

## SUPPLEMENTARY MATERIAL

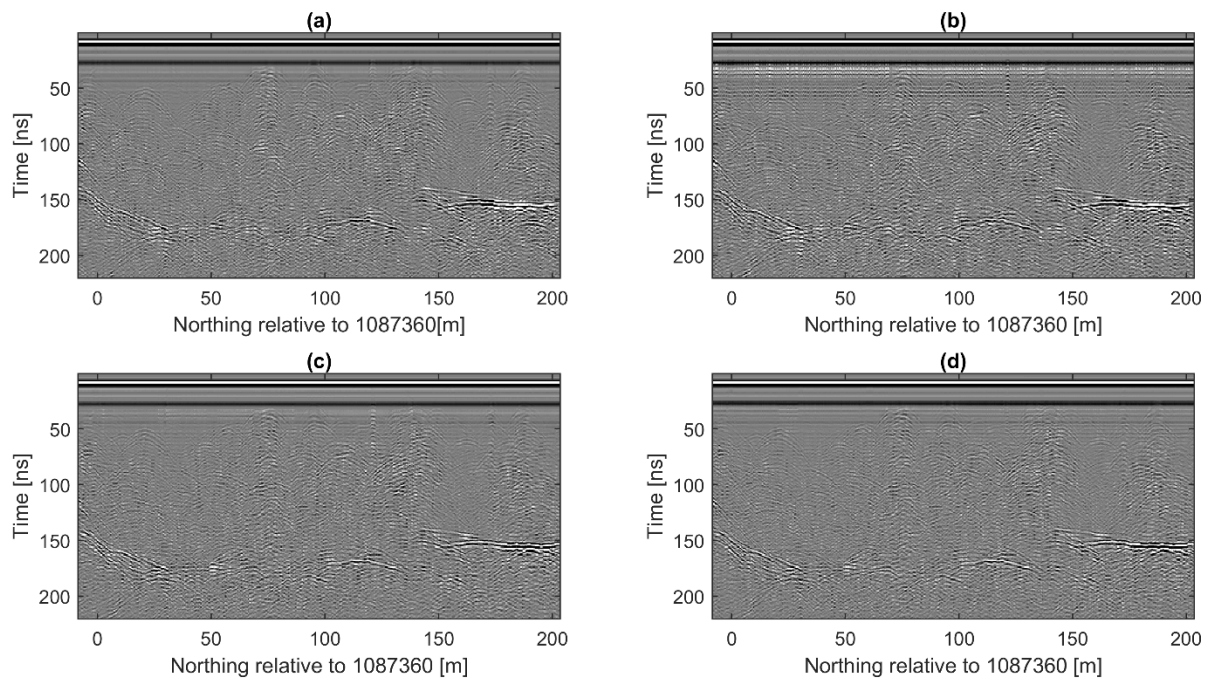
### Characterization of subglacial marginal channels using 3-D analysis of high-density ground-penetrating radar data

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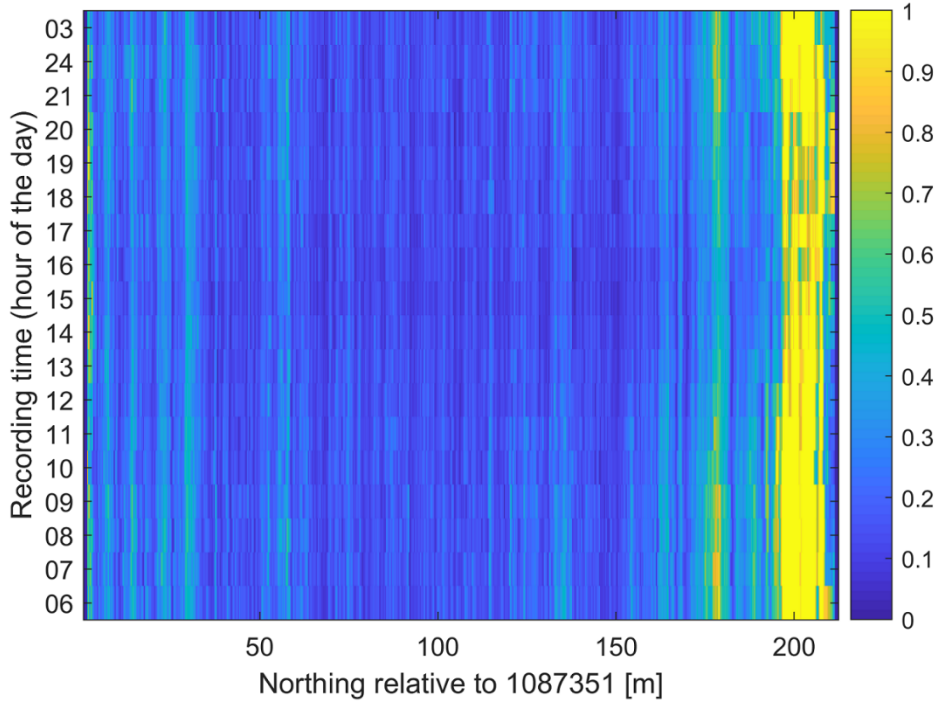
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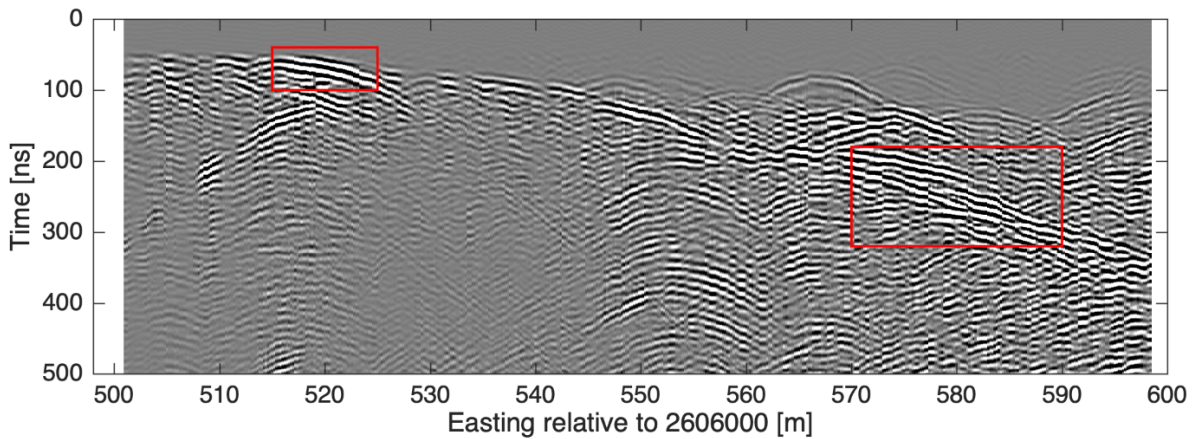
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**Figure S1:** GPR reflection profiles corresponding to the repeated survey line from the GdO, whose position is shown in Figure 3. The presented data were acquired at (a) 06:00h; (b) 12:00h; (c) 18:00h; and (d) 00:00h. The amplitude scale on each image is the same. The suspected subglacial channel at the GdO (Figure 8d) is visible as a high-amplitude reflection around 200 m.



**Figure S2:** Maximum normalized reflection amplitude at the glacier bed for the repeated survey line from the GdO presented in Figure S1. The plotted data show the evolution of the amplitude over the course of 22 hours, from 06:00h to 03:00h the following day. The suspected subglacial channel at the GdO (Figure 8d, main text) is located at around 200 m. Note that, although the reflection amplitude at the bed does exhibit some temporal variation, this variation is minimal compared to the amplitude variation associated with the presence of the subglacial channel.



**Figure S3:** GPR profile from the HGdA collected along 1092236-m northing. The red squares indicate regions along the glacier bed that were identified as subglacial channels in Figure 6d. These regions correspond with an increase in bed reflection amplitude, but they are not easy to identify as channels on the GPR cross-section because of insufficient vertical resolution.