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UND MEERESFORSCHUNG

## Premiere

# Polar 6 is the first German research aircraft to traverse the North Pole

Researchers from the Alfred Wegener Institute measure sea-ice thickness in the Arctic

[29. August 2017] At 2:10 pm UTC on 22 August 2017, the Polar 6 became the first German research aircraft to fly over the North Pole. The aircraft "departed from (10:11 am UTC) and returned to (5:00 pm UTC) Station North (81.5°N, 16W)", as Dr Thomas Krumpen reported in an email sent from Greenland.



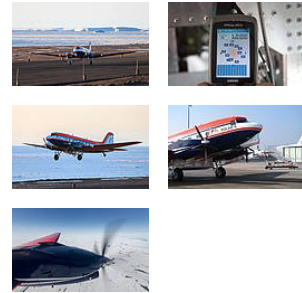
The sea-ice physicist from the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) is heading the current measuring campaign, TIFAX (Thick Ice Feeding Arctic Export), in the course of which the participating researchers will measure ice thickness with the help of a laser scanner, and with an electromagnetic probe towed behind the aircraft, dubbed EM-Bird.

The research area lies to the north of the Fram Strait between Greenland and Svalbard, where the transpolar drift transports sea ice from the Arctic Ocean. The ice is currently 1.5 metres thick north of the Fram Strait - ca. 40 centimetres thicker than the 2016 measurement. "That's most likely due to a higher percentage of several-years-old ice in the area we chose to measure this year. Nevertheless, the numbers are roughly 30% below those from 2001 and 2004," explains Krumpen. The prevailing winds helped boost Polar 6's range. Further, the aircraft took along only a handful of measuring systems for this flight, making it considerably lighter - and allowing the researchers on board to extend their measurements to the northernmost point on the planet for the first time.

AWI researchers have been measuring the thickness of the sea ice for several years, so as to investigate long-term changes and year-to-year variability, important indicators of climate change. Thickness measurements from the air also help validate the data gathered by the satellite CryoSat2. In turn, both methods are complemented by direct measurements taken on the ice at regular intervals, e.g. in the context of expeditions with the research icebreaker Polarstern.




In addition, the researchers successfully deployed a GPS buoy by parachute during their flight over the North Pole. The buoy, which transmits its position (and with it, information on ice drift) via satellite, is one of several that the AWI has distributed in the drifting Arctic sea ice. The buoys' progress can be tracked at the [institute's sea-ice portal](#).

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## Contact

### Press Office

 Folke Mehrtens  
 +49(471)4831-2007  
 [Folke.Mehrtens@awi.de](mailto:Folke.Mehrtens@awi.de)

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The Alfred Wegener Institute pursues research in the polar regions and the

The TIFAX campaign will continue through early September, after which the Polar 6 will be prepared for the Antarctic season in its hangar at Bremen Airport.

oceans of mid and high latitudes. As one of the 19 centres of the Helmholtz Association it coordinates polar research in Germany and provides ships like the research icebreaker Polarstern and stations for the international scientific community.

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