



AGATA
ANTARCTIC GEOSPACE AND
ATMOSPHERE RESEARCH



Scientific Research Programme Planning Group (PPG)

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The AGATA PPG is submitting to SCAR a Scientific Research Programme (SRP) to significantly advance the current knowledge of the Antarctic atmosphere and geospace, also in the bipolar, interhemispheric context.

Currently only 3 SRPs are run and none of them about atmosphere and geospace.

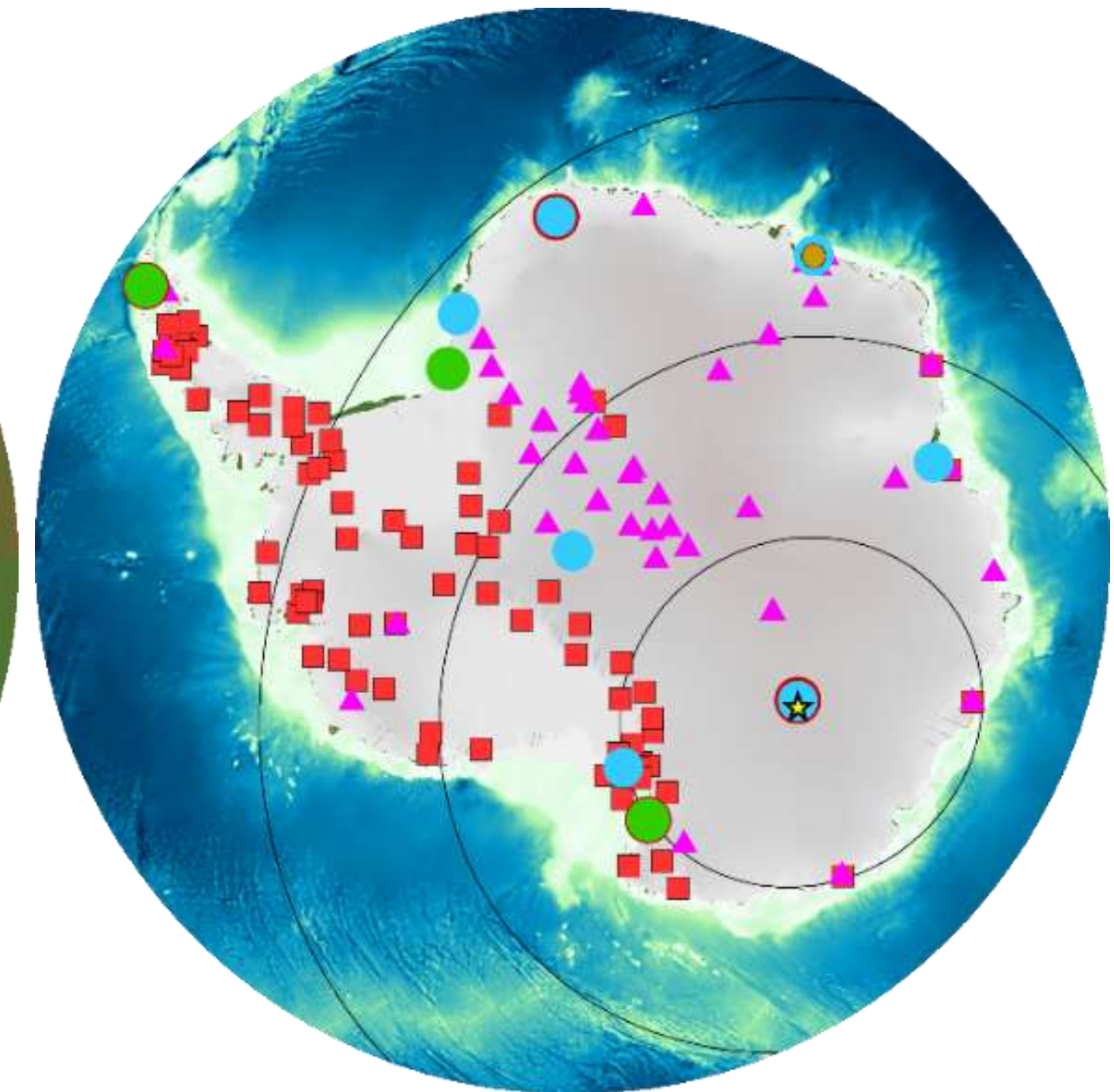
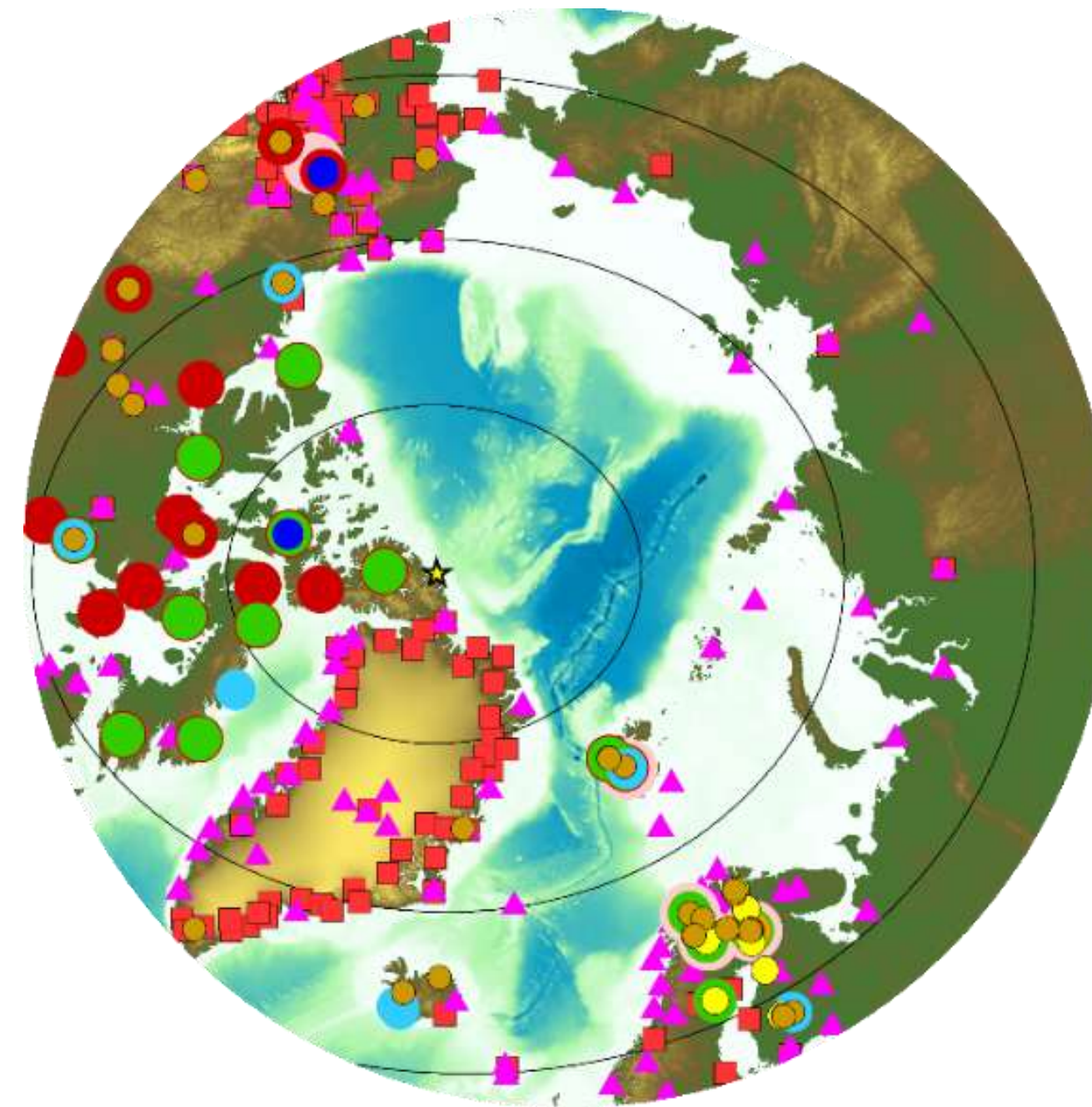
References:

1st SCAR Antarctic and Southern Ocean Science Horizon Scan

SCAR Strategic Plan 2023-2028

Kennicutt et al. Polar research: Six priorities for Antarctic science. Nature (2014)

Alfonsi et al. Review of Environmental Monitoring by Means of Radio Waves in the Polar Regions: From Atmosphere to Geospace. Surv Geophys (2022)



Open questions

- ✓ How are different atmospheric layers coupled in the polar regions?
- ✓ How does the upper polar atmosphere respond to increased geomagnetic activity, including energy transfer from space?
- ✓ How does the whole polar atmosphere impact short- and long-term climate variations?

Open questions identified in the 1st SCAR Antarctic and Southern Ocean Science Horizon Scan

Open Question # 71 *“The understanding of the coupling between the ionosphere and the neutral atmosphere in relation to the inter-hemispheric symmetries and asymmetries”*

Open Question # 72 *“The assessment of the impact of the polar atmosphere on the technology and on the humans at ground level or in the geospace environment”.*

Open Question # 73 *“The investigation of the atmospheric waves and their role in the vertical coupling between the upper and lower atmosphere”.*

SCAR Strategic Plan 2023-2028

“Atmospheric, astronomical, and astrophysical scientists can also use the Antarctic to understand fundamental questions about the universe and the physical phenomena occurring in the Earth’s upper atmosphere”.

Six priorities for Antarctic science identified by Kennicut et al. (2014)

«Work together [...] Coordinated international efforts that engage diverse stakeholders will be crucial.»

Timeline

- ✓ Revision of the SRP proposal (by the end 2023)
- ✓ Submission of 'letter of intent' to submit a proposal to the 2024 Delegates' Meeting (February 2024)
- ✓ Submission of the final version of the SRP proposal (May 2024)
- ✓ Presentation of AGATA proposal to SCAR Delegates' meeting (August 2024)



The next SCAR Open Science Conference will be held in Pucon, Chile (19-23 August 2024)
AGATA proposed session: *From atmosphere to geospace: collaborative efforts in the polar regions*
AGATA sponsored mini symposium: *Cross-cutting activities for geosciences, atmospheric physics and space sciences*



The next SCAR Delegates' meeting will be held in Punta Arenas, Chile (August 2024)
Inform your national delegate about AGATA!

To learn more:

www.scar.org/science/agata/home/



Alfonsi, L., Bergeot, N., Cilliers, P. . et al. Review of Environmental Monitoring by Means of Radio Waves in the Polar Regions: From Atmosphere to Geospace. *Surv Geophys* 43, 1609–1698 (2022). <https://doi.org/10.1007/s10712-022-09734-z>



Thanks!