

REGISTRATION

Register online at www.5ias.org or contact Secretariat.

Excursion registrations must be completed by 30 June 2010.

Late registration fees for the Symposium and workshop apply from 1 July 2010.

All costs are in Australian dollars (AUD) and include the Goods & Services Tax (GST) of 10%.

Registration categories

Full registration includes technical sessions, abstracts volume, morning and afternoon teas, lunches, social functions and bus transport between the Burswood Resort and core library.

Student registration is equivalent to Full registration but the fee is heavily subsidised by Geoconferences (WA) Inc. and sponsors. Confirmation that the applicant is a full-time student for the 2010 academic year must be sent by the Head of Department to the Secretariat.

Day registration is available for those who only wish to attend for one or two specified days. The fee includes attendance at the technical sessions, the abstracts volume and lunch, morning and afternoon teas, and Sundowner on the nominated day or days. It does not include the Icebreaker, core library visit and barbecue, or Symposium Dinner.

Day registration can be made before 1 July 2010 but confirmation is subject to availability of places because Full registrants have priority for places until 30 June 2010.

Accompanying persons registration covers the Icebreaker, core library visit and barbecue, and Symposium Dinner.

Workshop registration includes notes, lunch, and morning and afternoon teas. Workshop participants must be registered for at least one day of the Symposium.

Excursion registration includes all transport ex Perth, accommodation where relevant (twin share hotel/motel, camping or station accommodation as specified), meals, some refreshments, and guidebook. Excursion participants must be registered for at least one day of the Symposium.

Schedule of registration fees

- **Full registration (by 30 June 2010)** AUD880.00
- **Late Full registration (after 30 June 2010)** AUD990.00
- **Student registration** AUD385.00
- **Day registration (subject to availability on 1 July 2010)** AUD385.00
- **Accompanying person registration (social functions)** AUD185.00
- **Workshop** AUD275.00
- **Excursion 1 - Evolution of active plate margins** AUD1,700.00
- **Excursion 2 - Controls on giant mineral systems in the Yilgarn** AUD2,600.00
- **Excursion 3 - Tracking the development of life on early Earth** AUD1,850.00
- **Excursion 4 - Time transect, western Yilgarn Craton** AUD1,250.00

Payment

All Symposium, workshop and excursion fees must be paid in full to confirm registration.

Pay Pal (Visa, MasterCard, PayPal transfer) is the preferred and easiest method of payment. Payment by direct debit (contact Secretariat for details), cheque, Australian money order or international bank draft in Australian dollars is also possible but must be accompanied by the reference number provided at the time of registration and received within two weeks of the registration date. Cheques will only be accepted if drawn on Australian bank accounts.

All payments will be acknowledged and a tax receipt issued.

Substitutions

An organisation may send an alternative registrant if registration has been paid and the registrant is unable to attend due to unforeseen circumstances. The Secretariat must be advised in writing (by e-mail, mail or fax) of any such change prior to the Symposium, workshop or excursion.

Cancellations and refunds

All cancellations must be notified in writing to the Secretariat.

Registration and workshop cancellations received at the Secretariat by 30 June 2010 will be refunded in full, less an administration charge of AUD45.00. After 30 June 2010, the administration charge will be AUD75.00.

Excursion cancellations received at the Secretariat by 30 June 2010 will be refunded in full, less 15% of the excursion fee. After 30 June 2010, any refund will be subject to re-allocation to another registrant and an administration charge of 25% of excursion fee.

Any refund after 1 August 2010 will be at the sole discretion of the Organising Committee.

Registration and Information Office

The Symposium Registration and Information Office will be established in the Function Centre foyer. It will be open daily between 8.00 am and 5.00 pm from Monday to Thursday 6 to 9 September. Early registration will be available on Sunday 4 September from 4.30 pm to 6.00 pm.

INSURANCE

Registrants should be adequately insured for any emergency and are responsible for their own medical, accident and travel insurance. All registrants participating in the Symposium, including the workshop, excursions and social functions, do so at their own risk.

EXHIBITION

Interested companies and organisations are invited to display their services and research in the Exhibition Hall. Contact Arthur Hoffman, Geological Survey of Western Australia (arthur.hoffman@dmp.wa.gov.au) to receive information.

SPONSORSHIP

This is the premier international scientific gathering for geoscientists interested in the Early Earth. There are excellent publicity opportunities for industry and service providers, including sponsorship of:

Icebreaker: Sunday 5 September

Core library barbecue: Monday 6 September

Symposium Dinner: Tuesday 7 September

Poster Session Sundowners: Monday to Wednesday 6 to 8 September

Symposium satchel

There will also be limited opportunities to include pamphlets in the symposium satchel.

Expressions of interest should be directed to the Secretariat as soon as possible.

TRAVEL GRANTS

5IAS travel grants are available to support the attendance of presenters who are:

full-time students (graduate and postgraduate) or

postdoctoral fellows from developing nations (as defined by the United Nations Development Programme www.undp.org/countries) who have been awarded their doctorate within the last five years and are actively engaged in Precambrian research.

Visit the Symposium website at www.5ias.org for more details and the application form.

ENTRY, EXIT AND CUSTOMS FORMALITIES

Overseas registrants

Visa requirements

All visitors to Australia must have a valid visa before boarding their plane, regardless of the length of stay.

New Zealand and Norfolk Island passport holders do not usually need to lodge a visa application prior to their departure unless they have health and/or character concerns.

As visa processing times may vary, overseas registrants are encouraged to apply for the appropriate visa 6 to 8 weeks before departure to Australia. Passports must be valid for the period of the intended stay in Australia.

Visit www.immi.gov.au/visitors for further information on which visa to apply for as an event participant.

Customs requirements

There is no import restriction on currency, although amounts with a value of AUD10,000 or more must be declared to Customs.

All animal and plant products and medicines must be declared to Customs on arrival.

It is illegal to take or send out of Australia, without a permit, items identified as being important to Australia's national heritage. These include mineral and rock specimens, fossils and other archaeological finds.

Visit www.customs.gov.au for detailed customs information.

Interstate registrants

To prevent the entry of insect pests and diseases, travellers cannot bring fruit or honey into Western Australia. Bins are provided at the Perth domestic airport and Norseman Checkpoint for the disposal of any fruit or honey.

SERVICES, TRANSPORT AND ACCOMMODATION

There is wheelchair access to all technical sessions and official functions.

Australia's voltage is 240 Volts AC, 50 Hertz.

A variety of accommodation is available near the Burswood Resort, in Perth city and Fremantle. Free parking, public transport (buses or train) and taxis are readily available.

Registrants are responsible for their own accommodation bookings.

A special Symposium rate is available at the Burswood Resort and Holiday Inn. Contact the Burswood Resort directly.

IMPORTANT DATES

12 February 2010
Deadline for abstract submission

30 April 2010
Authors informed of acceptance of oral or poster presentation

Accepted presenters must register by **30 June 2010** for inclusion of abstract in Symposium proceedings volume and confirmation of presentation.

30 June 2010
Last day for Full registration without incurring late fee

Closure of Excursion registrations

1 July 2010
Day registrations confirmed if places available

Late fee applies to Full registrations

Early July 2010
Excursion details sent to participants

30 August 2010
Pre-Symposium excursions depart Perth

5 September 2010
Registration Burswood Resort Function Centre, 4.30 pm to 6.00 pm

Icebreaker 5.30 pm to 7.00 pm

6 to 9 September 2010
5th International Archean Symposium

Registration and Information Office Foyer, 8.00 am to 5.00 pm

Posters & Exhibition Grand Ballroom 2, 8.00 am to 6.00 pm (Monday to Wednesday), 8.00 am to 12.30 pm (Thursday)

6 September 2010
Core library visit and barbecue departs Function Centre, 6.15 pm to 9.00 pm

7 September 2010
Symposium Dinner Austral Room, 6.30 pm for 7.00 pm

6 to 8 September 2010
Poster Session Sundowners Grand Ballroom 2, 4.00 pm to 6.00 pm

10 September 2010
Yilgarn-Superior Workshop WACA, Nelson Avenue, East Perth, 9.00 am to 5.00 pm

11 September 2010
Post-Symposium excursions depart Perth

SECRETARIAT

Ms Jocelyn Thomson

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Presented by
Geoconferences
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ABN 30 801 481 384

Register online at www.5ias.org

5TH INTERNATIONAL ARCHEAN SYMPOSIUM
EVOLVING EARLY EARTH 5-9 September 2010
Burswood Entertainment Complex
Perth, WESTERN AUSTRALIA

5IAS, the premier international symposium dedicated to Precambrian geoscience, will be held on 5 to 9 September 2010 at the Burswood Entertainment Complex, Perth, Western Australia. It continues the series of highly successful IAS meetings held every decade by Geoconferences (WA) Inc.

The Organising Committee has arranged an exciting program of presentations, a workshop and excursions reflecting a decade's worth of advances in our understanding of how the Early Earth evolved.

We invite academic, government and industry geoscientists with an interest in the early Earth to attend the 5th International Archean Symposium. We welcome you to our beautiful city, Perth, not only to enjoy the scientific and social program, but also to visit classic Archean and early Paleoproterozoic geology and mineral deposits in the Yilgarn and Pilbara Cratons, and in the Fortescue and Hamersley Basins.

For those wishing to present their research, the deadline for abstract submission is 12 February 2010.

Steve Beresford (5IAS Chair)

Tim Griffin (Geoconferences Chair)

SYMPOSIUM VENUE

Perth, the capital of Western Australia, is pleasantly situated along the broad lower reaches of the Swan River, on the southwestern coast of the Australian continent.

The city enjoys a mild Mediterranean climate and September is an ideal time to visit Western Australia, and Perth in particular. The mean daily maximum temperature for the city is 20°C, the mean overnight minimum is 9°C, and there is an average of almost 8 hours of sunshine per day. September has an average rainfall of about 70 mm. Light but warm clothing is recommended, with provision for protection from showers and cooler evenings.

Visit www.bom.gov.au for weather information.

All presentations, the exhibition Icebreaker and the Symposium Dinner will be held at Burswood Resort Function Centre. The Burswood Resort is an entertainment complex comprising a modern function centre, casino, two hotels (Burswood Intercontinental and Holiday Inn), golf course, day spa, several restaurants, bars and nightclubs.

Visit the Resort's website at www.burswood.com.au for details.

TECHNICAL PROGRAM

As for previous Symposia, the single-session format will encourage collaboration and integration among researchers. A combination of Keynote Addresses and Invited Presentations, as well as submitted presentations and posters will cover the following themes.

Planet formation, crustal growth and the evolving lithosphere

Includes Keynote Addresses by John Valley (University of Wisconsin, *What can we agree on before 4 Ga?*) and Tony Kemp (James Cook University, *An isotopic roadmap of Early Earth evolution – progress and potholes*).

Invited Speakers include Bill Griffin (GEMOC, Macquarie University), Mattias Willbold (Bristol University),

Jean-François Moyen (Stellenbosch University), Jonathan O'Neil (McGill University) and Alex Nemchin (Curtin University of Technology).

Diversity in tectonic regimes

Includes Keynote Addresses by Peter Cawood (The University of Western Australia, *Early Earth tectonics – was it the same?*) and John Percival (Geological Survey of Canada, *Tectonic-metallogenic linkages in the Superior Province, Canada, as deduced from a modern, craton-scale, 4D framework*).

Invited Speakers include Jean Bedard (Geological Survey of Canada), Gary Stevens (University of Stellenbosch), Patrice Rey (University of Sydney), Richard Ernst (Ernst Geosciences), and Martin Van Kranendonk and Stephen Wyche (Geological Survey of Western Australia).

Unique mineral systems

Includes Keynote Addresses by Graham Begg (Minerals Targeting International, *The lithosphere, geodynamics and metallogeny*) and Andy Barnicoat (Geoscience Australia, *Mineral systems and the evolution of the Early Earth*).

Invited Speakers include Steve Beresford (The University of Western Australia), Shane Evans (Mooimbarriga Geoscience), Boswell Wing (McGill University), David Snyder (Natural Resources Canada), Phil Thurston (Laurentian University) and Scott Halley (Mineral Mapping).

Establishing a habitable planet

Includes Keynote Addresses by James Farquhar (University of Maryland, *Isotopic evidence for evolving atmospheric and oceanic chemistry and the early evolution of life on earth*) and Nora Noffke (Old Dominion University, *Microbial mats, evidence for the early evolution of life*).

Invited speakers include David Wacey (The University of Western Australia), Kevin Zahnle (NASA Ames Research Centre), Clark Johnson (University of Wisconsin), Kurt Konhauser (University of Alberta) and Ariel Anbar (Arizona State University).

Visit the Symposium website at www.5ias.org for the latest details.

ABSTRACT SUBMISSION

Abstracts are invited addressing the four symposium themes and suggested sub-themes (full list available on the Symposium website).

The deadline for online submission is 12 February 2010, with authors informed of acceptance as an oral or poster presentation by 30 April 2010. Authors must register for the Symposium by 30 June 2010 to confirm inclusion of their presentation in the program.

Abstracts may only be submitted via the Symposium website, with set formatting requirements. Abstracts may be up to four A4 pages long, including one diagram and a reference list. Presentations, whether oral or poster, will be restricted to one per registrant, although registrants may co-author as many abstracts as they wish.

ORAL PRESENTATIONS

The oral presentations will be a mix of Keynote, Invited and submitted contributions.

Keynote Speakers have been allocated 40 minutes, including 5 minutes question time. The aim of the Keynote talks is to give both the specialist and generalist an up-to-date review of developments and likely future directions within each Theme.

All other oral presenters (Invited and submitted) will be allocated 20 minutes, including 5 minutes question time.

POSTER PRESENTATIONS

Poster sessions will form an integral part of the program, and each poster presenter will have an opportunity to highlight their key findings via a formal 5 minute PowerPoint presentation shown on a large video screen set up within the poster display area. Presenters should bring their presentation on a USB flash drive (thumb drive).

Posters will be displayed in the Grand Ballroom 2, where the refreshment facilities are located. The venue will be open from 8.00 am to 6.00 pm Monday to Wednesday, 6 to 8 September, and 8.00 am to 12.30 pm Thursday, 9 September.

A display board will be allocated for each poster and Velcro will be provided to attach posters to the board. The maximum display area allowed for each poster will be 1.75 metres wide by 1.15 metres high. The poster must include the title of the presentation and the authorship.

Posters will remain on display throughout the Symposium and presenters should be in attendance at their poster to answer questions throughout the poster session in which they are scheduled to make their presentation. Posters must be removed on Thursday 9 September between 12.30 pm and 2.30 pm.

Desks and electrical power will be available for poster presenters who wish to supplement their static displays with a computer display to aid informal discussions. Presenters must provide their own portable computers for this purpose.

SOCIAL PROGRAM

The following functions are organised for registrants and accompanying persons. Note that all functions will be "open bar" and non-smoking.

Sunday 5 September - Early registration and Icebreaker

Early registration will be available from 4.30 pm to 6.00 pm. An informal welcome reception will be held from 5.30 pm to 7.00 pm.

Monday 6 September - Core library visit and barbecue

After Monday's proceedings, registrants and accompanying persons are invited to visit to the Geological Survey of Western Australia's core library and enjoy a barbecue and refreshments. Transport will be provided to and from the venue, leaving at 6.15 pm and returning at 9.00 pm.

Tuesday 7 September - Symposium Dinner

The Symposium Dinner will be held in the Astral Room. Pre-dinner drinks will be served from 6.30 pm to 7.00 pm, and dinner from 7.00 pm to 10.30 pm.

Monday to Wednesday 6 to 8 September - Poster Session Sundowners

Refreshments will be provided during each of the Poster Sessions held in the Grand Ballroom 2 from 4.00 pm to 6.00 pm.

ACCOMPANYING PERSONS

A selection of Perth-based activities is given below, with many suitable for families.

Western Australian wildflowers: September is ideal for viewing wildflowers, and day tours and walks are available close to Perth. Kings Park is well worth a visit.

Vineyards: Day river cruises from Perth provide opportunities to visit vineyards and taste the wines of the Upper Swan Valley.

Rottneet Island: This small limestone island, 20 km offshore from Perth, provides an interesting day excursion by boat or plane.

Other day trips: Spend the day in the port city of Fremantle, take the train to Mandurah and enjoy some fish and chips, or visit the historic Avon Valley.

Harvey World Travel (Willetton) can help you with arranging activities. Contact willetton@harveyworld.com.au or telephone (61 8) 9332 2363.

Visit the official tourism website at www.westernaustralia.net for more ideas.

WORKSHOP

Yilgarn-Superior comparison

A one-day post-Symposium workshop will compare similarities and differences in the geology of the Yilgarn and Superior Cratons and, more specifically, the Abitibi Greenstone Belt and Eastern Goldfields Superterrane, to better understand the consequences for metal endowment.

Recent findings from research programs such as the Discover Abitibi Initiative, LITHOPROBE, and NATMAP projects in Canada, and the pmd*CRG and AMIRA Yilgarn projects, will be used to suggest avenues for future exploration and research opportunities. Presentations will touch on all major commodities, with a particular emphasis on gold, VMS and nickel mineralisation.

Key research and industry geologists from Canada and Australia will present new results and debate the geological and metallogenic implications of work carried out in both cratons over the past decade.

Date: Friday 10 September 2010 following the Symposium (post-Symposium excursions commence on Saturday 11 September)

Venue: Western Australian Cricket Ground (WACA), Nelson Avenue, East Perth

Cost: AUD275.00

Workshop is available to Symposium registrants only.

EXCURSIONS

Excursions will proceed only if a minimum number of full payments is reached by 30 June 2010. The Organising Committee reserves the right to cancel an excursion if there are insufficient participants.

If an excursion is oversubscribed or is cancelled because of insufficient participants, registrants will be offered the opportunity to transfer to another excursion or receive a full refund.

Excursions are available to Symposium registrants only. Places will be allocated strictly on a first-come first-served basis.

Pre-Symposium

1. Evolution of active plate margins: West Pilbara Superterrane, Fortescue and Hamersley Basins

Successions in the West Pilbara provide the best evidence that some form of modern-style plate tectonic processes was operating by at least ca 3.2 Ga.

This excursion will visit localities providing key evidence used in interpreting the geotectonic evolution of the West Pilbara Superterrane as a Mesoarchean active plate margin. It will include sections interpreted as forming fragments of an obducted

oceanic slab, an oceanic arc, a continental volcanic pull-apart basin, and boninite-like rocks and sanukitoids related to late-tectonic orogenic relaxation and slab-breakoff; collectively, these represent the world's oldest complete Wilson Cycle.

The excursion will also traverse the Fortescue and Hamersley Basins looking at the evidence for their tectonic settings from rifting at 2.8 Ga through a passive margin setting at 2.6-2.4 Ga, through to collision during the Ophthalmian Orogeny at 2.2 Ga.

Leaders: West Pilbara Superterrane - Dr Hugh Smithies and Dr Arthur Hickman (Geological Survey of Western Australia); Fortescue and Hamersley Basins - Dr Ian Tyler (Geological Survey of Western Australia)

Duration: 6 days (30 August to 4 September), starting and finishing in Perth

Transport: Perth-Karratha return flight, 4WD vehicles

Accommodation: Hotel/motel, station

Maximum participants: 15

Cost: AUD1,700.00

2. Controls on giant mineral systems in Yilgarn Craton

The past decade has seen remarkable advances in understanding the architecture and assembly of the Yilgarn Craton, as well as the absolute timing, genesis and structural modification of NiS, orogenic Au, intrusion-related Au and VMS systems within the context of the tectonic evolution of the craton.

This excursion will focus on the major mineral systems of the Neoproterozoic Eastern Goldfields Superterrane,

particularly the Au, NiS and VMS systems, and contrast them with Au and NiS systems of the Meso-Neoproterozoic Youanmi and Southwest Terranes of the central and southwest Yilgarn. Major deposits or camps to be visited* will include Kambalda (1.5 Mt Ni; >10 Moz Au); Kalgoorlie (100 Moz Au); Laverton (e.g. Sunrise >10 Moz Au; Wallaby >5 Moz Au), Southern Cross (e.g. Marvel Loch >2 Moz Au); Forrestania (e.g. Flying Fox >100 Kt Ni); and Boddington (>20 Moz Au, >800 Kt Cu). This will be the first field trip to cover the metallogeny of all of these terranes – a must for geoscientists exploring in Archean terranes worldwide.

* Given circumstances may change rapidly, underground mine visits cannot be guaranteed.

Leaders: Professor Cam McCuaig, Dr Steve Beresford and Dr John Miller (The University of Western Australia)

Duration: 6 days (30 August to 4 September), starting in Laverton and finishing in Perth

Transport: Perth-Laverton flight, coach

Accommodation: Hotel/motel, station

Maximum participants: 20

Cost: AUD2,600.00

Post-Symposium

3. Tracking the development of life on early Earth: Pilbara Craton, Fortescue and Hamersley Basins

This excursion will traverse 1.5 billion years of Earth history in the remote Pilbara region, to trace the early development of life on Earth.

It will start in Port Hedland, and travel south, camping at night under the stars of the southern hemisphere. In the ancient Pilbara Craton, we

will visit the oldest recorded stromatolites on Earth in the 3.48 Ga Dresser Formation and 3.40 Ga Strelley Pool Formation in the North Pole Dome, view the 3.46 Ga Marble Bar Chert, and inspect the controversial Apex chert (Schopf) locality, where putative microfossils have been reported. From there, we will continue south through the 2.78-2.45 Ga Mount Bruce Supergroup, including stops at stromatolitic carbonates of the ca 2.72 Ga Tumbiana Formation (Fortescue Group), and dolomite, shale, impact breccias, rhyolite and banded iron-formations of the ca 2.5 Hamersley Group in, and around, Karijini National Park.

On the last days, we will visit the transition from the banded iron-formations of the Hamersley Group into the ca 2.4-2.2 Ga Turee Creek Group, including the basal glacial deposits of the Meteorite Bore Member and overlying stromatolitic carbonates, and discuss the potential of this section as a Global Boundary Stratotype Section and Point (GSSP) for the Archean-Proterozoic. We will also visit the famous living stromatolites of Shark Bay on the way back to Perth.

Leaders: Dr Martin Van Kranendonk (Geological Survey of Western Australia), Professor Mark Barley (The University of Western Australia)

Duration: 8 days (11 to 18 September), starting in Port Hedland and returning to Perth

Transport: Perth-Port Hedland flight, 4WD bus

Accommodation: Camping

Maximum participants: 20

Cost: AUD1,850.00

4. Time transect through the Hadean to Neoproterozoic geology of western Yilgarn Craton

Rocks of every Archean era are present in the western Yilgarn Craton, with zircons dating back to the Hadean also represented in clastic sedimentary rocks.

This excursion will investigate a time slice from the Hadean zircons at Jack Hills through Eo-, Paleo-, Meso- and Neoproterozoic rocks of the Narryer and Youanmi Terranes. A wealth of new isotopic, geochronological, geochemical, and geophysical data will be presented, in the context of new geological mapping, to see what insights they give into evolving early Earth processes and the development of related mineral systems.

Starting in the Jack Hills, site of the oldest known zircons on Earth, the excursion will visit Eo- to Paleoproterozoic gneisses of the Narryer Terrane, and then the recently documented Meso- to Neoproterozoic stratigraphy of the Youanmi Terrane, including the large layered mafic-ultramafic intrusions such as the Windimurra Igneous Complex, among the oldest of these features on Earth. Representative granite suites will be placed in the context of the overall tectonic history.

Leaders: Professor Simon Wilde (Curtin University of Technology), Mr Stephen Wyche and Dr Tim Ivanic (Geological Survey of Western Australia)

Duration: 6 days (11 to 16 September), starting in and returning to Perth

Transport: 4WD bus

Accommodation: Camping

Maximum participants: 30

Cost: AUD1,250.00