

Media Release

Chiefs of Staff, News Directors

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Drones go south in late season sea-ice study

University of Tasmania researchers will use remotely piloted aircraft and a decade-long catalogue of data from diving elephant seals when they join a late-season Antarctic science mission on the US icebreaker *Nathaniel B Palmer*.

Nathaniel B Palmer sails from Hobart tomorrow to investigate the pathways of relatively warm ocean water from the sub-surface of the Southern Ocean onto the Antarctic continental shelf, a process believed crucial to the current melting of ice shelves.

The Australian scientists, led by Dr Guy Williams from the Institute for Marine and Antarctic Studies (IMAS), have been invited to participate in the oceanographic program. Dr Williams, an Australian Research Council Future Fellow, said the 40-day voyage will provide unique access to the late-season advancing sea ice pack in the region between Victoria Land and Prydz Bay.

“Data we have from monitoring the behaviour of elephant seals is providing exceptionally valuable clues about oceanographic conditions adjoining the continental shelf. Targeted measurements from shipboard instruments will investigate this in detail, and during the voyage we will deploy seven Argo autonomous profilers specially fitted to manoeuvre in sea-ice conditions and that will potentially provide us with year-round information on water temperature changes,” he said.

Williams, together with Hokkaido University scientist and former Tasmanian sea-ice specialist, Dr Alex Fraser, and oceanographic University of Tasmania PhD candidate Ms Eva Cougnon, will also use drones in a pilot study to acquire aerial images of sea ice to determine floe size distribution. The drones have been developed with Dr Arko Lucieer and Dr Darren Turner from the University’s TerraLuma facility.

This work continues the collaboration between Lamont-Doherty Earth Observatory at Columbia University, the University of Tasmania and the Antarctic Climate and Ecosystems Cooperative Research Centre. *Nathaniel B Palmer* sails on March 24 and is scheduled to return to Hobart on May 3.

- Background on sea ice: <https://theconversation.com/why-is-antarctic-sea-ice-growing-19605>
- Sea ice video from drones-
https://www.dropbox.com/s/mqlm0kqgmnmw1/GOPR9893_cropped.MP4?dl=0

- Interview – sea ice and global warming:
<https://www.youtube.com/watch?v=UDS5AAYIVj4>

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