Activity Report 2025 – Task Forces / Coordination Committees

Project Title: Lithosphere of East Antarctica
Project No.: 2021-CC5
PI(s): Anya Reading, Matt King, Kate Selway

1. Highlights of recent ILP Task Force work/results

a) Side meetings with a focus on contributing contemporary best practice in Lithosphere research to a new Scientific Committee on Antarctic Research (SCAR) scientific research program proposal.
b) Supported for 11 Early Career researchers to attend the below meetings.
c) Website established for the coordination of field deployments.
d) Enabled early preliminary results sharing related to major Antarctic field seasons by US National Antarctic Program (led by Wiesen Shen, Stoneybrook) and Australian National Antarctic Program (led by Anya Reading).

2. Presence at international meetings/workshops (this year)

EGU 2025, Vienna, Austria, co-host of side meeting, session contributions.
ISAES 2025, Punta Arena, Chile, 18-25 Aug, co-host of side meeting.
IASPEI 2025, Lisbon, Portugal, 31 Aug to 5 Sept. ILP Session Contributions.

3. Important publications of ILP Task Force members (max. five)

Hansen, S.E., Emry, E.L. East Antarctic tectonic basin structure and its implications for ice-sheet modeling and sea-level projections. *Commun Earth Environ* **6**, 138 (2025). https://doi.org/10.1038/s43247-025-02140-4

Koulali, A., King, M. A., Clarke, P. J., Nield, G. A., & Bentley, M. J. (2025). Geodetic observations reveal near-zero uplift rates in the transantarctic mountains: Implications of surface mass loading deformation. *Geophysical Research Letters*, 52, e2025GL119082. https://doi.org/10.1029/2025GL119082

Li, L., Aitken, A. R. A., Gross, L., & Codd, A. (2025). Resolving mantle composition suggests a warmer East Antarctic mantle. *Journal of Geophysical Research: Solid Earth*, 130, e2024JB029677. https://doi.org/10.1029/2024JB029677

Abram, N.J., Purich, A., England, M.H. *et al.* including Stål, T., Reading, A.M. and King, M. A. Emerging evidence of abrupt changes in the Antarctic environment. *Nature* **644**, 621–633 (2025). https://doi.org/10.1038/s41586-025-09349-5

Mareen Lösing, Alan R.A. Aitken, Jörg Ebbing, et al. including Stål, T. and Reading, A.M. Linking Tectonics and Crustal Thermal Properties in Southwestern Australia and East Antarctica Through Coupled Gravity and Magnetic Analysis. *Journal of Geophysical Research: Solid Earth (accepted, December 2025).*

4. New contacts (this year)
Alan Aitken, University of Western Australia
Guillaume Duclaux, University of Cote d'Azur

5. Usage of ILP funding (this year)
(Including funds carried over from previous years)
Euro 13,100 – ECR Travel Support to attend above-listed / related meetings
Euro 580 (approx.) – Support for website creation (amount tbc, pending exchange rate confirmation of #GBP 500).

6. Activities planned for 2026
2025 was the final year for this Coordinating Committee. Over 5 years has provided valuable input in the form of 'state of the art' lithosphere investigation workflows in geology and geophysics to ongoing entities such as the SCAR Antarctic Geological Evolution (Earth System Interactions) Scientific Planning Group (application pending), and to the ILP Solid Earth Under Greenland Coordinating Committee (newly forming).

In line with the spirit of ILP in supporting Early Career Researchers, the majority of funds have been directed at enabling ECRs to participate in planning processes and contribute to scientific meetings more generally. The planning processes are especially important for Antarctic lithosphere research in the run up to the International Polar Year of 2031/32.

Appendixes:
None

Pictures of activities in 2025:

Captions:

MT_station_MM_NAD.png
Maria (Coti) Manassero (magnetotelluric station field leader, left) explains how to optimize an MT station electrode installation to Niam Askey-Doran (PhD student, right). Training a growing cohort of researchers in geophysics field skills is an important component of Antarctic activities. Credit = Anya Reading (Project Leader).

Seis_station_AR.png
Anya Reading (Chief Investigator) downloads seismic data from a site near the Browning Penisula, East Antarctica, adjacent to the fast-changing Vanderford Glacier. Credit = Arno Payan (Field Guide).