Dr Gwyther said melting of the ice shelves threatens their role as a buttress that blocks the progress of ice sheets draining from the Antarctic.

“Ocean-driven melting at the base of ice shelves is already the main contributor to mass loss from the Antarctic ice sheet.

“A reduction in the buttressing effect of ice shelves is a negative feedback that can lead to glacial acceleration and a further increase in their contribution to mean sea level.

“It is therefore vital that scientists continue to monitor and better understand the changes taking place underneath the Antarctic ice.

“The unique access and data collection capability provided by AUVs means they can play a key role in this global research effort, which we are contributing to in collaboration with our local and international colleagues,” Dr Gwyther said.

In February this year *nupiri muka* completed a 60-kilometre round-trip beneath the sea ice adjacent to the Thwaites Glacier as part of a Korean voyage in the Amundsen Sea region of West Antarctica.

The AUV and the two glacier expeditions were funded by the Australian Research Council (ARC) through the Antarctic Gateway Partnership and housed and main