

Linking postglacial landscapes to glacier dynamics using swath radar at Thwaites Glacier, Antarctica - Supporting Data

[Published in support of a paper by the same name, published in “Geology” in 2019]

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This archive contains the following files:

Metadata.pdf

Radar point measurements of bed elevation, produced by swath radar processing, used to generate the gridded bed topography. Note for future users: the expected accuracy for points central to the swath is higher than the expected accuracy for points measured far off-axis.

SwathPointMeasurements_v2_20091224_01.txt
SwathPointMeasurements_v2_20091228_01.txt
SwathPointMeasurements_v2_20091228_02.txt
SwathPointMeasurements_v2_20091229_01.txt
SwathPointMeasurements_v2_20100101_02.txt
SwathPointMeasurements_v2_20100103_01.txt
SwathPointMeasurements_v2_20100103_02.txt
SwathPointMeasurements_v2_20100104_01.txt
SwathPointMeasurements_v2_20100112_01.txt
SwathPointMeasurements_v2_20100112_02.txt

Gridded bed topographies (Polar Stereographic) produced from above point measurements:

Thwaites_SwathBedTopography_Downstream.nc
Thwaites_SwathBedTopography_Upstream.nc

Gridded bed topographies (local grid system) produced from above point measurements:

GriddedBed_Downstream.mat
GriddedBed_Upstream.mat

Each .mat file contains the following 5 variables:

x_coord: Polar stereographic x coordinate (in meters), geolocation for bed_elev

y_coord: Polar stereographic y coordinate (in meters), geolocation for bed_elev

lat: Latitude grid, geolocation information for bed_elev

long: Longitude grid, geolocation information for bed_elev

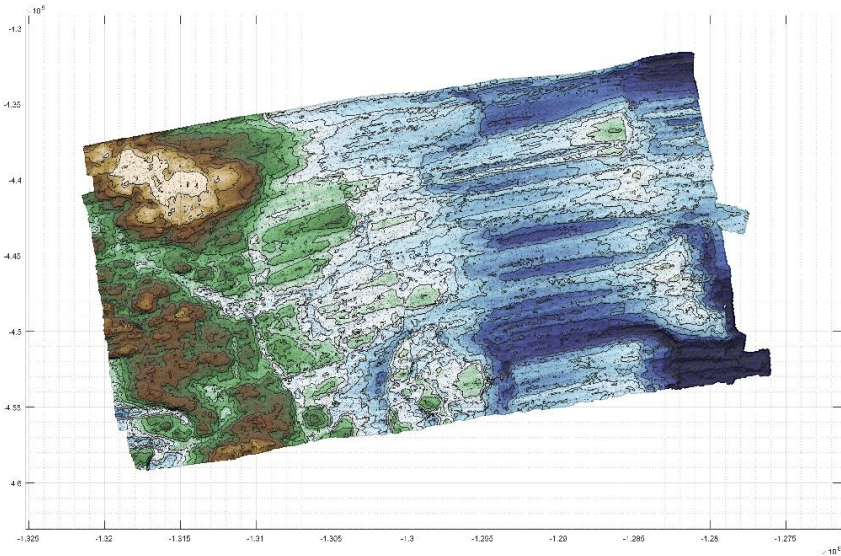
bed_elev: The elevation of the ice sheet base (relative to WGS84) in meters

All elevations are referenced to the WGS-84 ellipsoid. Unless otherwise noted, x and y coordinate information is provided in EPSG:3031 Antarctic Polarstereographic coordinates.

[File Update Note – 12/09/2025] – It was discovered that there was a precision error in the originally uploaded files. They were reproduced at full precision and re-uploaded in December 2025. You can find the originally uploaded files in the zipped archive within this repository.

The provided topographies should appear as follows:

Upstream:



Downstream:

