



Equatorial Gondwanan History and Early Paleozoic Evolutionary Dynamics

Second Circular



INAUGURAL MEETING

Bangkok, Thailand
29-30 November 2018

POST-MEETING EXCURSION

Tarutao Island, Thailand
1-5 December 2018



DMR
Department of Mineral Resources



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About IGCP 668

Scientific Mission

The present may be the key to the past, but the past is the key to the future. Scientific studies of ancient changes in Earth's physical environment and biota provide insight into our planet's future. IGCP 668 seeks to understand the interplay of Earth's systems during a particularly important ancient interval, the latest Cambrian and early Ordovician (~500 – 450 Ma). This window of Earth history witnessed a change from repeated intervals of evolutionary "boom and bust" (rapid evolutionary radiation followed by dramatic collapse of diversity) in Cambrian shallow seas into a more stable and enduring biota in the Ordovician and thereafter. This change is temporally and likely causally linked to a late Cambrian peak and early Ordovician decline in global explosive volcanism. This volcanism is recorded in particular detail in the equatorial Gondwanan terrane of Sibumasu: Thailand, Myanmar, Malaysia, and Baoshan, China. In these areas fossils are repeatedly interbedded with datable volcanic ashes. Global volcanism may also have resulted in rapid changes in atmospheric CO₂, and in widespread marine anoxia. The relationship between such environmental stresses and faunal turnover has societal significance today, but our ability to learn from this instructive episode is hindered by our inability to determine the precise timing of these events and thus link cause and effect. IGCP 668 aims to rectify this problem and discover the links between volcanism, evolutionary boom and bust cycles, and ocean chemistry during the fifty million years spanning the Cambrian-Ordovician boundary. In order to do so we must expand our understanding of geology and paleontology of Sibumasu, particularly in the broader, better studied context of other equatorial Gondwana terranes (especially Australia, North and South China, Indochina, and South Asia). IGCP 668 will address these aims by focusing on the following:

Geochronology & Igneous Petrology: Resolving the poorly understood late Cambrian and earliest Ordovician geochronology is necessary to interpret the cause and effect relationships between lithospheric events, atmospheric events, and extinction/biodiversification patterns. Intrusive magmatism was widespread in the region during the Cambro-Ordovician, but its record is poorly understood. Sibumasu's tuffs offer a level of geochronologic resolution beyond what is currently available.

Stratigraphy (and stratigraphic subdisciplines): We are correlating the stratigraphy of Sibumasu and other parts of equatorial Gondwana using a combined approach of biostratigraphy, lithostratigraphy, chemostratigraphy, magnetostratigraphy, and igneous petrology in order to more directly compare regional vs. local events and geochronologically calibrate all of equatorial Gondwana's Cambro-Ordovician history, not just that of Sibumasu where the absolute dates occur. Only through a coordinated approach of many disciplines and regions can causal relationships within the "Earth-Life System" be established.

Palaeontology: When identifying speciation events, extinction events, and biodiversity levels, good taxonomy is fundamental. Although much progress has been made in updating classical systematics, additional taxonomic revision is urgently needed as efforts to update taxonomy have generally been isolated and scattered across limited taxa. Meanwhile, many new taxa have been established, some of which need to be evaluated for their taxonomic validity. As taxa are updated, integrating faunal occurrences into the Paleobiology Database (PBDB) and Geobiodiversity Database (GBDB) will make this information usable in addressing research questions at all scales

Additional Aims and Goals

IGCP 668 affirms that it is the duty of all scientists to disseminate findings and information not just to each other but to the general public. As we conduct field work in rural areas of Southeast Asia, we work with local villages through fossil collecting and storytelling to educate people on natural history and geologic processes. It is our intent that the local around and with whom IGCP 668 collaborators conduct field work should have an introductory sense of what the researchers are looking for and the nature of the geologic record.

Project Coordinators

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Host City

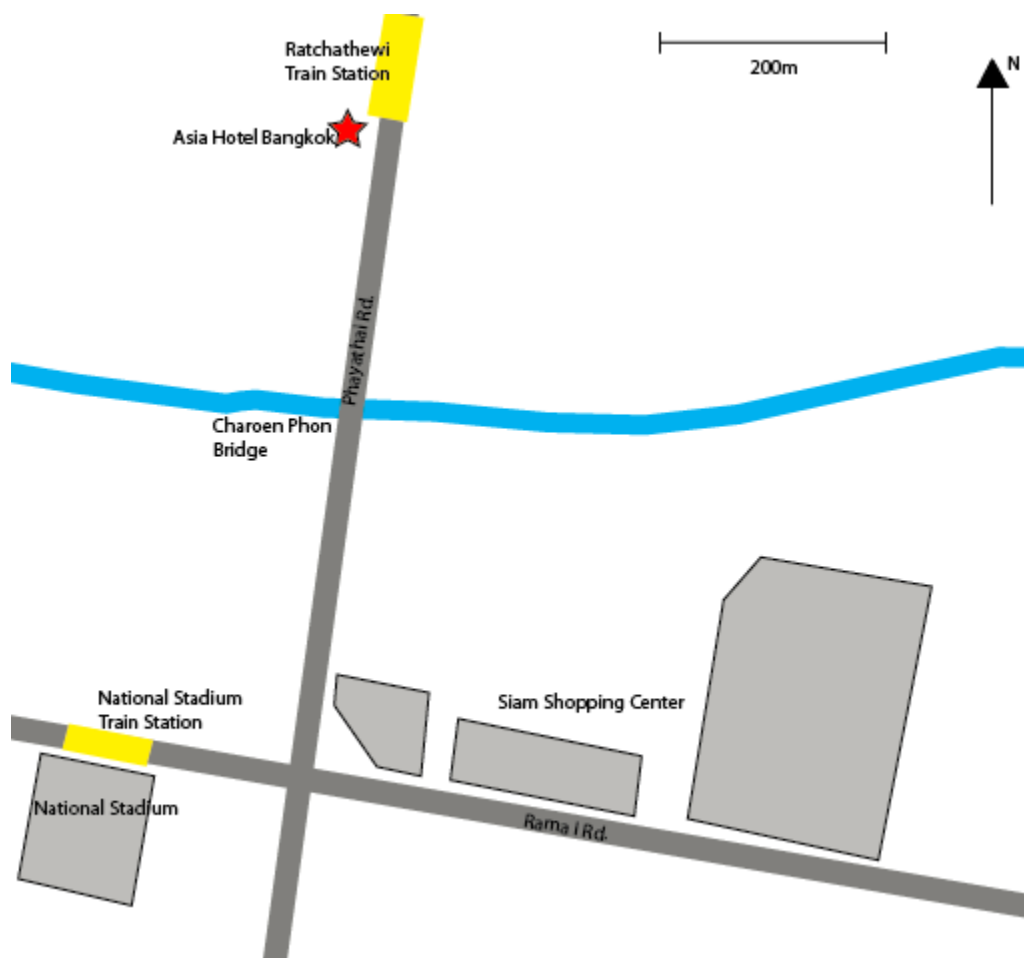
IGCP 668 is pleased to announce that the inaugural meeting will take place in Bangkok, the capital city of Thailand and home for the meeting's host organization, the Thai Department of Mineral Resources. Bangkok is a lively city where exquisite examples of traditional Thai architecture and culture meet a thriving modern metropolis. During your stay for the conference, be sure to enjoy the historic sites, markets, and, of course, world renowned Thai cuisine.

Conference Venue

The scientific conference will take place at Bangkok's beautiful Asia Hotel, 296 Phayathai Road, Bangkok 10400, Thailand. The Asia Hotel Bangkok is conveniently located next to the Ratchathewi Train Station and down the street from the National Stadium and Siam Center shopping area (see map). Lunch will be provided at the conference venue each day.

Participants are invited to stay at the conference venue but are responsible for reserving and paying for their own rooms. Participants will receive a special room rate of 1,800฿ (~54 USD) per night for a single room or 2,000฿ (~60 USD) per night for a double room (breakfast included). You may book rooms on your own if you find a better price, but to receive this special conference price, please submit a room reservation form (<https://swern001.wixsite.com/igcp668/registration>) to swern001@ucr.edu. Alternatively, you are welcome to find your own accommodation at any of Bangkok's many hotels and guest houses.

If you are receiving a travel grant from IGCP 668, we will book your room for you. Grant recipients will have double rooms shared with another participant. You are welcome to request a roommate though roommate requests cannot be guaranteed (except for couples).



Scientific Meeting

The scientific meeting will begin the morning of 29 November 2018 and conclude the evening of 30 November. Registration forms are available at <https://swern001.wixsite.com/igcp668/registration>. Participants are invited to give oral and/or poster presentations on research related to the scientific mission and aims of IGCP 668. Time will also be made for the establishment of working groups which are formally organized groups committed to focusing on achieving one of the IGCP sub-goals. All participants wishing to give an oral or poster presentation at the meeting should complete the abstract submission form found at <https://swern001.wixsite.com/igcp668/registration>.

Oral Presentations

There will be multiple sessions with oral presentations. With the exception of invited keynote speakers, all presentations should be restricted to 15 minutes with 5 minutes for questions. Please bring your presentation to the meeting on a USB flash drive. Presenters are encouraged to present in English as this language is understood by the largest number of participants, but presenters are permitted to speak in the language of their choice.

Poster Presentations

Posters will be available for viewing both days with presenters expected to be present with their posters for a 2 hour window on the afternoon of 30 November. Restrict poster sizes to no larger than 91cm X 122cm (printing size A0). Presenters must print posters prior to arrival as there will be no printing options at the venue. The organizers encouraged poster text to be in English as this language is understood by the largest number of participants, but presenters are permitted to use the language of their choice.

Working Groups

Working groups will meet the afternoon of 30 November 2018 to establish formal collaboration and direction for achieving the scientific goals of IGCP 668. Participating in a working group is entirely optional and open to everyone. Attendees are invited to sit in on a meeting to gauge interest in whether they are interested in committing to a working group. Working group options are:

- A. CONOP; this working group will build a database cataloging stratigraphic ranges of diverse regions and taxa in the Early Paleozoic; this database is to be used in evaluating diversity patterns and refining biostratigraphic correlation.
- B. Taxonomic revisions; this working group is for people interested in revising outdated or poorly understood early Paleozoic taxa since good systematics is foundational for understanding evolutionary patterns and stratigraphic correlation.
- C. Geochemical studies; this working group is for people interested in correlating and studying chemostratigraphy and geochemical records of the early Paleozoic in order to understand the atmospheric and oceanic conditions that may have contributed to biospheric diversity fluctuations
- D. Paleogeographic correlations: this working group is for people interested in studying the many techniques that will enable reconstruction of equatorial Gondwana's early Paleozoic geography



Post-Meeting Excursion

A post-meeting excursion will depart 1 December to travel from Bangkok down to the beautiful Satun province in Thailand's far south. There we will visit Tarutao Island, part of newly created Satun UNESCO World Geopark, renowned for both its natural beauty and geologic significance. Tarutao has a world class succession of volcanic tuffs and fossiliferous sandstones that span the Cambrian-Ordovician boundary. Trilobites and brachiopods are the primary fossils but echinoderm fragments and cephalopods have also been identified in the Cambrian units.

Tarutao Island is accessible by boat from the Satun mainland. Once on the island, we will stay 4 days (2-5 Dec.) and take smaller boats around the island to look at sections and sample fossils, ash beds, and detrital zircons. Other samples of interest to participants (e.g. palaeomagnetic or geochemical) may also be collected. Participants familiar with the Cambrian trilobites of Australia's Pacoota Sandstone, China's Dayangcha Section, or South Korea's Taebaek Basin may notice striking similarities in the fauna, but Tarutao also boasts several endemic or nearly endemic species and genera. The collections made on this excursion are scientifically important and serve IGCP 668's aims of obtaining a high-resolution geochronology for the Cambro-Ordovician. We will return to the mainland, concluding the excursion on December 5.

Due to the limited space on outcrops and limited accommodations on the island, the excursion is restricted to 15 participants, a number comprised of a mixture of both professional scientists and students. Anyone wishing to attend the excursion must submit an application detailing their interest in attending (<https://swern001.wixsite.com/igcp668/registration>). The excursion fee (TBD but expected to be 350 USD) will cover all food, travel, and accommodations within the Satun province (but potentially not from Bangkok to Satun – expect further details in the next circular). Limited IGCP funds are available to cover the excursion and travel fees of select participants from countries designated by UNESCO as developing or underprivileged. If you are from a country with this designation and wish to be considered for an excursion grant, be sure to indicate so on your grant application.

Registration

Registration for IGCP 668's first meeting is due 1 September 2018. Complete and submit the registration form found at <https://swern001.wixsite.com/igcp668/registration>.

Thanks to generous support from The Royal Thai Department of Mineral Resources, there is no meeting registration fee for the meeting in Bangkok. Registration includes morning and afternoon sessions on both 29 and 30 November as well as a mid-day conference lunch on both days

Due to limited post-meeting excursion space, those who wish to register for the trip must submit the Excursion Application (<https://swern001.wixsite.com/igcp668/registration>). More information about acceptance for the Post-Meeting Excursion and how and when to pay the excursion fee, will be available in future circulars and communications.

A limited quantity of IGCP funds have been designated to help cover travel and subsistence costs. Only participants from countries designated by UNESCO as developing or underprivileged are eligible to receive these funds. Both students and professional scientists from these countries are invited to apply for these funds using the travel grant application at <https://swern001.wixsite.com/igcp668/registration>.

Visa Information

Participants from some countries will require a Visa to visit Thailand. To check whether you need a Visa and what kind of Visa you need, see <http://www.mfa.go.th/main/en/services/4908>. Many Visas and other entry regulations require a letter of invitation from the Department of Mineral Resources. Please submit the Visa Invitation Request form (<https://swern001.wixsite.com/igcp668/registration>) to swern001@ucr.edu by September 15. While we are happy to provide this letter, all participants are required to obtain the Visa themselves.

All participants will need to have their hotel information when entering the country. You can give the address of the conference venue, the Asia Hotel Bangkok (296 Phayathai Road, Bangkok 10400, Thailand).

Grants and Funding

IGCP 668 has been awarded limited funds to provide travel grants for participants coming from countries designated by UNESCO as “developing.” If you require funding and come from a country with such a designation, you are welcome to apply using the form available at the following website: <https://swern001.wixsite.com/igcp668/registration>. Funding can be applied to both the scientific meeting and the post-meeting excursion. Applicants will be notified as to whether they have been selected for funding and how much funding they will receive by September 15.

We cannot guarantee any “up-front funding”, so funded participants will need to pay the initial costs and then receive reimbursement at the meeting. When you arrive at the meeting, be prepared to submit detailed, line-item receipts for airfare, Visa expenses, etc. Receipts should be in English or be submitted with an English translation. We will reserve double rooms for funded participants, so you will not be responsible for the upfront costs of the hotel.

See you in Thailand!