

## **Supplementary Figures**

**Figure S1** - Coverage of Sentinel-1 1-day repeat imagery

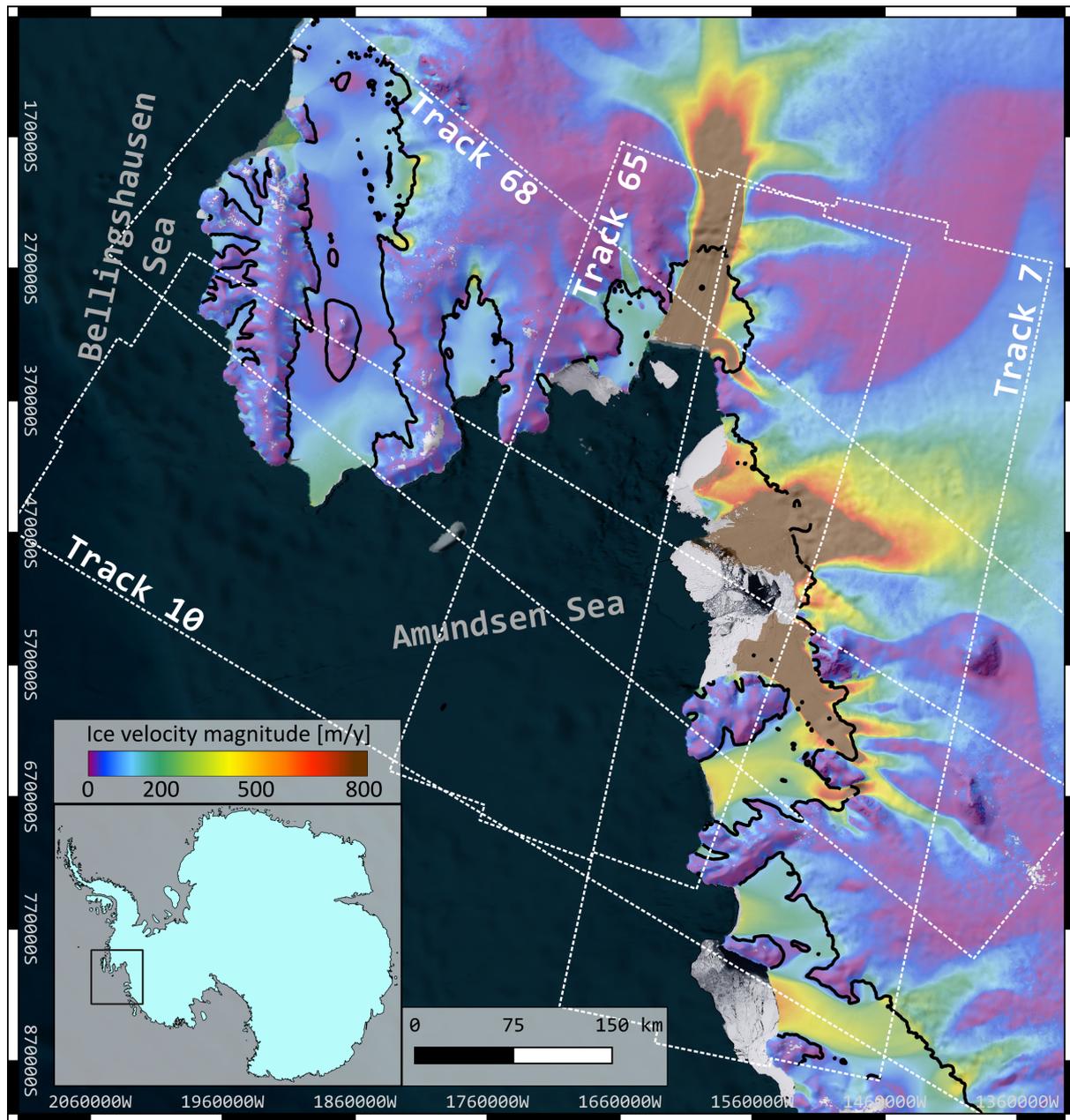
**Figure S2** - Double-difference interferograms, GL delineations, and bed elevation at Cosgrove and Getz Ice Shelves

**Figure S3** - Indications of seawater intrusions behind the grounding line at Thwaites

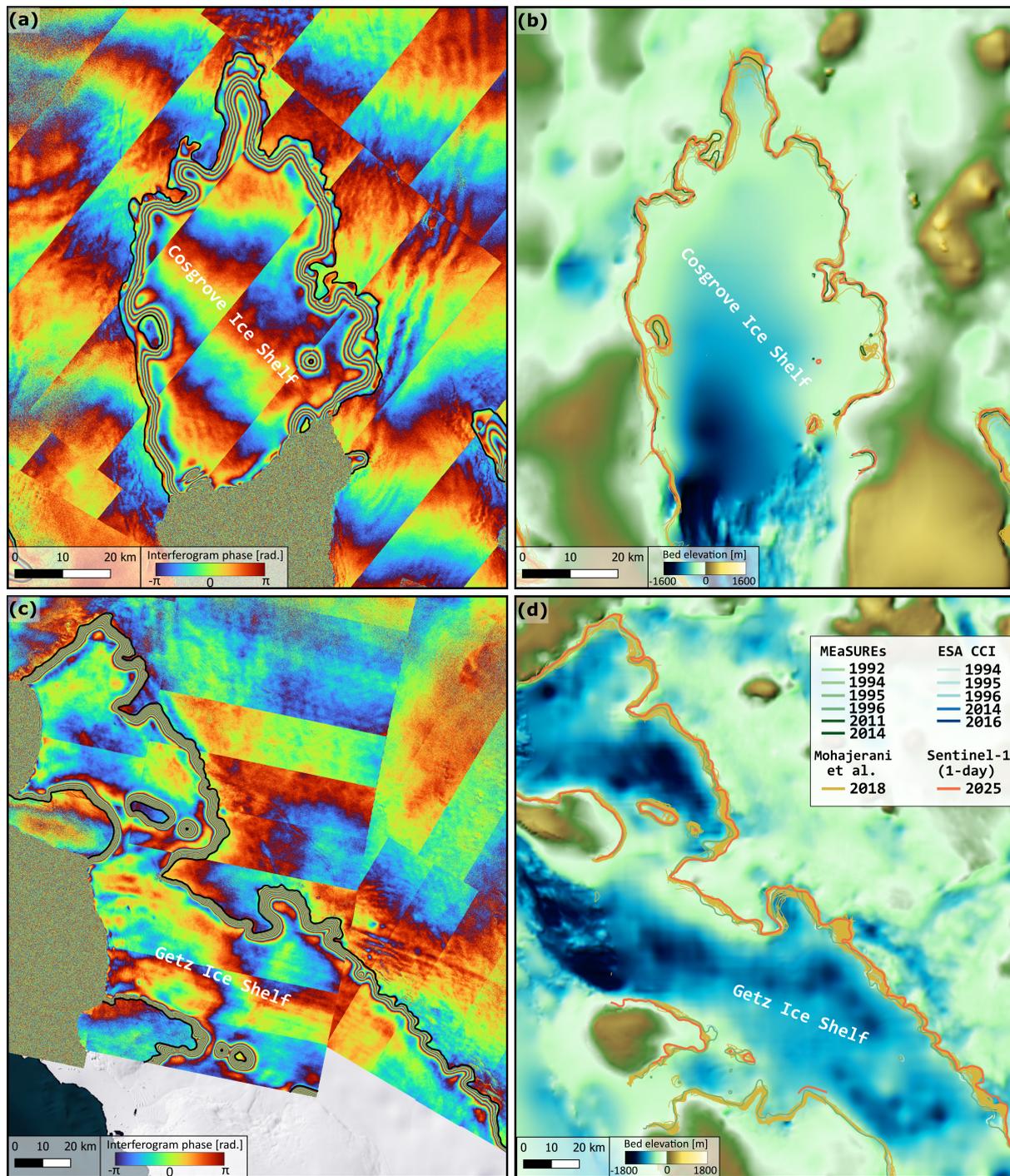
5 **Figure S4** - Examples of Sentinel-1 double-difference interferograms with 12-, 6-, and 1-day temporal baselines

## **Supplementary Tables**

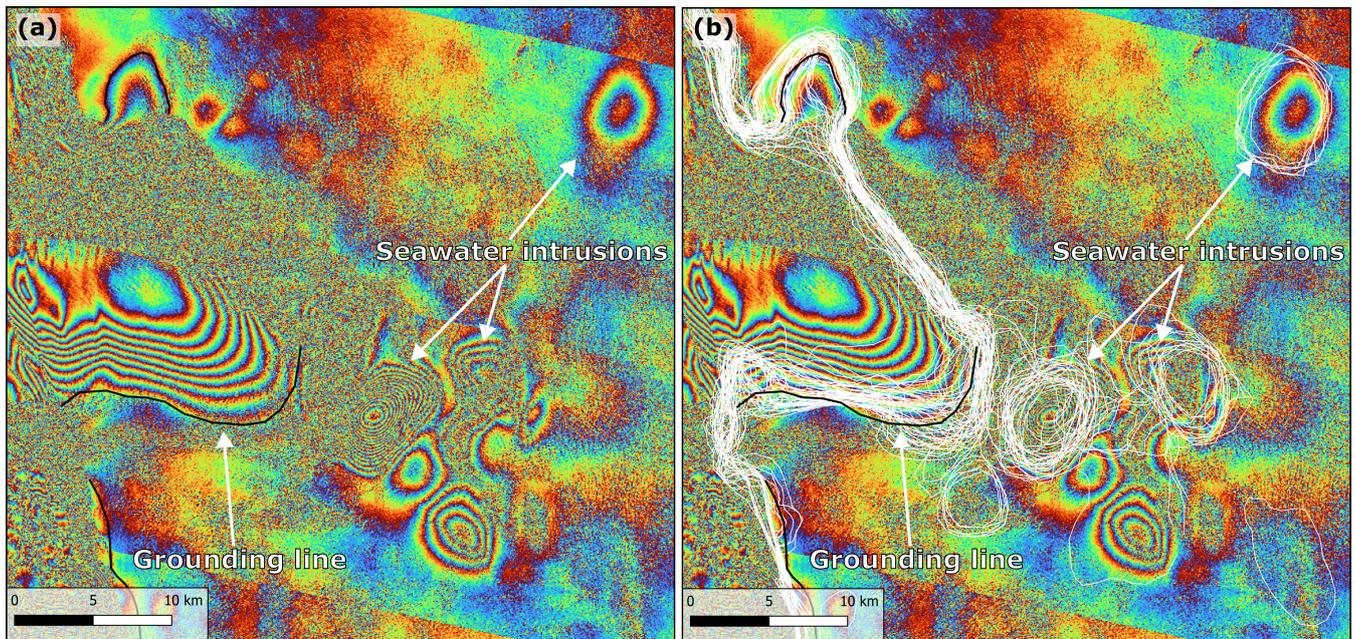
**Table S1** - Acquisition dates of Sentinel-1 images used in double-difference interferograms



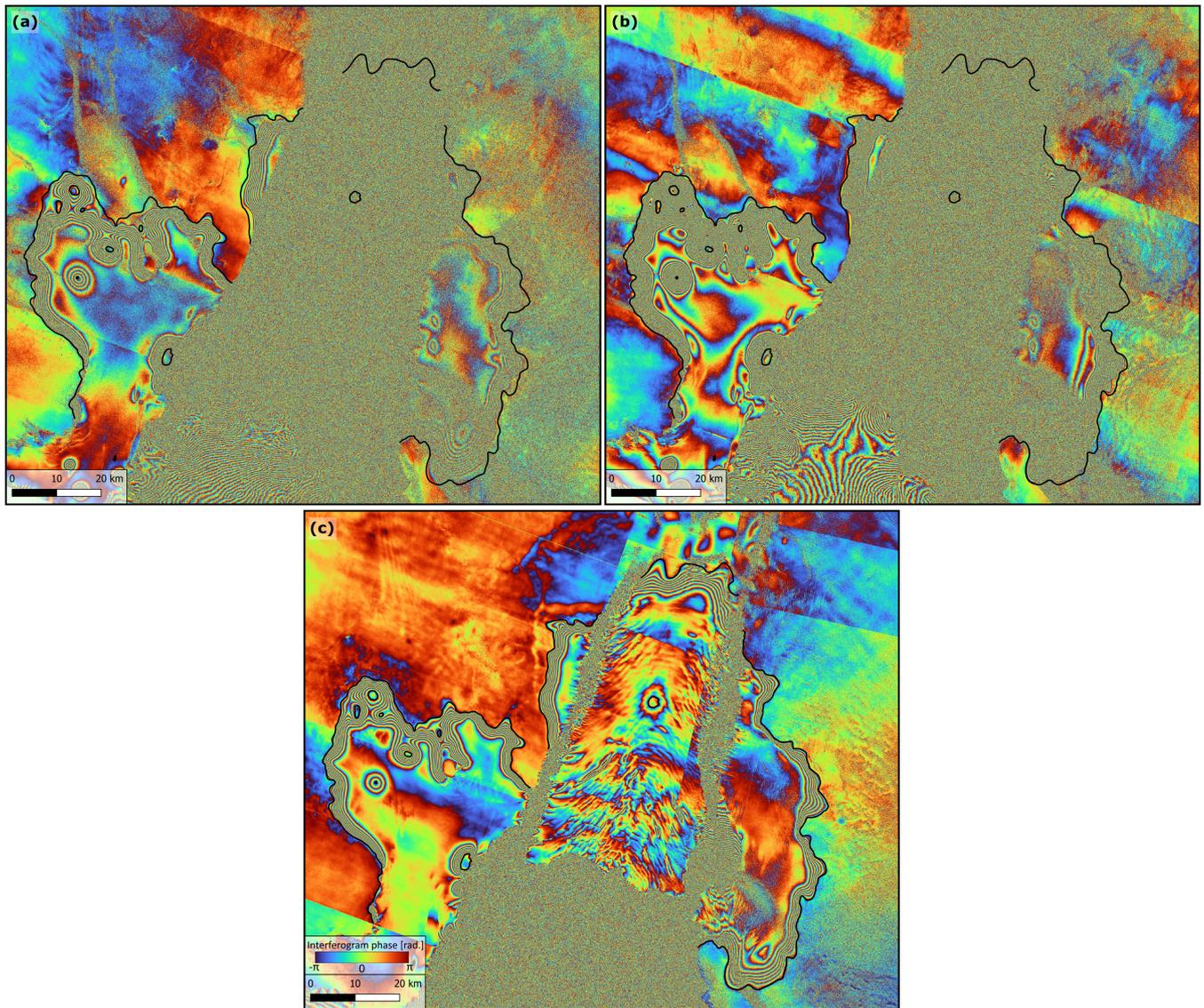
**Figure S1.** Coverage of the Sentinel-1 1-day repeat-pass data set from January-March 2025 in the Amundsen Sea Embayment. The various tracks (7, 10, 65, 68) are labeled and indicated by white dashed polygons. The final 2025 grounding line delineation is indicated by black lines. The background map shows ice velocity magnitude from MEaSURES (Rignot et al., 2017).



**Figure S2.** (a) 2025 Sentinel-1 1-day double-difference interferogram and and GL delineation indicated by black lines and (b) bed elevation and grounding line delineations (see legend) over Cosgrove Ice Shelf. (c) 2025 Sentinel-1 1-day double-difference interferogram and and GL delineation indicated by black lines and (d) bed elevation and grounding line delineations (see legend) over Getz Ice Shelf. Yellow lines are 2018 GL delineations from Mohajerani et al., (2021).



**Figure S3.** (a) Sentinel-1 double-difference interferogram from Thwaites Glacier (acquisition dates 17th-18th and 29th-30th January 2025) with the updated grounding line product indicated by the black line and apparent seawater intrusions, in the form of dense circular fringe patterns, indicated by white arrows. (b) same as in (a), but with white lines indicating seawater intrusions (and grounding line locations) delineated by Rignot et al. (2024) from ICEYE March-June 2023 data.



**Figure S4.** Examples of Sentinel-1 double-difference interferograms from Pine Island Ice Shelf using interferograms with temporal baselines of (a) 12 day, (b) 6 days, and (c) 1 day (same as Figure 2b in the main text). Acquisition dates for panel (a) are 20180215-20180227 and 20180221-20180305, for panel (b) 20180221-20180227 and 20180227-20180305, and for panel (c) 20250121-20250122 and 20250202-20250203. The black lines indicate the 2025 grounding line delineation (in all panels).

Track	Date 1	Date 2	Date 3	Date 4	Figure
7	20250117	20250118	20250129	20250130	Fig. 2c
7	20250129	20250130	20250210	20250211	-
7	20250210	20250211	20250222	20250223	-
7	20250222	20250223	20250306	20250307	Figs. 2d and S2c
10	20250129	20250130	20250222	20250223	Fig. S2c
65	20250121	20250122	20250202	20250203	Fig. 2b
65	20250202	20250203	20250214	20250215	-
65	20250214	20250215	20250226	20250227	-
68	20250121	20250122	20250214	20250215	-
68	20250121	20250122	20250226	20250227	Fig. S2a
68	20250214	20250215	20250226	20250227	Fig. 2a

**Table S1.** Acquisition dates for the generated Sentinel-1 double-difference interferograms. The final column indicates which Figure each double-difference interferogram is displayed in. Dates 1 and 2 indicate the acquisitions used in the first interferogram, while Dates 3 and 4 are the acquisitions from the second interferogram in the double-difference product.