

The Tasmanian Geologist

November 2022

Still a few meetings to see out 2022:

put them in your diary

November 15-16th Virtual GESSS 12-2PM

*We are planning to stream this in the Geology
Lecture theatre so come along!*

*November 22-24th STGSG King Island Field
Conference*

*December 1st Tasmanian Geoscience Forum,
Lakeside Lodge, Tullah*



NEXT MEETING:

**Thursday 10th
November
6:00 PM**

**Volcanism and Sedimentation
at three Submarine Caldera
Volcanoes: the VULKA-22
Voyage to the Kermadec
Arc/Rangitāhua**

Martin Jutzeler

Geology Lecture Theatre
University of Tasmania

Join us for drinks and nibbles
from 5:30 PM

NEXT MEETING:

Dr Martin Jutzeler presents Volcanism and Sedimentation at three Submarine Caldera Volcanoes: the VULKA- 22 Voyage to the Kermadec Arc/Rangitāhua

Submarine calderas pose multiple hazards to coastal communities, and the multiple active calderas in the Kermadec Arc/Rangitāhua offer excellent opportunity to study mechanisms of eruption and sedimentation. The March-April 2022 VULKA voyage to the Kermadec Arc/Rangitāhua investigated Havre, Macauley and Healy submarine caldera volcanoes. We conducted multidisciplinary surveys on the extra-caldera sediment sheets with piston coring, seismic reflection, deep-towed camera and bathymetry surveys. At Havre, the products of the 2012 eruption were specifically targeted to document syn- and post-eruptive transport and sedimentation mechanisms. Deep-towed camera footage allowed reconstruction of the isopleth and isopach map of the seafloor raft trail, whereas other locations showed strong sediment remobilization by ocean currents over the last decade. Life recovery correlates with isopleth and isopach maps. Seismic reflection surveys highlighted multiple generations of submarine landslides that dissected most of the caldera slopes, and seafloor footage suggest recent activity. At Macauley, the 5.7 ka caldera-forming eruption produced gigantic submarine sediment waves on the southern extra-caldera sector. Coring of the top surface of the sediment waves sampled remarkable cross-bedded and density graded pumice-lithic lapilli units. At Healy caldera, giant pumices and dense felsic dome blocks were sampled, some being probably from the 1400 a eruption.



Piston cores on deck of the RV Investigator ready to be extruded (Photo K. Orth).

Martin Jutzeler

Dr Martin Jutzeler is a volcanologist, sedimentologist and Senior Research Fellow at the University of Tasmania (UTAS). Martin started his studies at the



University of Lausanne (Switzerland), where he obtained a BSc, followed by a

MSc in volcanology. He then spent some time climbing active volcanoes in Mexico before starting his PhD on submarine volcanism at the University of Tasmania with Jocelyn McPhie and Sharon Allen. His post-doctoral projects were based at the University of Otago (New Zealand) and at the UK

National Oceanography Centre in Southampton. Martin came back to Tasmania for a lectureship contract followed by a post-doc on image analysis and volcanic facies reconstruction in mineralised terrains. Martin's research focusses on eruption and sedimentation of volcanic material in water using experiments, satellite imagery as well as samples and data from modern and ancient volcanic successions. Outputs of his research in submarine volcanism improve our knowledge of volcanic architecture and natural hazards. Martin led the Vulka-22 voyage earlier this year which is the focus of his presentation.

If you cannot make it in-person you can zoom in on the evening using the link below:

[Join meeting](#)

PREVIOUS MEETINGS

Thursday 27th of October Joint meeting with the Australian Geomechanics Society Clint Scott and Andrew Tyson presented Paradise Gorge - Rock Removal in Columnar Dolerite
30 people attended the evening and 16 were online.

It was clear that Clint and Andrew work well together at Pitt and Sherry. They provided a dynamic presentation of their involvement in making the Paradise Gorge section of the Tasman Highway safe for Tasmania's road users.

Paradise Gorge on the Prosser River funnels the Tasman Highway on its route to Orford on the Tasmania's east coast. The steep sides of the gorge are made of near vertical columns of Jurassic Dolerite. Some of the columns are also cut by subhorizontal joints that dip towards the road. The gorge area is known for frequent rockfalls and flooding.

Heavy rains in 2020 and early 2021 caused concern for the stability of the rocks above the road in one section of the gorge. Early investigations in 2021 and drone 3D laser scanning imagery suggested that one rock stack in particular was hazardous. The cracked column was leaning up to 6 degrees towards the road along a rubble-filled 20-25° joint. Further rain and potential freezing weather led to a risk assessment which recommended closure of the road.



Andrew Tyson with an image of the rock that started the process of assessment, risk reduction, mitigation, and remediation (Photo. K. Orth).

Although inconvenient for everyone in the community, the road closure also provided an opportunity to clear the area that had been surveyed of the most unstable rock stacks to reduce hazards in the future. Removal of the rocks involved airbags that would wedge the rocks to tipping point. Colluvial rubble and clays were removed with water from high pressure hoses. Gravel was put down to coat and protect the road surface from the falling rocks.

Once all the rocks had been removed safely the slope underwent remediation to allow better slope stability before the road was reopened. Rocks are monitored for any instability in real time.

Clint and Andrew peppered their talk with videos of the operations.



Andrew Tyson (left) and Clint Scott (right) are presented with their speaker's wine by Matt Ferguson (far left). Rosie the Utah Raptor (far right) enjoyed it too (Photo. K. Orth).

If you want to catch up on this presentation the video will be on our website soon.

Earth Futures Film Festival Night **The results are in now for the winners of the Earth Futures Film Festival.**

The award ceremony is uploaded to the website so you can catch up on all the winners. We did see some of them on during our film evening.

View the winners and explore others on the Earth Futures website
<https://www.earthfuturesfestival.com/>

FREE Training in communications

Take advantage of the offer to GSA members-only to Geologize's critically acclaimed course Practical Geocommunication for 2022 for free! Geologize is a global leader in providing training to geoscientists who wish to communicate more effectively with their audience.

Geologize teaches geoscientists to bring the public to a greater understanding and appreciation of our planet through effective and powerful communication.

When you complete *Practical Geocommunication*, you will receive an accredited CPD-valid certificate.

"Passion. Education. Sustainability. We believe that if people understand how the planet works, they will appreciate and care about it more. Geologize seeks to create and facilitate the creation of tangible and emotional connections between the general public and the world in which they live." Haydon Mort, Geologize.

Contact the GSA: info@gsa.org.au to get your code to this GSA-funded initiative (see flyer at the end of the Newsletter)

STUDENTS

Hello students. Undergraduates will be mainly finished their exams in the final part of the semester for 2022. We wish you well in your summer break pursuits.

If you feel like an outing after your studies or a break if you are a PhD student please consider the Geoscience Forum on the west coast of Tasmania on December the 1st. AIG are organizing a workshop on the preceding day and there are field trips being organized for the day after. It is a great opportunity to get out and see some of the geology on the west coast of Tasmania and importantly to network and meet people from all facets of geosciences (GSA, AIG and AusIMM) in Tasmania in one place! Hurry as places are filling fast. There may be funding available to help

students get to Tullah. Please send your enquiries to Sheree.Armistead@utas.edu.au

GESSS the student-run conference for students (and everyone else) is on November 15-16th Virtual GESSS 12-2PM

The local division are planning to stream the conference in the geology lecture theatre so drop in for some lollies and company.

Student Membership Benefits

Olivia Wilson won the Honours Endowment Scholarship for Tasmania in her honours year in in 2020. Despite the lockdowns of that year, she eventually managed to get into the field to spend her money. Olivia is now employed by Entura in Hobart. She was an undergraduate member of the GSA and here is her testament to how it can be helpful for your future.

‘Being a student member of the Geological Society of Australia enriched my experience of studying geology. Especially important to me were the opportunities to make connections and learn about the research of other society members. As a student, it is also invaluable to have an environment in which you can interact with geoscientists from all career stages – hearing their experiences allows you to develop your own career aspirations. GSA membership also demonstrates that you have a level of passion and commitment to your field beyond the compulsory courses in your degree, helping your resume stand out as you transition to professional life.’



Olivia Wilson (supplied by O. Wilson)

You can become a member here <https://www.gsa.org.au/>

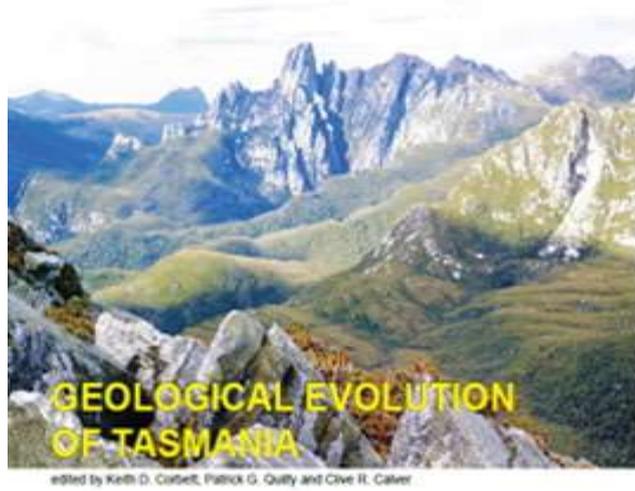
Any queries about your membership contact our membership officer Rebecca Carey (Rebecca.Carey@utas.edu.au).

**Undergraduate Student Members
Special price on the
Geological Evolution of Tasmania!**

**Become a GSA Member and you can
obtain ‘The Geological Evolution of
Tasmania’ for \$75 including GST.**

[Students Join Here](#)

Once you are complete your membership please contact Caroline Mordant for your special price book. See details below



The flagship publication of the Tasmanian Division of the GSA, 'The Geological Evolution of Tasmania' (Special Publication 24 of the GSA) is available for ordering. All details are available on a specific part of the Utas CODES web site: http://www.utas.edu.au/_data/assets/pdf_file/0003/55313/Flyer_Order.pdf

Copies of the book can be obtained personally from Caroline Mordant (publications@CODES.utas.edu.au) or phone on +61 3 6226 7537.

Members Price is A\$90 + GST + postage where appropriate. Undergraduate student price is \$75. Postage can be avoided by buying in person from Caroline Mordant in Earth Sciences (University of Tasmania). The book is also available at Fullers Bookshop and at TMAG in Hobart, and in the Devonport Bookshop, Devonport. Prices at these sites may vary from GSA prices, and the member price is not available at these sites either.

Other Meetings

22-24 November 2022 SGTSG Field meeting

King Island Postponed from February 2022.

Biennial meeting at King Island to discuss the latest research and developments in tectonics and structural geology with 3 half day field trips.

Limited to 60 people. For more details:

<http://www.sgtsg.org>

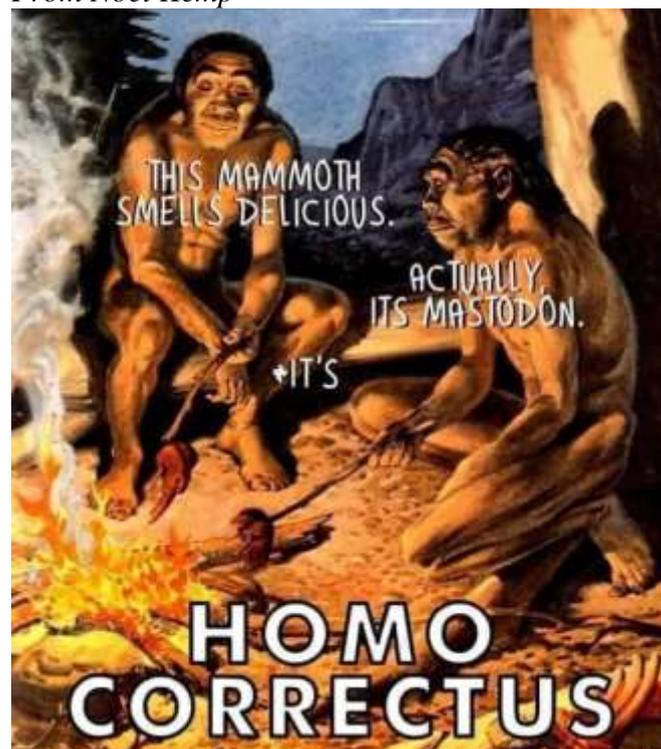
November 30th

One day online AIG Workshop 'The Project Geologists Toolkit' For more information check out this website

<https://www.aig.org.au/events/project-geologists-toolkit-30-november-2022/>

Final Words

From Noel Kemp



GSA Tasmania Division Committee 2022-2023

Chair: Karin Orth

Secretary: Sebastien Meffre

Sebastien.Meffre@utas.edu.au

Treasurer: Claire Kain

Committee Members:

Sheree Armistead

Jeremy Asimus

Rebecca Carey (Membership)

Acacia Clark (Student Rep)

Jacqueline Halpin

Wei Xuen Heng

Claire Kain (Geotourism)

Peter McGoldrick

Sebastien Meffre

Phil Sansom (Education)

Olivia Wilson

Geological Society of Australia website:

www.gsa.org

and our own website

<http://www.gsatasmania.org>

Any news, announcements or interesting photographs of Tasmanian Geology you would like to include in the next Newsletter, please send it through via email to karin.orth@utas.edu.au prior to the 14th of December 2022

GEOLOGIZE

NOW FREE FOR GSA MEMBERS

Do you want to strengthen your geoscience communication skills? Maybe you want to educate a non-specialist audience about why geoscience is important.

*If you do, take advantage of the GSA members-only license to Geologize's critically acclaimed course **Practical Geocommunication** for 2022 for **FREE!***

Geologize is a global leader in providing training to geoscientists who wish to communicate more effectively with their audience.

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What do you need to do next?

Contact the GSA: info@gsa.org.au to get your code to this GSA-funded initiative.

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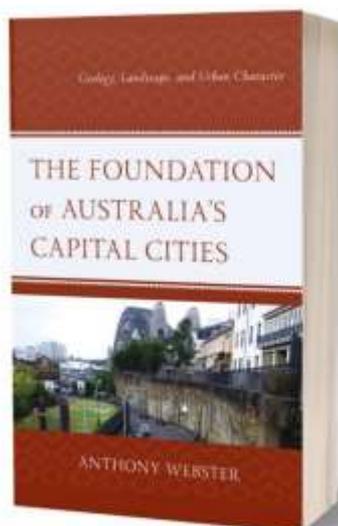
NEW FROM
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THE FOUNDATION OF AUSTRALIA'S CAPITAL CITIES: GEOLOGY, LANDSCAPE, AND URBAN CHARACTER

By **Anthony Webster**



“Webster has adopted a novel and extremely interesting approach in this book, which discusses the siting of the major cities of Australia. Tony has blended a plethora of rich historical accounts with a detailed discussion of the controlling local features of water supply, physiography, landscape and geology to provide a comprehensive and thought provoking account of the establishment and growth of our capital cities. I can highly recommend this book to all who are interested in Australian settlement history and the factors that affected the establishment of our major urban centres.”

— Ross Large, University of Tasmania

ABOUT THIS BOOK

The Foundation of Australia's Capital Cities is the story of how the places chosen for Australia's seven colonial capitals came to shape their unique urban character and built environments. Tony Webster traces the effects of each city's geologically diverse coastal or riverine landform and the local natural materials that were available for construction, highlighting how the geology and original landforms resulted in development patterns that have persisted today.

ABOUT THE AUTHOR

Anthony (Tony) Webster is adjunct senior lecturer of geology at the Centre for Ore Deposits and Earth Sciences (CODES), University of Tasmania and honorary senior research fellow at the Sustainable Minerals Institute (SMI), University of Queensland.

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Hardback:	ISBN 978-1-4985-9795-1	March 2022	Regular price: \$120.00, £92.00	After discount: \$84.00, £64.40
ebook:	ISBN 978-1-4985-9796-8	March 2022	Regular price: \$45.00, £35.00	After discount: \$31.50, £24.50

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Tasmanian Geoscience Forum 2022



GSA Tasmania Division, AusIMM and AIG are proud to bring you the

12th Tasmanian Geoscience Forum

WHEN

**Thursday 1st of December 2022
9AM – 5 PM**

VENUE

**Tullah Lakeside Lodge
Cnr Meredith Street &, Farrell Street Tullah TAS 7321**

Field Trip options on the Friday 2nd Dec TBA

**Registrations are open
Please visit the website below for more information**

<https://www.ausimm.com/conferences-and-events/community-events-details/12th-annual-tasmanian-geoscience-forum-geobash/>

Hurry Filling Fast