apply/ obtain Restricted/ Protected Area Permit at the Local Consulate or Embassy. For further details please check the Visa Information section".

NR019: *Natural Stones and UNESCO architectonic Heritage Sites of Agra and Fatehpur Sikri, North India*

This Post-IGC trip starts at **India Expo Mart** & ends at **India Expo Mart**
Start Date – **09 March 2020**; End Date **– 11 March 2020**;
Pickup at **08:00 Hrs** & Drop off at **20:00 Hrs**;
Participants: 15 Min. & 25 max.; **Duration:** 2 Nights & 3 days;
Trip Coordinators: Fareeduddin, Gurmeet Kaur and Kireet Acharya
Other Contributors: V.K. Sharma

Trip overview: The trip is aimed towards visiting two major architectural heritage site viz. Taj Mahal and Fatehpur Sikri. Taj Mahal, a UNESCO World Heritage Site, is the ivory-white marble mausoleummade up of marble [from Ras Formation of Kumbhalgarh Group of the Delhi Supergroup (1700 - 1000 Ma)] from Makrana in Rajasthan which is now Asia's first Global Heritage Stone Resource (GHSR). The other heritage site to be visited is Fatehpur Sikri. The natural stones of Fatehpur Sikri is made up from the Bhander Group sandstone of the Proterozoic Upper Vindhyan which has commonly been used as dimension stone. Visit to the quarries of red Vindhyan sandstones will also be undertaken. The field trip would adopt the professed aims of Heritage Stone Sub-commission (HSS) of the IUGS to study the above architectural splendours from heritage angle.

Geo-tourism spots: Taj Mahal (one of the seven wonders of the world), Agra Fort, Buland Darwaza, Fatehpur Sikri, Vindhyan sandstones in Dholpur etc.

Additional Info: Meeting Point –Gate No.1 @India Expo Mart

CR004: *Sculptures in Deccan Basalt: Impact Crater to Rock-Cut Caves*

This Post-IGC trip starts at **Aurangabad Airport** & ends at **Aurangabad Airport**
Start Date - **09 March 2020**; End Date - **12 March 2020**;
Pickup at **18:00 Hrs** & Drop off at **14:30 Hrs**;
Participants: 20 min. & 30 max.; **Duration:** 3 Nights & 4 Days;
Trip Coordinators: Bibhas Sen and D. S. Jeere

Trip overview: Lonar Crater is the best preserved terrestrial impact crater in basalt. It provides unique opportunities for comparison with craters in lunar maria and Mars. Rock cut caves of Ajanta and Ellora are the world heritage sites carved in the pahoehoe lava flows of the Deccan Volcanic Province.

Geo-tourism spots: Rock cut caves of Ajanta and Ellora, Daulatabad, Temple Ruins in Lonar and Bibi ka maqbara (tomb) etc.

Additional Info: Meeting point - Arrival Gate no 1 @Aurangabad Airport

CR005: *Deccan Volcanic Province | Characters and Landscapes*

This Post-IGC trip starts at **Pune Airport** & ends at **Mumbai Airport**
Start Date – **09 March 2020**; End Date – **16 March 2020**;
Pickup at **07:00 Hrs** & Drop off at **13:00 Hrs**;
Participants: 15 min & 30 max.; **Duration:** 7 Nights & 8 Days;
Trip Coordinators: Makarand S. Bodas
Other Contributors: Poushali Chatterjee, M. I. Treesa, Tulika Pal, Yogendra Singh and Suravi Banerjee

Trip overview: The field traverse is in western part of the Deccan Volcanic Province (DVP). It transects the Main Deccan Plateau, Western Ghat Escarpment zone and the Konkan tract. It provides a chance to observe all the essential components of DVP viz. lava flows, lava channel/ tube, dykes and spectacular landscapes carved out of this stunning lava pile.

Geo-tourism spots: Hill as well as island forts of Maratha kingdom and an ancient temple etc.

Additional Info: Meeting point - Arrival Gate no 1 @Pune Airport

CR006: *Crustal Evolution and VMS Metallogeny in the Proterozoic Betul Belt, Central India*

This Post-IGC trip starts at **Nagpur Airport** & ends at **Bhopal Airport**
Start Date – **9 March 2020**; End Date **– 12 March 2020**;
Pickup at **1500 Hrs** & Drop off at **1930 Hrs**;
Participants: 10 Min. & 20 max.; **Duration:** 3 Nights & 4 days;
Trip Coordinators: M. L. Dora
Other Contributors: Mohd. Shareef, Mohd. Atif Raza, Srinivasa Rao Baswani, S. A. Chore and Hemraj Suryavanshi

Trip overview: The Betul Belt (BB) is an important component of the Central Indian Tectonic Zone and forms a conspicuous litho-tectonic unit that is interpreted as island arc set up. The maximum and minimum age limits for the Betul supracrustal rocks are 1550±50 and 850±15 Ma (Rb-Sr) respectively. The felsic volcanic rocks within the bimodal volcanic sequence in BB host strata bound Volcanogenic Massive Sulphide deposits (VMS) of Zn-Cu type and Zn-Pb-Cu type.

Geo-tourism spots: Bhimbetka Caves and Sanchi Stupa - world heritage sites etc.

Additional Info: Meeting Point – Arrival Gate No.1 @Nagpur Airport

INTNP003: The Kathmandu Transect across the Middle of the Himalaya: Ancient to Active Tectonics

This post-IGC trip starts and ends at **Kathmandu**;
Participants: 20 Max.; **Duration**: 6 days;
Trip Coordinators: Bishal Nath Upreti and Alexander Webb

Trip overview: The excursion will cover the classic Himalayan geology of the Kathmandu region - Main Frontal Thrust; Intra Siwalik thrusts and Foreland Basin sediments (Siwaliks); the Main Boundary Thrust and Lesser Himalayan sediments; the Ulleri augen gneiss; multiple exposures of the Main Central Thrust system from south to north including the Mahabharat Thrust and permutations of the MCT 'zone;' the Greater Himalayan Crystalline rocks; and the Kathmandu Nappe. Further, the epicentral region of the devastating 2015 Gorkha Earthquake, and the progress and challenges of geological / civil engineering in this area will be showcased.

Geo-tourism spots: Nawakot and Langtang earthquake damage zones, view of High Himalaya in Langtang and Kakani, cultural sites of Kathmandu etc.

INTNP004: Greater Himalayan Cross-section: The Everest Area, Eastern Nepal

This post-IGC trip starts and ends at **Kathmandu**;
Participants: 15 max.; **Duration**: 11 days;
Trip Coordinators: Ananta Prasad Gajurel and Mary Hubbard

Trip overview: The Everest Region of eastern Nepal includes a complete section of the Greater Himalaya, the metamorphic core of the range, and it includes examples of classic Himalayan leucogranites plus a suite of Quaternary to modern features including glacial valleys, moraines, lake deposits, and recent landslides.

Geo-tourism spots: Sagarmatha National Park, Namche Gompa, Phortse, Gompa, Gokyo Tsho Mt. Everest etc.

INTNP005: A Full Cross section of the Dynamic Himalaya in Central Nepal

This post-IGC trip starts at Lumbini, and ends at **Kathmandu**;
Participants: 30 max.; **Duration**: 9 days;
Trip Coordinators: Lalu Paudel, Khum Narayan Paudayal and Jörn H. Kruhl

Trip overview: The Lumbini-Pokhara-Muktinath transect is ideal for studying and understanding the structure and evolution of the Himalaya. Complete exposures of the Paleozoic-Mesozoic succession of Tethys sediments are present in the Kali Gandaki River section for examining deformation, magmatism, metamorphism and exhumation caused before and after India-Asia collision.

Geo-tourism spots: Kali Gandaki Valley, Caves at Pokhara, Lumbini (birth place of Lord Buddha), Siddhab Baba temple at Butwal, Tal Barahi Temple at Pokhara, World Peace Pagoda at Pokhara, Muktinath Temple, ancient Monastries at Kagbeni, Muktinath etc.

INTNP006: Transboundary Geotraverse from Nainital-Almora- Dharchula in India to Darchula-Dadeldhura- Dhangadhi in Nepal

This post-IGC trip begins from **Kathgodam** in India and ends at **Dhangadhi, Nepal**;
Participants: 20 max.; **Duration:** 6 days;
Trip Coordinators: Megh Raj Dhital and Chandra Sekhar Dubey

Trip overview: The field excursion will be an opportunity to compare geology from both parts of India and Nepal. The excursion will feature the Siwalik, Lesser Himalayan and Higher Himalayan sequences in Nepal and India, including the Miocene strata in the inner belt, active faults, backthrusts, and overturned strata containing columnar stromatolites. Paleozoic granites, augen gneisses, and amphibolites, radioactive mineralization, talc, dolomite and other economic mineralization sites will also be visited.

Geo-tourism spots: Nainital, Almora, Khalanga, Dharchula, Mahakali River, Baitadi Dadeldhura etc.

INTNP008: Neotectonics of the Himalayan Active Mega Thrust: Main Frontal Thrust (MFT) from Butwal to Koshi River

This post-IGC trip starts at **Koshi Tappu Wildlife Reserve** and ends at **Butwal**;
Participants: 20 max.; **Duration**: 05 days;
Trip Coordinators: Soma Nath Sapkota and Paul Tapponnier

Trip overview: The geologic evidence of devastating earthquakes (i.e. rupture of the great 1934 earthquake) will be shown. Spectacular and self-explanatory natural exposures with clear evidence of recent movement of the MFT are available. Key paleoseismological sites that have helped define the Holocene earthquake history of the Nepal Himalaya over the past 30 years will be visited.

Geo-tourism spots: Chitwan National Park, Koshi Tappu Wildlife Reserve and Lumbini (birth place of Gautam Buddha), Kathmandu etc.

INTNP014: Hydrogeological Transect from Indo-Gangetic Plain to Lesser Himalaya in Nepal Himalaya

This post-IGC trip starts and ends at **Nepal-India border** (Nawalparasi and Bhairahawa);
Participants: 20 max.; **Duration:** 7 days;
Trip Coordinators: Dinesh Pathak and Gangula Krishna Rao

Trip overview: The diversity of groundwater occurrence, utilization condition, and problems related to different geological and physiographic set up, hydrogeology from plain to mountainous area etc. shall be showcased. The journey shall be across the major geological structure like MFT and MBT.

Geo-tourism spots: Chitawan National Park, Lumbini-birth place of Gautam Buddha, Ramapithecus Park at Dobhan, Palpa, Tansen- the ancient town, Pokhara etc.

INTSL001: Geology of the High-Grade Proterozoic Terrains of Sri Lanka

This post-IGC trip starts and ends at **Colombo**
Participants: 15 max.; **Duration**: 5 days;
Trip Coordinators: L.R.K. Perera and Sanjeeva Malaviarachchi

Trip overview: Sri Lanka, the 'pendant' of Gondwana, is a collage of distinct crustal blocks that preserve important records of major Neoproterozoic tectonothermal events. The geology of Sri Lanka provides important insights into continental growth in the Neoproterozoic Earth. Tectonics of Sri Lanka has also been in focus in relation to the history of the assembly of supercontinents, particularly because of its central position within the India-Madagascar-Africa-East Antarctica collage of the late Neoproterozoic Gondwana supercontinent. Due to similarities of lithologies, geochronology of the rock in the Lützow- Holm Complex (LHC) of East Antarctica and the Highland Complex (HC) of Sri Lanka, several workers have considered that LHC as an extension of the HC of Sri Lanka. Hence speculation on the East Antarctic Geology may be done standing on Sri Lankan basement.

Geo-tourism spots: Dambulla Cave Temple, Wahawa Hotwater Spring and Dolerite dykes, Arrested charnockite around Kurunegala, Temple of Tooth etc.


Taj Mahal, Agra

Agra Tour

Detailed Itinerary:

DAY 1: Delhi - Agra
On the 1st day of the tour, begin your road journey from Delhi to Agra, early morning(4 hours journey). Enroute, you would be making a halt to explore one of the finest creations of the Mughals; Sikandra. Named as Sikandar, it is actually the mausoleum of the Great Mughal ruler, Akbar. The design of this fascinating structure boasts of a perfect blending of Islamic, Jain, Buddhist, Christian and Hindu themes. After this, come back on your course to Agra.
Upon your arrival at Agra, check in to a pre-booked hotel.
Rest for a while following which you would be taken on a sightseeing tour of the historic Agra city. First in the list would be the wonder of the world, the beautiful Taj Mahal. This legendary white marble structure was built by another great Mughal ruler, Shah Jahan in commemoration of his love for his wife, Mumtaz Mahal. Every day, the Taj receives a huge influx of tourists from all over the globe.
In the latter half of our sightseeing trip, guests would be admiring the majestic Agra Fort and Itmad-ud-Daula's tomb. Both of these structures hold great significance for the city's heritage. Evenings are meant for some local shopping. Feel free to explore the whereabouts of the local market, buying souvenirs and handicrafts.
Post that return to the hotel for dinner and overnight stay.

DAY 2: Agra- Delhi Departure
Post that, you would be driven back to Delhi and further transferred to airport/railway station for the onward journey back home.

Inclusions:
Hotel Accommodation
Transportation on A/C vehicle
Meals Buffet - Breakfast and Dinner
All Sightseeing and Transportation would be provided as per the itinerary in Air Conditioned Vehicles
All applicable Hotel / Transport taxes
Services of a professional English speaking Guide throughout the sightseeing tour

Exclusions:
Expenses of personal nature, such as laundry, telephone calls, room service, alcoholic beverages mini bar charges, tips, portage, camera fees etc.
Any meals and services not specifically mentioned in the inclusions
All Entrance fees, outreach activities

Delhi Shopping Tour

Shopping in Delhi is one of the most pleasurable and exciting experiences among shopping lovers. Shopping ranges from jewelleries, carpets, invaluable stones to bamboo works, handicrafts, garments, potteries and so on. Through our tour you will be able to witness one of the finest collections of Art and Craft.
Duration: 4-5 Hours

Delhi Haat:
First stop will be at Delhi Haat – Its a combination of food plaza and craft bazaar located in the heart of Delhi. There are stalls of crafts from all over India, and from a variety of cultural traditions of India. Around 2003, this market became fully wheelchair-accessible, including an accessible bathroom.

Cottage Emporium:
After Delhi Haat, we would proceed to our next shopping destination " Cottage Emporium"
The Cottage Emporium is the leading source for Indian handicrafts created by skilled Indian Artists & Masters of 'Crafts. Artist made- handicrafts, furnishings, jewellery & accessories, objects & accents for home and offices. Post which you can explore Connaught Place market. The most favourite places to visit in Delhi. The dedicated market space has plenty to offer from branded to local goods on display. Not to mention the multitude of eating joints attending to your every gastronomic need.

Lunch Break – 2 PM to 3 PM

Khan Market:
After Cottage Emporium, we would proceed to our last destination "Khan Market"
Khan Market is one of the popular shopping destinations of Delhi, Tourists visit Khan Market in Delhi in order to get bowled over by the attractive wares displayed in its numerous shops. Khan Market is considered to be one of the very classy and posh shopping markets in the whole city. Shopping in Khan Market is great fun as there are a wide range of showrooms with an overwhelming variety of choices.

After Khan Market at 4 PM we will proceed to the Hotel.

Inclusions:
Including all destinations as per Itinerary and Transportation on sharing basis
Services for English Speaking Guide
All currently applicable taxes.

Exclusions:
Any expenses of personal nature such as camera fees, emergency medical costs etc.
Monument Entry Fee


Hawa Mahal, Jaipur

Jaipur Tour

Detailed Itinerary:

Day 01
After breakfast our representative will meet and greet you at the Hotel lobby and proceed to Jaipur, the fabled 'Pink City'. Arrive in Jaipur and check in at the hotel. Enroute, enjoy a photo-stop at Hawa Mahal. Later, visit the City Palace and the apartment that houses museums with an array of textiles, costumes, arms, weapons and paintings. Finally, see Jantar Mantar, the observatory Jaipur.Overnight stay attheJaipur Hotel

Day 02
After breakfast proceed to visit the ancient capital of the Kachwaha Rajputs, the Amber Fort (cost of elephant or Jeep ride is extra) up the fort to be built by Maharaja Jai Singh. Later Drive to Delhi and stay at Delhi hotel.

Inclusions:
Hotel Accommodation
Transportation on shared A/C vehicle
Meals - Buffet Breakfast and Dinner
All Sightseeing and Transportation would be provided as per the itinerary in Air Conditioned Vehicles
All applicable Hotel / Transport taxes
Services of a professional English speaking Guide throughout the sightseeing tour

Exclusions:
Expenses of personal nature, such as laundry, telephone calls, room service, alcoholic beverages" mini bar charges, tips, portage, camera fees etc.
Any meals and services not specifically mentioned in the inclusions (Lunches)
All Entrance fees, outreach activities

Please Note:
In case of unavailability in the listed hotels, arrangement for an alternate accommodation will be made in a hotel of similar standard.
Transportation shall be provided as per the itinerary and will not be at disposal.


Qutub Minar, Delhi


Humayun's Tomb

New Delhi Sightseeing Tour

Delhi is one of the oldest and greenest capitals of the world. For the visitor, it serves as a perfect introduction to the cultural wealth, the complexities and dynamism of India. Due to its legacy and historic past, Delhi is divided in two portions named as New and Old Delhi. In this tour we will give you glimpses of New Delhi with its unmatched aura and beauty. Two of its monuments - the Qutub Minar and Humayun's Tomb - are World Heritage Sites.

Duration: 4-5 Hours

Qutub Minar:
Qutub Minar is an excellent example of Afghan Architecture. The Minar is a 72.5m high victory tower, the construction of which began in the final year of twelfth century by Qutubuddin Aibak, and was later completed by his successor. It has been given World Heritage Site status.

Bahai Temple:
After Qutub Minar, we would proceed to our next destination " Bahai Temple"
Situated atop the Kalkafi Hill. Its is also known as "The Lotus Temple" due to its distinctive lotus shaped design in Marble.It was built in 1987 by the followers of Bahai faith. The temple signifies the purity and equality of all religions. (Monday Closed) During your Tour, you will drive pass India Gate, Parliament House, Embassies Area etc

Lunch Break – 2 PM to 3 PM

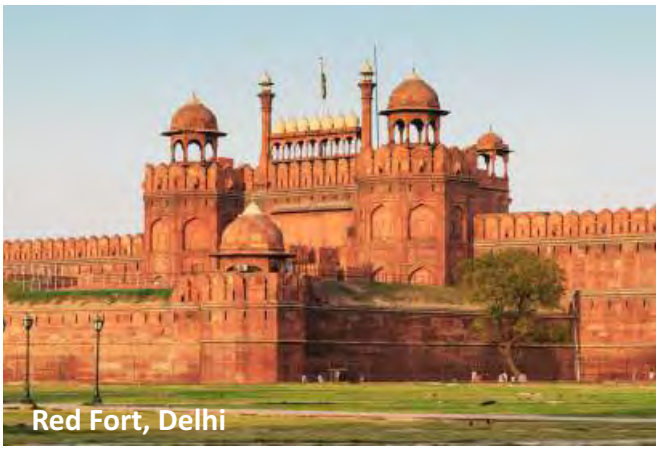
Humayun's Tomb:
After Bahai Temple, we would proceed to our next destination " Humayun's Tomb"
Built by Humayun's widow, Queen Haji Begum in the 16th century, it is supposed to be the prototype of the Taj Mahal at Agra.

Jantar Mantar:
After Humayun's Tomb, we would proceed to our last destination " Jantar Mantar"
Among most popular places to visit in Delhi is the Jantar Mantar, an ancient observatory built by Maharaja Jaisingh of Udaipur in 1794 on the main Parliament Street at Connaught Place. The instruments at Jantar Mantar are undoubtedly fascinating for their ingenuity however the high-rise buildings around have obstructed accurate observations End the day with memorable moments. After Sightseeing you will be transferred to your hotel.

After Jantar Mantar at 4 PM we will proceed to the Hotel.

Inclusions:
Including all destinations as per Itinerary and Transportation on sharing basis
Services for English Speaking Guide

Exclusions:
Any expenses of personal nature such as camera fees, emergency /medical costs etc.,
Monuments Entry Fee


Red Fort, Delhi


Jama Masjid, Delhi

Old delhi sightseeing tour

Old Delhi or Purani Dilli was founded by the Indian Mughal Emperor Shah Jahan in 16th century. It was once the capital of Mughal Empire, but now at the eart of bustling Megacity of Delhi this part of the old city is host to crowded and colorful markets entwined by grand mosques, old mansions, and temples.

Duration: 4-5 Hours

Detailed Itinerary:
Our representative will meet and greet you at Hotel lobby at 8 AM after and which you will proceed to 0ld Delhi Sightseeing Tour.
Visit to majestic buildings of Delhi as follows:

Red Fort:
The first destination for the tour will be The Red Fort, which is more commonly known as the Lal 'Quila. Mughal Emperor Shah Jahan had laid its foundation and nine long years were taken for this citadel to be built. The fort is built of red sandstone, and has two main gates. Lal Quila is the reminder of the glory of the Mughal area.

Jama Masjid: After Red Fort, we would proceed to our next destination " Jama Masjid"
The second destination is Jama Masjid along, which is about 500 metres away from Red Fort. This is the biggest mosque of India, and was built by Shah Jahan in 16th century. It is beautifully built in white marble and sandstone. This mosque holds up to 25,000 worshippers and has relics written on the gates.

Chandani Chowk: After Jama Masjid, we would proceed to our next destination " Chandani Chowk"
The third destination is Chandni Chowk. it is the perfect place to shop in. This densely populated market has been around for more than three centuries and was once visited by merchants from Turkey, China and even Holland. You may buy curios and souvenirs from, here. After that we will visit India Gate & Rashtrapati Bhavan (Presidents House) (Photo stop subject to security perception on the day of the Tour)
End the day with memorable moments. After Sightseeing you will be transferred to your hotel.

Additional Info:
There are various multi-cuisine restaurants in Old Delhi, where you can enjoy your lunch.

Inclusions:
Including all destinations as per Itinerary and Transportation on sharing basis
Services for english Speaking Guide
All currently applicable taxes.

Excllusions:
Any expenses of personal nature such as camera fees, Laundry.
Monuments Fee

Geoexpo and Sponsorship Opportunities

GeoExpo

An elaborate GeoExpo has been planned at the venue of the 36th IGC - the India Expo Centre, Greater Noida, Delhi. It has been designed to offer a wide range of opportunities catering to the needs and budgets of the exhibitors. It has a mix of pre-fabricated booths and raw spaces. The latter can be customized as per the requirements of the exhibitors.
There will be a wide range of exhibitor kit items, including panels, furniture and lighting to choose from. The expo kit manual will be released shortly.
To find out more please visit - https://www.36igc.org/geoexpo
You may also contact us at expo.sponsor@36igc.org.

Sponsorship Opportunities

The 36th IGC offers innovative and rewarding sponsorship opportunities. Six major categories of sponsorship have been devised to suit the needs and objectives of the sponsors. These are Titatium, Platinum, Diamond, Gold, Silver and Bronze. In addition, multinational companies are invited to sponsor the "hiring cost of the entire venue, and be the main Congress sponsor. To get the maximum number of organizations on board, there will be opportunities to sponsor several important components of the event like the Congress Breaks, Workshops/Short Courses, Publications, Technical Sessions etc. The cost of sponsorship packages with complete details is being brought out in the Sponsorship Brochure which will be published on the Congress website.

6th Yes Congress Program And Schedule

The 6th session of the YES Congress will be held alongside the 36th IGC. The schedule of the Congress is given below:

The YES Congress has planned scientific sessions along with Poster Presentations on 18 themes which are detailed under the Scientific Symposia in this Circular.

Day Wise Technical Program

DAY 1 (3.3.2020)

Workshop 1: Problems in geoscience computation **(GC)**
Workshop 2: Qualitative interpretation in Geology and Geophysics **(QIGG)**

DAY 2 (4.3.2020)

Proposed Roundtable Topic: Women in Geosciences

Moderators:
Ndivhuwo Cecilia Mukosi, Council for Geoscience, Limpopo South Africa
Ezzoura Errami, African Association of Women Geoscientists, Chouaib Doukkali University, Morocco
Tanvi Arora, Scientist, CSIR-National Geophysical Research Institute, India

Roundtable Description

Women are generally under-represented in the geoscience discipline, and often face gender specific challenges while pursuing their degree or upon entering the workforce. This roundtable will focus on these challenges and offer opportunities for women geoscientists to connect and network with each other. After a brief introduction from several associations that help to promote the development of female geoscientists, the roundtable will feature two keynote speakers, both offering their perspective on being a successful geoscientist while overcoming stigmas, cultural, political, and socio-economic hardships. The keynote presentations will be followed by small group discussions where participants will examine several key issues and propose resolutions for each topic. Each of the small groups will then share their discussion highlights with the other participants, and lead a larger conversation about the given topic. This roundtable will provide students and early-career geoscientists with a variety of thought provoking themes and the necessary discussions in order to advance within the field of geoscience.

DAY 3 (5.3.2020)
Workshop on “Urban Geology，the Foundation of Smart City"
Moderator: Meng Wang, Minmetals, China

Urban Geology, as the foundation of the city, is the key to understand how to implement the Sustainable Development Goals 2030 in the urban region, and is strongly related to hazards reduction. adaptation of climate change and other issues we are facing today. For a more safe and resilient city, we may need to develop the new technology and standard on urban geology for the new city, especially on some typical underground space. Young Earth Scientists (YES) Network, together with European Federation of Geologist (EFG), China Geological Surveys, and other organizations will launch one day International seminars on Urban Geology during the International Geological Congress.

DAY 4 (6.3.2020)
Workshop on “Geophysical methods for Groundwater Exploration”
Moderators: Dr. Tanvi Arora and Dr. Payal Rani, CSIR-NGRI, Hyderabad, India
Details: The programme target individuals who desire to acquire high level skills in specific area of Hydro-Geophysical methods including shallow surface investigations. Training is focused on the practical use of latest geophysical instruments. We emphasize on practical work applications. Participants will be provided with the required software to process the data. Part of the course also provides a reminder of the basic principles of geophysical methods.

DAY 5 (7.3.2020)

- Networking Café
- Field Trip

DAY 6 (8.3.2020)

- Outreach activities by National Representatives from member countries
- Closing ceremony

NOT A MEMBER YET……

Please send an email to NETWORKYES.SECRETARY@GMAIL.COM if you are interested in YES Membership !!!

Kindly Contact:

1. **Dr. Tanvi Arora**
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36TH IGC CONTACT INFORMATION

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Field Trips:	fieldtrips@36igc.org
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Sponsorship:	expo.sponsor@36igc.org
Workshop/Short Courses and Business Meetings:	bm.wsc@36igc.org
Volunteer Program:	hsmandal@36igc.org

Contact details of the 36th IGC

Telephone: + (91) 11 29965750; 26057035
Postal address: 36th IGC Secretariat, C-2, Pushpa Bhawan, Madangir Road, New Delhi-110062

To attend the Congress, one may need to obtain Visa (conference Visa) or an e-Visa (e-conference visa). Detaills are at: https://indianvisaonline.gov.in/evisa/.

Following countries/delegates are exempted from visa application:

1. Foreign citizens possessing an Overseas Citizen of India (OCI) registration certificate or holders of a Persons of Indian Origin (PIO) Card. They have the right of domicile in India and are allowed unlimited entries into India.
2. Citizens of Bhutan and Nepal do not need a Visa to visit India (unless arriving from Mainland China).
3. Citizens of Maldives (entry permissible up to 90 days unless arriving from Mainland China).

Citizens of all other countries should apply for and obtain a visa issued by the Indian High Commission/Indian Embassy in that country. The procedure to apply and the type of visa required (conference visa or e-conference visa) would depend on the country of citizenship.

e-Visa

The Indian government presently offers the e-Visa facility to citizens of 169 countries.
To check the eligibility criteria and application procedure for an e-Visa please visit:
https://indianvisaonline.gov.in/evisa/tvoa.html
Citizens of countries not listed in the link above should apply for a visa at the Indian embassy / nearest Consulate.
For more information from the Ministry of External Affairs, visit:
https://www.mea.gov.in/indian-missions-abroad-new.htm

For e-Conference visa, applicants of the eligible countries/territories may apply online minimum 4 days in advance of the date of arrival with a window of 120 days. Foreigners applying for e-Conference visa will be permitted to club the activities permitted under e-Tourist visa only.

Note: e-Visa is non-extendable, non-convertible & not valid for visiting Protected/Restricted and Cantonment Areas (https://www.mea.gov.in/Images/pdf/ForeigD-FAQs-onPAPandRAP.pdf). If one intends to visit Protected/Restricted/Cantonment areas, one would require prior permission from the Civil Authority (https://mha.gov.in/sites/default/files/ForeigD-FAQs-on ConferenceVisa%20%281%29.pdf).

We recommend that delegates register for the Congress and apply for visa well in advance (about 10 weeks prior to the event).

Delegates may need to provide with their visa application an official letter of invitation, and/or confirmation of Congress registration, political clearance and security clearance for the event. These documents will be issued only after the registration fee is paid.

Other important links:
https://mha.gov.in/PDF_Other/AnnexIII_01022018.pdf
https://mha.gov.in/PDF_Other/AnnexI_01022018.pdf

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