

1 **Supplement to: Advancing interpretation of incoherent scattering in**
2 **ice penetrating radar data used for ice core site selection**

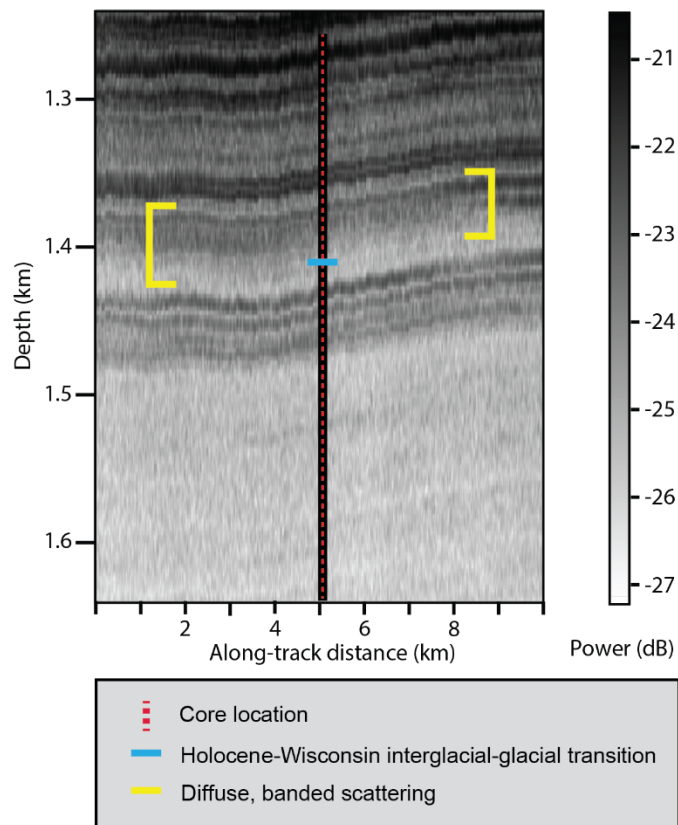
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8 Below, we provide four supplementary figures that provide the broader context that further justify interpretations of the radar
9 data in the main text. Here, we also include the reference list for Supplementary Tables 1 and 2.

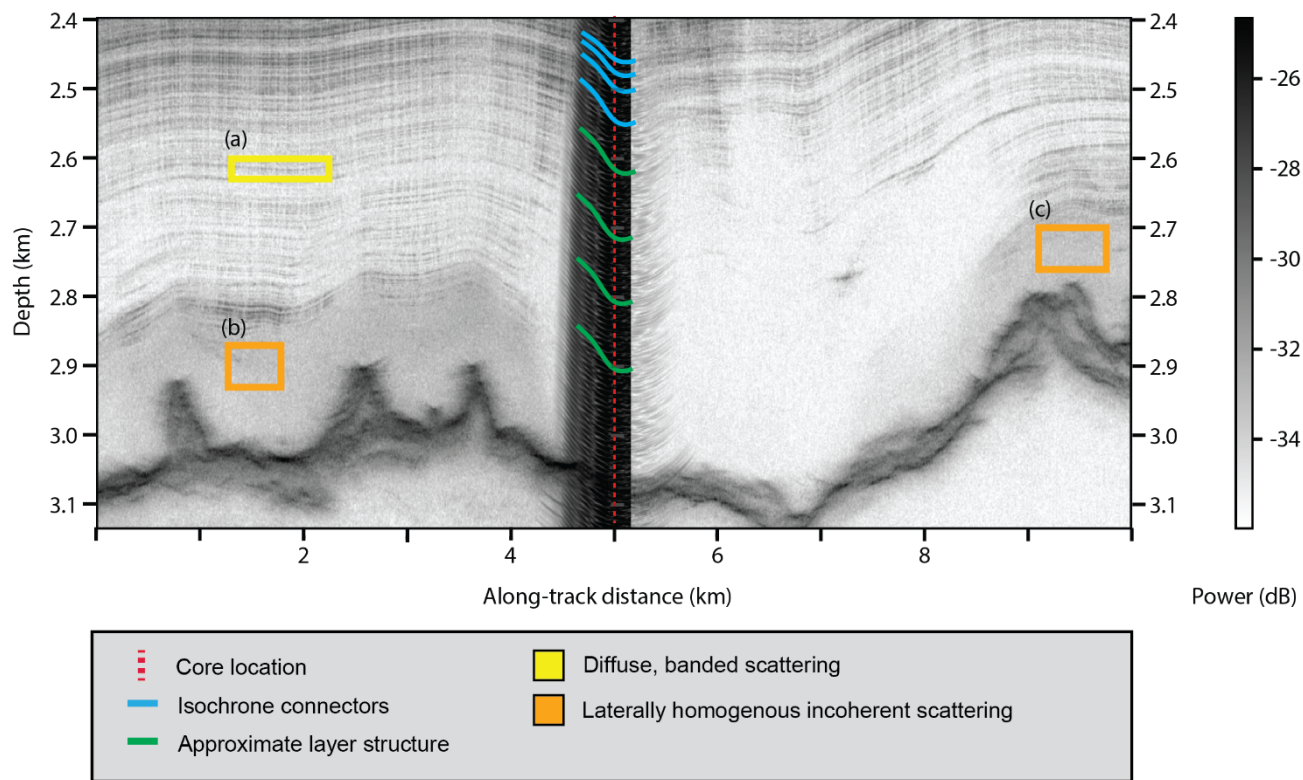


10

11 **Figure S1: NEEM radargram from depths spanning the Holocene-Wisconsin Interglacial-Glacial transition at 1419 m.**
12 **The climactic transition is coincident with a transition from a weak vertical girdle c-axis fabric to a strong single**
13 **maximum c-axis fabric and is collocated with a band of diffuse scattering in the radargram.**

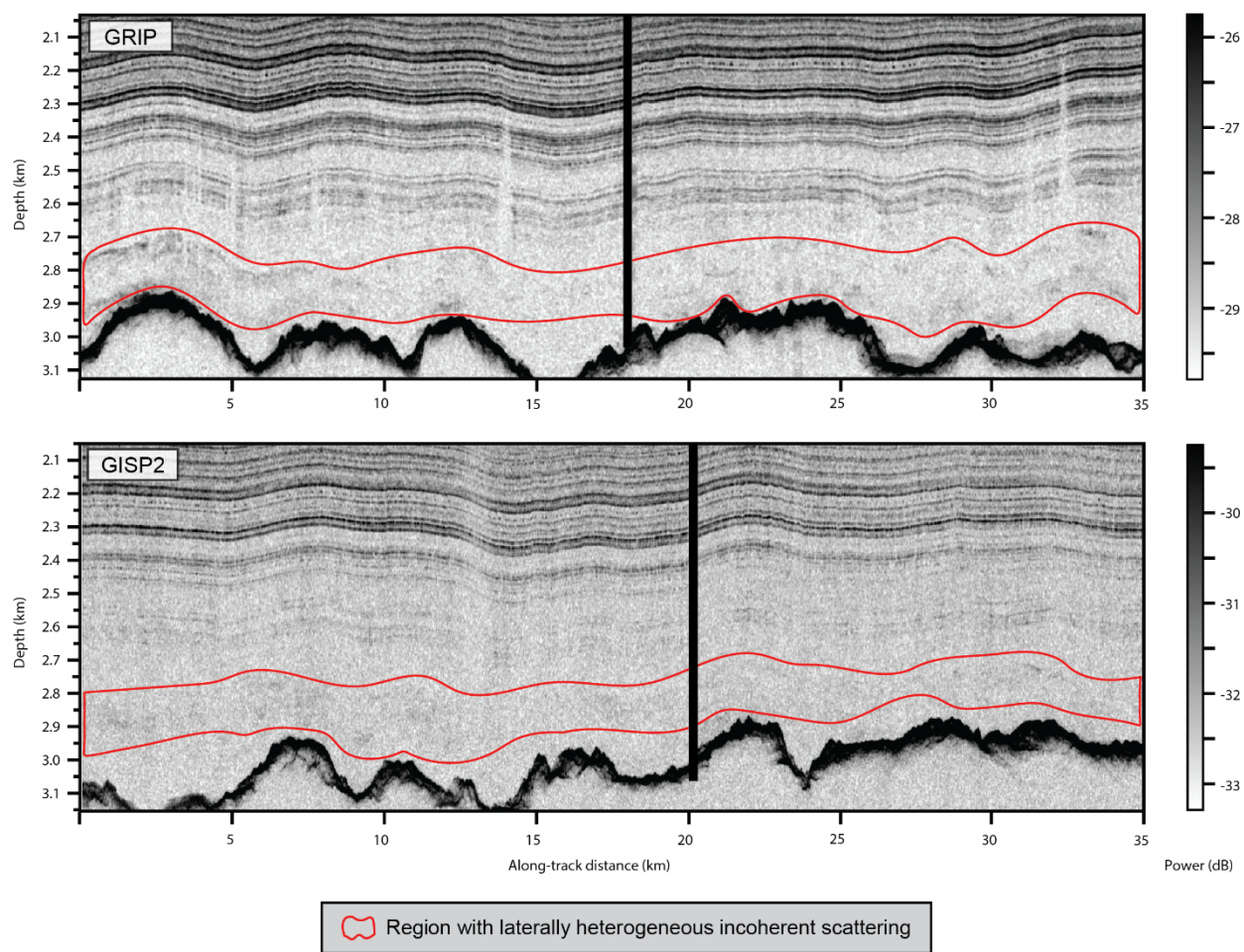
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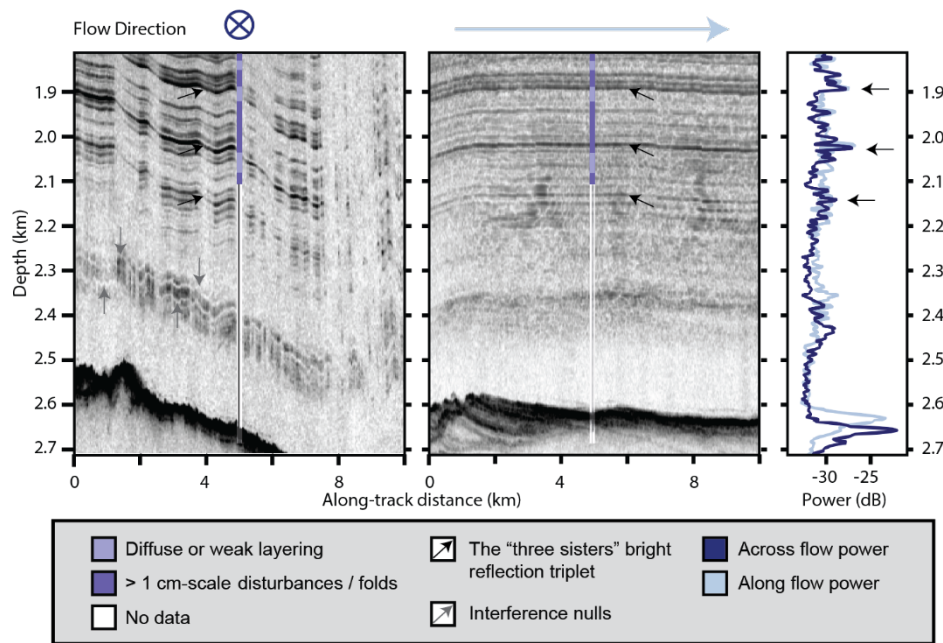


16

17 **Figure S2: Dome Fuji radargram with layer tracing across borehole (strong scattering at the ice drill core site is caused**
18 **by borehole fluid in the ice core cavity). Examples of diffuse banded scattering (a) and laterally homogeneous**
19 **incoherent scattering (b,c). The diffuse banded layer at (a) dips to ~2700 m at the core site and the onset of the**
20 **homogenous incoherent scattering unit at (b) dips to ~2900 m at the core site.**



23 **Figure S3: 35 km length radar transects from GRIP and GISP2. Areas of laterally heterogeneous incoherent scattering**
24 **are outlined in red. Black vertical line depicts location of ice core. The region of laterally heterogeneous incoherent**
25 **scattering is coincident with the approximate depth of the disturbed climate records at GRIP and GISP2.**



27

28 **Figure S4: Across (left) and along (right) flow radar transects from near the EastGRIP ice core. Vertical colormap over**
 29 **the ice core drill site visualizes depths of transitions between diffuse/weak layering and layers with periodic cm-scale**
 30 **scale disturbances. Transitions between these layer types at 1900 m and 2030 m are roughly coincident with two of the**
 31 **“three sisters” bright reflection horizons while the third reflection “sister” is below the depths of published linescan**
 32 **images. Interference nulls are observed within the incoherent scattering unit in the across flow radargram but are**
 33 **absent from the along flow radargram.**

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